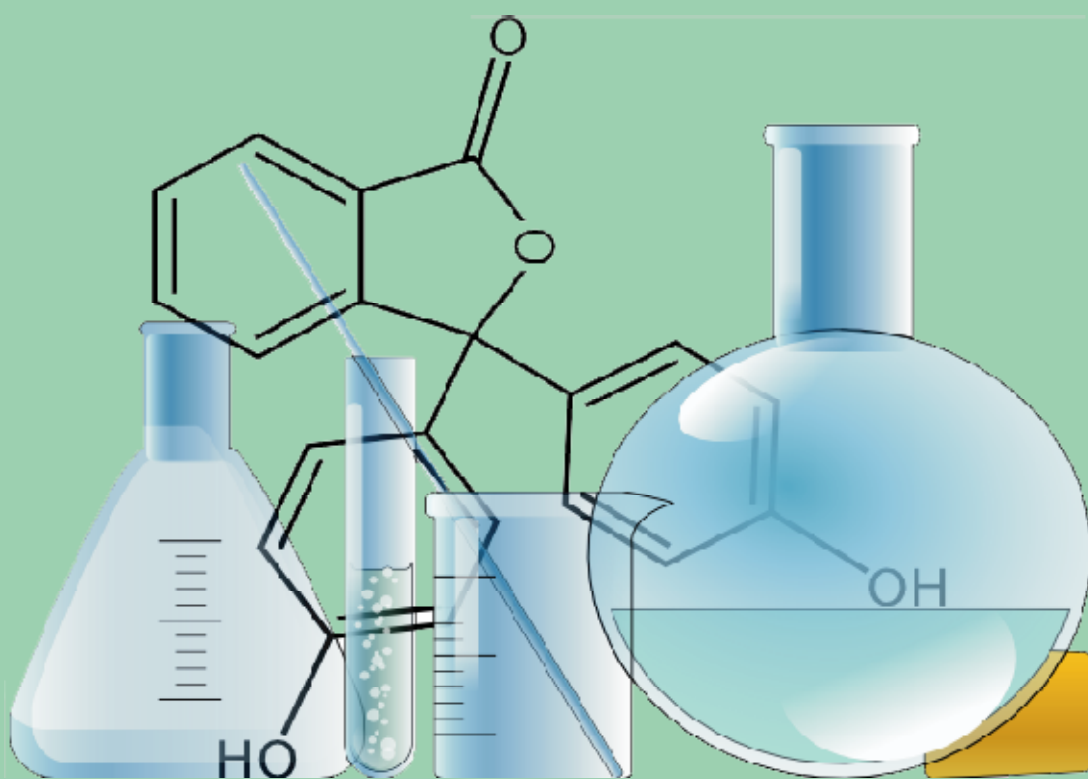


A+
প্রত্যক্ষদের জন্য
১৮০০+
বহুনির্বাচনী প্রশ্নোত্তর ভাণ্ডার

রসায়ন

নবম-দশম



বহুনির্বাচনী প্রশ্নোত্তর গাইড ।

স্টুডেন্ট গাইড লাইন

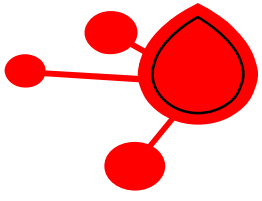
রচনা ও সম্পাদনাঃ

দেশের সেরা ১০০টি মাধ্যমিক বিদ্যালয়ের বিষয়ভিত্তিক শিক্ষক প্যানেল।

প্রকাশনায়ঃ স্টুডেন্ট গাইড লাইন

পরিচালনায়ঃ

মোঃ শফিকুর রহমান।



স্টুডেন্ট গাইড লাইন

cQj Aa'iq̃t imvq̃bi aivYv

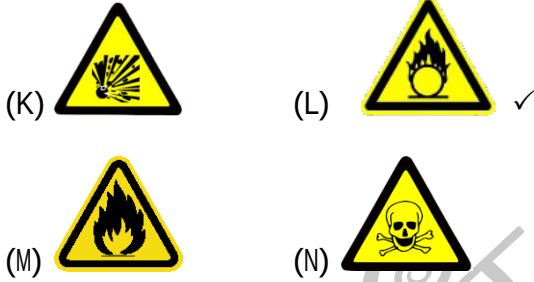
1| cμqRvZ Lṽ teik mgq aṭi msi ỹY ṽb̃Pi tKvb c̃ṽU ẽeüZ nq?

- (K) cRviṭfUfm ✓ (L) ṽfbMvi
(M) Bṽjb (N) Ãṽm̃Uvj b

2| ṽb̃Pi tKvbU ARe th̃M?

- (K) cṽb✓ (L) tkZmvi
(M) Awgl (N) Pie

3| GKU Wṽg tKvib M̃vm AṽQ| WṽgUi Mṽq Zlg tKvb mvs̃K̃iZK ṽP̃y h̃³ Kiṭe?



4| ṽP̃iU t̃K tevSv hṽqñ



- (i) GKU imvq̃bK ṽeμq
(ii) G̃Z Kveb-WB-A · ṽBW M̃vm Drcb nq
(iii) GU GKU ṽnb ṽeμq

ṽb̃Pi tKvbU m̃VK?

- (K) i I ii (L) ii I iii
(M) i I iii (N) i, ii I iii✓

5| tKvbUṭK Rxeṭbi Rb̃ ṽeÁvb ejv nq?

- (K) c̃ṽṽeÁvb (L) imvqb✓
(M) cṽYṽeÁvb (N) D̃m̃ṽeÁvb

6| cvPxb I gãhMxq imvqb PPv ṽK bṽg cĩiPZ?

- (K) Pharmacy (L) Chemistry
(M) Alchemy ✓ (N) Pharmacology

7| ṽL. ce KZ eQi c̃te ṽgkixqiv ṽY AṽniY KĩZv?

- (K) 5000 eQi (L) 6000 eQi

(M) 2600 eQi✓ (N) 1800 eQi

8| ÒAvj -ṭKigó k̃āU ṽṭq ṽb̃Pi tKvb mf̃ZṽK eSṽbṽ nṭqṭQ?

- (K) cvim̃ mf̃Zv (L) ṽm̃U mf̃Zv
(M) Avh mf̃Zv (N) ṽgkixq mf̃Zv✓

9| ÒAvj -ṭKigó k̃āU D̃m̃Z nṭqṭQñ

- (K) Avj -ṭKigó t̃ṭK (L) Avj -ṽKigq̃v t̃ṭK✓
(M) Avj -ṭKgvb t̃ṭK (N) Avj -ṭKgv t̃ṭK

10| cvPxb imvqbṽẽṽi mPbṽ nq tKvb t̃ṭk?

- (K) fviZel (L) Pxb
(M) Bs̃j̃ṽU (N) ṽgki✓

11| cvPxb ṽgkixq mf̃Zv gvb̃I i Pw̃ñv eüjṽst̃k tgUṽZ m̃ỹg nṭqṭQj Kx̃ṽte?

- (K) c̃ṽṽeÁvb PPvi gvãṭg(L) imvqb PPvi gvãṭg✓
(M) RxeÁvb PPvi gvãṭg (N) M̃YZ kṽ PPvi gvãṭg

12| KvcoṭK AṽKIYxq K̃i Zj̃Z cṽq 5000 eQi c̃te is̃q̃i ẽenvi ṽiṭ nṭqṭQjñ

- (K) Bs̃j̃ṽU (L) fviZet̃I✓
(M) Aṽg̃iKvq (N) dṽṽY

13| KveY th̃S̃Mi ṽnb̃ ṽb̃Pi tKvbU Drcb nq bṽ?

- (K) KveY ṽWB A · ṽBW (L) KveY g̃bṽ · ṽBW✓
(M) Rj̃xqeṽú (N) Zvc

14| ṽb̃Pi tKvb cμqvi gvãṭg Aṽgi eY nj̃ṽ i/cṽS̃iZ nq?

- (K) imvq̃bK cμq̃v (L) ṽR̃ek cμq̃v
(M) Rxe-imvq̃bK cμq̃v✓ (N) cṽK̃iZK cμq̃v

15| g̃iPv tKvbU?

- (K) Ãṽj̃ṽg̃bqvg A · ṽBW (L) ṽRsK A · ṽBW
(M) Aṽqib A · ṽBW✓ (N) bṽB̃UṽRb A · ṽBW

16| g̃iPv Kx̃?

- (K) t̃j̃ṽnv, Ã · ṭRb I Rj̃xqeṽú Øviṽ mó th̃S̃M✓
(L) t̃j̃ṽnv, Ã · ṭRb I cṽbi m̃gm̃E ṽgky
(M) t̃j̃ṽnv, bṽB̃UṽRb I Ã · ṭR̃bi m̃g̃S̃Z th̃S̃M
(N) t̃j̃ṽnv I cṽbi m̃g̃S̃Z th̃S̃M

17| Kṽṽi cavb imvq̃bK Dcṽvb tKvbU?

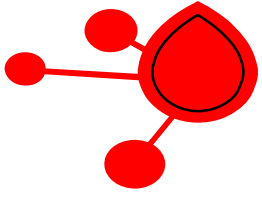
- (K) t̃mj̃ṽR✓ (L) ÷vP
(M) nṽB̃W̃ṽKveb (N) nṽB̃W̃ṽRb

18| cṽK̃iZK M̃vm cavbZ Kx̃?

- (K) B̃ṽ_b (L) ṽg̃ṽ_b✓
(M) B̃ṽ_b (N) B̃ṽBb

19| tgvg tKvb tKvb tg̃ṽj̃ i m̃g̃S̃ṽq M̃ṽZ th̃S̃M?

- (K) bṽB̃UṽRb I nṽB̃W̃ṽRb(L) m̃vj̃dvi I Ã · ṭRb
(M) Kveb I nṽB̃W̃ṽRb✓ (N) Ã · ṭRb I Kveb



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20| বtPi tKvU i vmbqB K vμqv bq?

(K) KvV Av, b Rvjv bv (L) cKZK M'vfm `nb

(M) tKt i vmb tcvov bv (N) ei tdi Mjb✓

21| btkvfm MnxZ evqi tKv Dcv`vbiU Avgv`i kixieExq KvR e'eüZ nq?

(K) A· tRb✓ (L) bBtUv tRb

(M) KveY WvB-A · vBW (N) AvMb

22| Lv`i c tqvRbxq DcKiY Avgl tKv ai tbi thSM?

(K) ARe thSM (L) Re thSM✓

(M) LibR c`v_

(N) Kveb I A· tRb mμjZ thSM

23| i vmbqB K mvt i i cavb Dcv`vb, t j v Kx Kx?

(K) A· tRb, bBtUv tRb I Kveb

(L) A· tRb, nvBtWtRb I Kveb

(M) Kveb, bBtUv tRb, A· tRb, dmd i v m✓

(N) Kveb, dmd i v m, m j dvi I A· tRb

24| Re thSM I ZSi mgstq b tPi tKvU Z i Kiv hvq?

(K) mvi (L) kvU✓

(M) evk (N) Ki Ig is

25| b tPi tKv c x i Z Z AvKiK t_ tK avZe c`v_ Avm i Z nq?

(K) t f Z c x i Z Z (L) i vmbqB K c x i Z Z✓

(M) Re c x i Z Z (N) c_ KxKiY c x i Z Z

26| tKv c μqv D i m K j c vXi Rb`Lv` Drcb K i i?

(K) RviY (L) v e t k i Y

(M) mvt j v Kms t k i Y✓ (N) tKv i v d j ms t k i Y

27| cZ`y ev c t i v y f v e m g m c vXK t j i Lv`i thvMv`vZv n j N

(K) D i m ✓ (L) mh

(M) ev`ZŠ (N) c vXKY

28| mvt j v Kms t k i Y g j Z Kx ai tbi c μqv?

(K) Re i vmbqB K c μqv✓ (L) RieK c μqv

(M) Ki Ig c μqv (N) ARe i vmbqB K

29| v`r, PaK Ges v e f b B t j K U b · Gi Z E t K v v e Á t b i A v I Z v f 3?

(K) D i m ` v e Á v b (L) R x v e Á v b

(M) i vmb (N) c`v_ v e Á v b✓

30| tZj, M'v m, Kqjv c i o t q Drcv`Z Zvc t_ tK b tPi tKvbiU Drcb Kiv hvq?

(K) cKZK M'v m (L) v`r✓

(M) PaK (N) h v Š K k 3

31| B t j K U b t · i v e f b y`vsk c`v_ i tKv ag t K KvR j v M t q Z i Kiv nq?

(K) i vmbqB K✓ (L) RieK

(M) Re i vmbqB K (N) c vY i vmbqB K

32| v e f b B t j K U b · Z i i d t j t K v c`v_ U b t t k l n e v i m a v e b v i t q t Q?

(K) t j v n v (L) `v

(M) Z v g v✓ (N) m x m v

33| D i m ` I c vXi g Z`i c i G`i t`n tKv c μqv i Kv tY g v U i m v t_ g t k h v q?

(K) A· tR t b i D c i ` Z t Z

(L) g v U i v e f b D c v`v t b i c f v e

(M) i vmbqB K c μqv

(N) A Y R x c μqv✓

34| f M t f i Z v c I P t c i c f v e D i m ` R v Z c`v_ i i v m b q B K c i e Z t b t K v b i U D r c b n q b i?

(K) t c t U v j q v g (L) c v K i Z K M'v m

(M) K q j v (N) A c i t k w a Z t Z j✓

35| i v m q t b i v m v e - b K v k I m i c`v_ K t m i D c i v b f i k x j?

(K) c`v_ v e Á v b (L) R x v e Á v b

(M) K i v D U v i v e Á v b (N) M i Y Z✓

36| K t K v R b U b v k K e`envi Kiv nq Kx D t i t k`?

(K) R i g i D e i Z v e x i R b`

(L) d m t j i c i o i R b`

(M) t c v K v g K o t K k m`n v b t\_ t K c i Z t i v a K i v i R b`✓

(N) A v M v Q v b g t j i R b`

37| K t m i m v n t h` c i g v Y i M v b e`v L`v Kiv hvq?

(K) f i e Y v j v e Y c x i Z i m v n t h`

(L) Z i t e j v i m v n t h`

(M) t K v q v U v g g`v K v b K t m i m v n t h`✓

(N) n v B t W t R b e Y v j x i m v n t h`

38| b`x-b v j v, c K i I L v j - v e t j i c v b `v I Z n q K x f v e?

(K) A v Z i 3 m v i I K x U b v k K Ø v i v✓

(L) R x v k R v j v b i t c v o v b v i d t j

(M) g k v i K t q j I A`v t i v m t j i t a v q v i

(N) d j - g t j i `Z c i c`Z v i R b` e`eüZ i v m b q B K c`v_

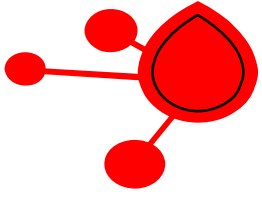
39| A v Z A i c v i g v Y e v q i D c i `Z Z Z K v v c v K i Z K M'v m t c v o v t j b t P i t K v b i U D r c b n q?

(K) K v e Y W v B A · v B W (L) K v e Y g t b v A · v B W✓

(M) t K v t i v t d t i v K v e b (N) b v B U v m A · v B W

40| b t P i t K v b M'v m i U e v q i m t_ g t k c i i t e t k i Z v c g v i v e i x K i t Q?

(K) K v e Y W v B A · v B W✓ (L) K v e Y g t b v A · v B W



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- (M) †Kv†iv †dv†iv Kveb (N) bvBUvm A · vBW
41| Kv† I Kqjv †cvov†j †b†Pi †KvbiU cv†Iqv hvq?
(K) ew†j KYv (L) Kveb KYv✓
(M) gv†U KYv (N) †Re KYv
42| KjKv†Lv†v I hv†ŠK hvbevb †_†K †b†Pi †Kv† M†vm†U Drcb
nq?
(K) KveY g†bv A · vBW (L) bvBUvm A · vBW
(M) nvB†W†Rb mv†j dvBW (N) Kveb W†B A · vBW✓
43| †b†Pi †KvbiU Abm†vb I M†elYv c†μqvi avc bq?
(K) †elqe† †baviY
(L) Kv†Ri c†iK†b†v cYqb
(M) djvdj m†ú†K AvMvg aviYvKiY
(N) †elqe†i AcK†i I †ZKi †K m†ú†K Ávb✓
44| Abm†vb I M†elYv c†μqvi me†kl avc†U nj†
(K) †elqe† †baviY
(L) c†x†Y I Z_†-Dcv†E msMn
(M) Z_†-Dcv†E Gi msMVb I †e†kiY
(N) †eÁvb I gvbe Kj††Y c†ve✓
45| Abm†vb M†elYvi c_g avc †KvbiU?
(K) Kv†Ri c†iK†b†v cYqb
(L) †elqe† †baviY✓
(M) †elqe† m†ú†K mg†K Ávb
(N) †elqe† m†ú†K AvMvg aviYv KiY
46| Abm†vb I M†elYv Kv†μ†gi †Zxq avc †KvbiU?
(K) Kv†Ri c†iK†b†v MnY
(L) c†x†Y Kv†μ†gi c_†Z
(M) †elqe† m†ú†K mg†K ÁvbRb✓
(N) djvdj m†ú†K AvMvg aviYv
47| Abm†vb I M†elYvi †elqe† †baviY Kiv nq Kx D††K?
(K) gvbe mg†Ri Kj††Yi K_v †PŠv K†i✓
(L) A_ Dcv†b†i Rb
(M) †k†vMZ †W†M AR†bi Rb
(N) M†el†Ki c††vb†Zi Rb
48| M†elYvi cZ†vkZ djvdj m†ú†K AvMvg aviYv jv†fi
c†q†RbxqZv Kx?
(K) Kv†Ri c†iK†b†v cYqb✓
(L) M†elYvi Abμg †baviY
(M) c†x†Y†Yi Rb† imvq†bK c_†v msMnKiY
(N) c†x†Y Kv†R AMM†Z †beviY
49| imvq†bK ††e†i msi†Y I e†env†i GK†U m†eRxb †bqg
P†ji Rb† Rv†Zms†Ni D†††M †Kv† m†††j Ab†ôZ nq?

- (K) imvq† I Gi AMM†Z (L) c†i†ek I imvq†
(M) c†i†ek I Dbq†✓ (N) imvq†bK †e† msi†Y c†x†Z
50| Rv†Zms†Ni D†††M c†i†ek I Dbq† bv†g GK†U m†††j Ab†ôZ nq KZ m††j?
(K) 1991 (L) 1992✓
(M) 1993 (N) 1994
51| †Kv† imvq†bK c_††i mie†v ev msi†Y Ki†Z n†j Zvi
c†††i M††q m†s†K†ZK †P†y c_††bi D††K† †KvbiU?
(K) m†s†K†ZK †P†y †v†v m††RB c_††i e†envi †e†a Rv†v hvq
(L) m†s†K†ZK †P†y †v†v c_††i Kv†Kv†Zv m†ú†K c†v_†gK
aviYv cv†Iqv hvq✓
(M) m†s†K†ZK †P†y †v†v c_††i Av†eK MVb m†ú†K aviYv
Kiv hvq
(N) ††††† †††L eSv hvq †h, GiU GK†U gj†evb c_†_†
52| GK†U c†††† ††††† c_†_† Av†Q† c††††i M††q †b†Pi †Kv†
m†s†K†ZK †P†y h³ Ki†Z n†e?



(K)



(L)



(M)



(N)

- 53| gvbe† n†K †eKj†v½ K†i ††Z c††i Ggb †ZR†††q i†k† †Kv†
c†††_†K†j †b††i †Kv† m†s†K†ZK †P†y†U c††††i M††q e†envi
Ki†Z n†e?



(K)



(L)

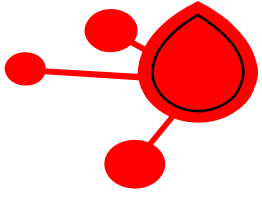


(M)



(N)

- 54| †ec† RbK m†s†K†Z†K †P†y †e†kó †Kv† c††††i M††qi †††††
†††L Kx eSv hv†e?
(K) GiU ††††† c_†_†
(L) GiU GK†U gv†vZ†K †e†v³ c_†_†✓



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(M) GvU Rxte i Rb ms`e`bkxj

(N) GvU cii`tek` IY NUvq

55| tZRw@q i`k! P`yU`K ejv nqN

(K) tUud`qj (L) WbD`qj

(M) UvBd`qj (N) Uud`qj ✓

56| t jv nvi gwiPv ai vN

(i) GKvU i v m v q i b K w e m u q v

(ii) t f \$ Z c i e Z b

(iii) R j x q e v @ u l A w . t R t b i D c i w Z z m s n u z n q

w b t P i t K v b u m m v K ?

(K) i l i i (L) i l i i i ✓

(M) i i l i i i (N) i, i i l i i i

57| c v t k i P i u t _ t K t e v S v h v q N



(i) GvU GK ai t b i i v m v q i b K w e m u q v

(ii) GvU c K Z c t y K v e b t h \$ M i n b

(iii) G i d t j K v e Y g t b v A v B W G e s c w b D r c b n q

w b t P i t K v b u m m v K ?

(K) i l i i ✓ (L) i l i i i

(M) i i l i i i (N) i, i i l i i i

58| g v b t l i w b Z e e n v h e , t h g b - e v k , P i w b , K v M R , K j g ,

c f i Z i i v m v q i b K c i i a n t j v N

(i) G m e c Y c K i Z t _ t K m s M n K i v n q

(ii) G , t j v w e i f b i v m v q i b K t h \$ M i m g \$ t q M i V Z

(iii) G m e c Y k i K v i L v b q w e i f b c ` v t _ i i v m v q i b K

c i e Z t b i g v a ` t g ^ Z i i K i v n q

w b t P i t K v b u m m v K ?

(K) i l i i (L) i l i i i

(M) i i l i i i ✓ (N) i, i i l i i i

59| L v e v i t L t j A v g v t ` i k i x i N

(i) w e c v K c i m u q v N t U

(ii) A v g i v k l ^ 3 c v B

(iii) t k Z m v i , A w g l l P i e m K j D c v ` v b c v B

w b t P i t K v b u m m v K ?

(K) i l i i

(L) i l i i i

(M) i i l i i i

(N) i, i i l i i i ✓

60| t g v U i m v B t K j P j v i k l ^ 3 A R b K t i N

(i) t c t U w j q v g ` n t b i g v a ` t g

(ii) w e i f b a v Z i m u q v i g v a ` t g

(iii) R v j w b i ` n t b i g v a ` t g

w b t P i t K v b u m m v K ?

(K) i ✓

(L) i l i i i

(M) i i l i i i

(N) i, i i l i i i

61| w c R v i t f u f m e e n v i K i v n q N

(i) c i m u q v R v Z L v e v i m s j y t Y i R b

(ii) w b l x L v ` t K L v e t i i D c t h v M x K i v i R b

(iii) L v e v i t K A v K I Y x q l ` x N v q x K i v i R b

w b t P i t K v b u m m v K ?

(K) i l i i

(L) i l i i i ✓

(M) i i l i i i

(N) i, i i l i i i

62| i v m v q i b K m v i N

(i) G i c a v b D c v ` b n j A w . t R b , b v B t U v t R b , K v e Y , d m d i v m

(ii) w k i K v i L v b v i i v m v q i b K w e m u q v i g v a ` t g D r c w ` Z

(iii) g w U t Z D i t m t ` i c i o c ` v b K t i

w b t P i t K v b u m m v K ?

(K) i l i i

(L) i l i i i

(M) i i l i i i

(N) i, i i l i i i ✓

63| w e t u v i K t j t e j K Z i v m v q i b K c ` v t _ i t y t i c t h v R t N

(i) G , t j v i c K i Z ` R e c v i A v B W n t Z c t i

(ii) G , t j v b v o v P r o v i t y t i A Z ` i a K m v e a v b Z v c t q v R b

(iii) G , t j v ` v n ` c ` v _

w b t P i t K v b u m m v K ?

(K) i l i i ✓

(L) i l i i i

(M) i i l i i i

(N) i, i i l i i i

64| ` v n ` c ` v \_ m g t n i e i k o ` n t j v N

(i) G , t j v t Z m n t R B A v , b a i t Z c v t i

(ii) G t ` i w e i m u q v Z v c D r c b n q

(iii) G , t j v w e l v ^ 3 c ` v _

w b t P i t K v b u m m v K ?

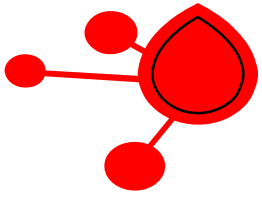
(K) i l i i ✓

(L) i l i i i

(M) i i l i i i

(N) i, i i l i i i

65| i v m v q i b K ` t e ` i e w Y R t e t o h v l q v G t ` i m s i y Y l e e n v t i m Z K Z v g j K e e v R i m i n t q c t o l G m s m v S G K u U



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mveRbxb wbgg Globally Harmonized System) Pvj i welqK
mvgb t i L 1992 mvj R wZmsNi D`vM cwik I Dbqb bvg
GKU mabjb Abid nq

D³ mabjb cZcv`welq QjN

(i) imvqbk c`v_K SiKi gvIvi fEz wefb fvM fvM
Kiv

(ii) imvqbk `te`i AbmÜvb I G`i Dci e`vcK MteIYv
Kiv

(iii) wefb aiabi imvqbk `te`i Rb` mveRbxb mvsKZK
Pý baviY Kiv

wbPi tKvU mVK?

(K) i l ii

(L) i l iii ✓

(M) ii l iii

(N) i, ii l iii

66| cvki PÍU t_K tevSq hvqN



(i) t`tni kvm-ckvm msµš ZšSi Rb`

(ii) Gi Øviv RxeY msµg NUZ cvti

(iii) GU K`Yvi mro KiZ cvti

wbPi tKvU mVK?

(K) i

(L) ii

(M) i l ii

(N) i, ii l iii ✓

67| cvki PÍU t_K tevSv hvqN



(i) GU Øviv A`Zri³ yZKi AvjvKiK eSvbnq

(ii) G aiabi iKl cwik Rb` yZKi

(iii) GB iKl kixi K`Yvi mro KiZ cvti

wbPi tKvU mVK?

(K) i l ii (L) i l iii ✓ (M) ii l iii (N) i, ii l iii

68| cwik tjtjKZ c`vt\_i týtÎ cqvR`N

(i) Giv wekl Kti RjR Rxei Rb` yZKi

(ii) G, jv b`x-bvji cwbZ wgtZ t`qv DPZ bq

(iii) G`i e`envi ci wgtYi msMn I cwikvab Avek`K

wbPi tKvU mVK?

(K) i l ii (L) i l iii (M) ii l iii (N) i, ii l iii ✓

wbPi Z`wU co Ges 69-70 bs cki DÈi `vI |

eZgvi hM imvqbi cwiPZ iagvÎ kÍ-KviLv, cixYvMti ev
MteIYvMti KvhµgB mvgex bq| h` Avgiv Pricvki NtU
hvIqv NUbvej j`y` Kwi, Zvntj t`Lz cve th, metýtÎB
imvqbi Dci`Z iqtQ|

69| gvUz Dm`i cwi c`vb KtiN

(K) gvUi LwbR c`v

(L) KveY WvB A`vBW

(M) cwb

(N) imvqbk mvi ✓

70| cvKZK M`vfm `vK?0

(K) gt_b ✓

(L) Kveb WvB A`vBW

(M) bBtUvRb

(N) wv@q M`vm

wbPi PÍU j`y` Ki Ges 71-73 bs cki DÈi `vIt



A



B



C

71| Dcti tKvU wevUvK `te`i mvsKZK Pý?

(K) A ✓

(L) B

(M) C

(N) A l B

72| tKv cvti Mvq Dcti tKv PýU t`Lj tevSv hvte th Zv
RjR Rxei Rb` yZKi?

(K) A

(L) B

(M) C ✓

(N) A l C

73| wec`RbK Pý tKv cvti Mvq `vKtj tevSv hvqN

(i) GtZ welv³ c`v_ AvQ

(ii) G aiabi c`v\_ Aek`B Zvjvex `v`b msiYy Kiv DmPZ

(iii) G aiabi c`vt\_i gva`g RxeYi msµgY ntZ cvti

wbPi tKvU mVK?

(K) i l ii ✓

(L) i l iii

(M) ii l iii

(N) i, ii l iii

wbPi Abt`Q`U cto I 74 I 75 bs cki DÈi `vIt

tKvbn imvqbk `e` mieivn ev msiYy Kitz ntj Zvi cvti

Mvq tjtjji mnvth` tkYtf` Abhvq cqvRbxq mvsKZK Pý

c`vb Kiv Aek`B evAbxq| Zvntj e`enviKvix mnRB tKvbn

imvqbk `te`i cvti Mvq tjtj t`LB Gi KvhKwiZv mautK

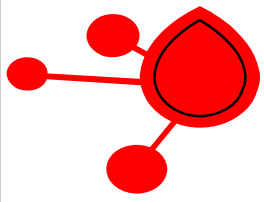
cv`gK aviYv wbZ cvi`e Ges Gi KvhKwiZvi SiK gv`vq tiL

msjYy I e`envi Kitz cvi`e|

74| DÍxcKi tjtjjs Gi DÍk` tKvU?

(K) G c`vt_i KvhKwiZv mautK Rvbn hvq ✓

(L) c`vt_i AvYweK MvB mautK aviYv Kiv hvq



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(M) $g_j \text{ evb } c^v _ \text{ Kbv } eSv \text{ hvq}$

(N) $c^v _ i \text{ c}^q \text{ RbxqZv } Rv \text{ hvq}$

75| $D \text{ ixc}^t \text{ Ki } S \text{ iKi } \text{ t}^y \text{ t}^i \text{ N}$

(i) $e^t \text{ Ei } Dc^t \text{ i } Av, \text{ t}^b \text{ i } \text{ kLv } \text{ Øv} \text{ i } Rv \text{ iK } c^v _ eSvq$

(ii) $\text{ iec}^t \text{ RbK } \text{ iPy } \text{ Øv} \text{ i } R \text{ x}^t \text{ ei } Rb^t \text{ m}^t \text{ e}^t \text{ b}^k \text{ xj } c^v _ eSvq$

(iii) $Av, \text{ t}^b \text{ i } \text{ kLv } \text{ Øv} \text{ i } \text{ v}^n \text{ c}^v _ eSvq$

$\text{ i b}^t \text{ Pi } \text{ t}^t \text{ Kvb} \text{ iU } \text{ m} \text{ iVK}?$

(K) i i ii (L) i i iii ✓ (M) ii i iii (N) i, ii i iii

$\text{ i b}^t \text{ Pi } \text{ iPy } \text{ iU } \text{ j}^y \text{ Ki } \text{ Ges } 76 \text{ i } 77 \text{ bs } \text{ ck}, \text{ t}^j \text{ vi } D \text{ Ei } \text{ v} \text{ i t}$



76| $D \text{ ixc}^t \text{ Ki } \text{ m}^t \text{ s}^t \text{ K} \text{ iZK } \text{ iPy } \text{ iU } \text{ Kx } \text{ m}^t \text{ s}^t \text{ v}^t \text{ S}?$

(K) $c^t \text{ i}^t \text{ ek}^t \checkmark$

(L) $\text{ iec}^t \text{ RbK}$

(M) $Av, \text{ t}^b \text{ i } \text{ kLv}$

(N) $\text{ iet}^t \text{ Øv} \text{ i } Z \text{ tevq}$

77| $D \text{ ixc}^t \text{ Ki } \text{ iPy } \text{ iU } \text{ t}^y \text{ t}^i \text{ ejv } \text{ hvq } \text{ th}^t \text{ N}$

(i) $G \text{ iU } c^t \text{ i}^t \text{ ek}^t \text{ i } Rb^t \text{ y}^t \text{ ZKi}$

(ii) $\text{ iet}^t \text{ k} \text{ i } K^t \text{ i } \text{ j}^t \text{ R } R \text{ x}^t \text{ ei } Rb^t \text{ y}^t \text{ ZKi}$

(iii) $b^t \text{ x}^t \text{ vjvi } c^t \text{ i}^t \text{ b}^t \text{ Z } \text{ i}^t \text{ gk}^t \text{ Z } \text{ t}^t \text{ i } \text{ qv } D \text{ i}^t \text{ PZ } \text{ bq}$

$\text{ i b}^t \text{ Pi } \text{ t}^t \text{ Kvb} \text{ iU } \text{ m} \text{ iVK}?$

(K) i i ii

(L) i i iii ✓

(M) ii i iii

(N) i, ii i iii

$\text{ iØZxq } Aa^t \text{ vqt } c^v _ i \text{ Ae}^t \text{ v}$

1| $Kv^t \text{ c } \text{ Mig } \text{ Pv } \text{ i}^t \text{ vL}^t \text{ j } \text{ i b}^t \text{ Pi } \text{ t}^t \text{ Kvb } c^t \text{ i}^t \text{ qv} \text{ iU } \text{ N}^t \text{ U}?$

(K) $e^t \text{ Øv} \text{ x}^t \text{ feb}^t \checkmark$

(L) $Da^t \text{ cv} \text{ Zb}$

(M) $e^t \text{ vcb}$

(N) $\text{ i btm} \text{ iY}$

2| $R \text{ jxq } e^t \text{ Øv} \text{ t}^t \text{ K } \text{ hLb } \text{ Nb}^t \text{ x}^t \text{ feb } \text{ Kiv } \text{ nq}, \text{ ZLb } \text{ KY}^t \text{ v} \text{ mg}^t \text{ t}^t \text{ i } \text{ t}^y \text{ t}^i \text{ Kx } \text{ NU}^t \text{ e}?$

(K) $Av \text{ Kvi } \text{ msK} \text{ i}^t \text{ PZ } \text{ n}^t \text{ e}$

(L) $P \text{ jv} \text{ Pj } \text{ Ki}^t \text{ Z } \text{ v} \text{ K}^t \text{ e}$

(M) $G \text{ KB } \text{ Ae}^t \text{ v}^t \text{ b } \text{ t}^t \text{ K } \text{ Kv}^t \text{ c}^t \text{ Z } \text{ v} \text{ K}^t \text{ e}$

(N) $c^t \text{ i}^t \text{ cv}^t \text{ k } \text{ kr}^3 \text{ i b} \text{ MZ } \text{ Ki}^t \text{ e}^t \checkmark$

3| $\text{ i b}^t \text{ Pi } \text{ t}^t \text{ Kvb } \text{ iPy } \text{ iU } \text{ Ea}^t \text{ cv} \text{ Z}^t \text{ bi } Rb^t \text{ c}^t \text{ h}^t \text{ v}^t \text{ R}^t?$

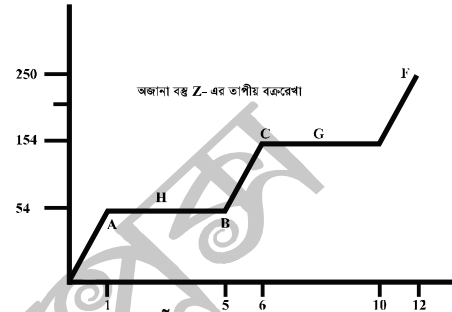
(K)

(L)

(M)

(N)

4| $AR \text{ v} \text{ b} \text{ v } \text{ Ki}^t \text{ Vb } e^t \text{ Z- } G \text{ i } \text{ Zvc}^t \text{ xq } e^t \text{ i}^t \text{ Lvt}$



$Dc^t \text{ i } \text{ iPy } \text{ iU } \text{ n}^t \text{ Z } \text{ tev} \text{ Sv } \text{ hvq}^t \text{ N}$

(i) $Z \text{ e}^t \text{ iU } \text{ i } \text{ Mj } \text{ b}^t \text{ v} \text{ sK } 54^0 \text{ C}$

(ii) $Z \text{ e}^t \text{ iU } \text{ DØv} \text{ qx}$

(iii) $A-B \text{ i } C-D \text{ t}^t \text{ i } \text{ Lv } e^t \text{ iU } \text{ i } \text{ Mj } \text{ b}^t \text{ v} \text{ sL } \text{ i } \text{ Øv} \text{ b}^t \text{ v} \text{ sK } eSvq$

$\text{ i b}^t \text{ Pi } \text{ t}^t \text{ Kvb} \text{ iU } \text{ m} \text{ iVK}?$

(K) i i ii

(L) ii i iii

(M) i i iii ✓

(N) i, ii i iii

5| $Zvcg \text{ i}^t \text{ v } c^t \text{ i}^t \text{ eZ}^t \text{ bi } \text{ m}^t \text{ Ae}^t \text{ v } \text{ i } c^t \text{ i}^t \text{ eZ}^t \text{ b } \text{ n}^t \text{ j } \text{ i b}^t \text{ Pi } \text{ t}^t \text{ Kvb} \text{ iU } \text{ c}^t \text{ i}^t \text{ eZ}^t \text{ nq } \text{ bv}?$

(K) $\text{ i b}^t \text{ R}^t \text{ e}^t \text{ i}^t \text{ k}^t \text{ o}^t$

(L) ag

(M) $AY \text{ i } \text{ MVb}^t \checkmark$

(N) $Av^t \text{ s}^t \text{ Av}^t \text{ Y}^t \text{ iek}^t \text{ iZ}$

6| $\text{ t}^t \text{ Kvb } \text{ Ae}^t \text{ v} \text{ q } \text{ AY}^t \text{ m}^t \text{ gn } \text{ met}^t \text{ P}^t \text{ q } \text{ Kv}^t \text{ Qv} \text{ K}^t \text{ v} \text{ Q } \text{ t}^t \text{ K } \text{ Kv}^t \text{ c}^t \text{ Z } \text{ v}^t \text{ K}?$

(K) $Ki^t \text{ Vb}^t \checkmark$

(L) $Zi \text{ j}$

(M) $evq \text{ exq}$

(N) $cv \text{ Rgv}$

7| $e^t \text{ ev } c^v _ i \text{ i b}^t \text{ R}^t \text{ e}^t \text{ i}^t \text{ k}^t \text{ o}^t \text{ bq } \text{ t}^t \text{ Kvb} \text{ iU}?$

(K) fi

(L) $IRb^t \checkmark$

(M) $RoZ \text{ v}$

(N) $\text{ iet}^t \text{ v} \text{ Z } (AvqZb)$

8| $\text{ t}^t \text{ Kvb} \text{ iU } c^v _ \text{ bq}?$

(K) evq

(L) $Av^t \text{ j } \text{ vK}^t \checkmark$

(M) $cv \text{ b}$

(N) Pv^t

9| $\text{ hvi } \text{ RoZv } \text{ Av}^t \text{ Q } \text{ Zv} \text{ B}^t \text{ N}$

(K) $c^v _ \checkmark$

(L) $k^t \text{ v}^3$

(M) $Zi \text{ i}^t \text{ Z}$

(N) $\text{ t}^t \text{ Kvb} \text{ iU } \text{ B } \text{ bq}$

10| $\text{ t}^t \text{ Kvb} \text{ iU } c^v _ ?$

(K) $evZ \text{ v} \text{ m}^t \checkmark$

(L) $Av^t \text{ j } \text{ v}$

(M) $Zvcg \text{ i}^t \text{ v}$

(N) Zvc

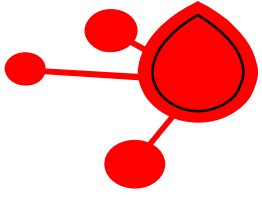
11| $c^v _ \text{ m}^t \text{ Øv} \text{ t}^t \text{ K } \text{ t}^t \text{ Kvb } e^t \text{ v} \text{ K}^t \text{ iU } \text{ m} \text{ iVK } \text{ bq}?$

(K) $c^v _ \text{ t}^t \text{ Kvb } \text{ v}^t \text{ b } \text{ Lj } \text{ K}^t \text{ i } \text{ bv} \text{ i}^t \checkmark$

(L) $c^v _ i \text{ fi } \text{ iet}^t \text{ v} \text{ g} \text{ v} \text{ b} \text{ i}$

(M) $c^v _ i \text{ IRb } c^t \text{ i}^t \text{ exc}^t \text{ t}^t \text{ Øv } \text{ Ae}^t \text{ v}^t \text{ bi } \text{ Dci } \text{ i b}^t \text{ fik} \text{ xj } \text{ i}$

(N) $c^v _ \text{ AmsL}^t \text{ y}^t \text{ y}^t \text{ AY } \text{ Øv} \text{ i } \text{ M} \text{ iVZ} \text{ i}$



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12| $\text{wb}\pi\text{Pi } \dagger\text{Kvb}\text{U}i \text{ `pZv mewak?}$

(K) jeY✓

(L) nvB†W†Rb

(M) cwb

(N) KveY WbA · vBW

13| $\text{wnj qvg M}^{\text{vm}}\text{U} \text{ `eikó" Kx?}$

(K) $\text{wb}\pi\text{ `ó AvqZb ev AvKvi } i\ddagger\ddagger\text{Q}$

(L) $\text{AYmg}\pi\text{ni ga}^{\text{Kvi}} \text{ `iZ A}\ddagger\text{BK Kg, ZvB AvKIY k}\pi^3 \text{ teik}$

(M) $\text{AYmg}\pi\text{ c}\pi\text{q g}^3 \text{ fv}\ddagger\text{e PjvPj Ki}\ddagger\text{Z c}\pi\text{i} \checkmark$

(N) $\text{ms}\ddagger\text{KvPbkxj Zv tbB}$

14| $\text{mvaviY Pvc I DòZvq } \text{wb}\pi\text{ } \dagger\text{Kvb c}^{\text{v}}\text{ `i AvKvi Ges}$
 $\text{AvqZb `}\ddagger\text{UvB } \text{wb}\pi\text{ `ó } \text{v}\ddagger\text{K?}$

(K) $\text{P}\pi\text{b} \checkmark$

(L) $\text{A}\pi \cdot \ddagger\text{Rb}$

(M) $\text{mqv}\pi\text{eb } \ddagger\text{Zj}$

(N) cwb

15| $100^0 \text{ tm Zvcgv}\pi\text{v cwb}\ddagger\text{Z Zvc } \pi\text{ `}\ddagger\text{j } \pi\text{K NU}\ddagger\text{eN}$

(K) $\text{cwb}i \text{ Zvcgv}\pi\text{v evo}\ddagger\text{e}$

(L) $\text{cwb}i \text{ Zvcgv}\pi\text{v evo}\ddagger\text{e I cwb ev}\ddagger\text{@ú c}\pi\text{iYZ n}\ddagger\text{e}$

(M) $\text{cwb}i \text{ Zvcgv}\pi\text{v } \pi\text{ `i } \text{vK}\ddagger\text{e Ges cwb ev}\ddagger\text{@ú c}\pi\text{iYZ n}\ddagger\text{e}$

(N) $\text{cwb}i \text{ Zvcgv}\pi\text{v I } \text{f}\ddagger\text{SZ Ae}^{\text{vi}} \text{ } \dagger\text{Kvb c}\pi\text{ieZb NU}\ddagger\text{e bv}$

16| $\text{Zvck}\pi^3 \text{ e}^{\text{envi}} \text{ K}\ddagger\text{i c}^{\text{v}}\text{ `}\ddagger\text{K GK Ae}^{\text{v}} \text{ } \dagger\text{K Ac}i \text{ Ae}^{\text{vq}}$
 $\text{i}\ddagger\text{c}\pi\text{š}i \text{ Kiv m}\pi\text{e-}\ddagger\text{Kvb Z}\ddagger\text{Ei Dci } \pi\text{f}\ddagger\text{E K}\ddagger\text{i c}\pi\text{ZiòZ?}$

(K) $\text{KYvi M}\pi\text{ZZE} \checkmark$

(L) AvYieK ZE

(M) $\text{c}\pi\text{igvYieK ZE}$

(N) $\text{A}^{\text{v}}\ddagger\text{fvM}^{\text{v}}\text{v}\ddagger\text{W}\pi \text{ ZE}$

17| $\dagger\text{Kvb}\text{U}i \text{ KYvmgn } \text{ `pfv}\ddagger\text{e ci}^{\text{v}}\text{ `ú}\pi\text{i A}\pi\text{Z m}\pi\text{bK}\ddagger\text{U } \text{v}\ddagger\text{K?}$

(K) cwb

(L) $\text{fK}\pi\text{i}\pi\text{mb}$

(M) $\text{Lve}i \text{ jeY} \checkmark$

(N) $\text{KveY WbA } \cdot \text{vBW}$

18| $\dagger\text{Kvb c}^{\text{v}}\text{ `U}i \text{ AvštAvYieK k}\pi^3 \text{ me}\ddagger\text{P}\ddagger\text{q Kg?}$

(K) $\text{Pbv c}\pi\text{ `i}$

(L) $\text{tc}\ddagger\text{Uv}\pi$

(M) $\text{bvB}\ddagger\text{Uv}\ddagger\text{Rb} \checkmark$

(N) `a

19| $\text{Zvck}\pi^3 \text{ i cfv}\ddagger\text{e M}^{\text{v}}\text{fmi KYv, } \ddagger\text{jvi } \ddagger\text{y}\ddagger\text{I K}\pi\text{i c c}\pi\text{ieZb}$
 $\text{NU}\ddagger\text{?}$

(K) $\text{AvštAvYieK k}\pi^3 \text{ e}\pi\text{x c}\pi\text{q}$

(L) $\text{M}\pi\text{Zk}\pi^3 \text{ nvm c}\pi\text{q}$

(M) $\text{AvštAvYieK k}\pi^3 \text{ I M}\pi\text{Zk}\pi^3 \text{ mgvb nq}$

(N) $\text{Zxe}\ddagger\text{e}\pi\text{M G}\ddagger\text{jv}\ddagger\text{g}\ddagger\text{jvfv}\ddagger\text{e PjvPj K}\ddagger\text{i} \checkmark$

20| $\text{AvštAvYieK k}\pi^3 \text{ } \pi\text{K?}$

(K) $\text{c}\pi\text{igvYmg}\pi\text{ni ci}^{\text{v}}\text{ `ú}i \text{ AvKIY}$

(L) $\text{AYmg}\pi\text{ni ci}^{\text{v}}\text{ `ú}i \text{ AvKIY} \checkmark$

(M) $\text{c}\pi\text{igvYmg}\pi\text{ni ci}^{\text{v}}\text{ `ú}i \text{ vKIY}$

(N) $\text{AYmg}\pi\text{ni ci}^{\text{v}}\text{ `ú}i \text{ vKIY}$

21| $\dagger\text{Kvb}\text{U} \text{ m}\pi\text{V}\text{K?}$

(K) $\text{M}^{\text{v}}\text{mxq c}^{\text{v}}\text{ `}\ddagger\text{i } \text{wb}\pi\text{ `ó AvqZb Av}\ddagger\text{Q}$

(L) $\text{Zij c}^{\text{v}}\text{ `}\ddagger\text{i } \text{wb}\pi\text{ `ó AvqZb Av}\ddagger\text{Q, } \pi\text{Kš } \text{wb}\pi\text{ `ó AvKvi tbB} \checkmark$

(M) $\text{mKj K}\pi\text{Vb c}^{\text{v}}\text{ `}\ddagger\text{i K Zvc } \pi\text{ `}\ddagger\text{j Zi}\ddagger\text{j i}\ddagger\text{c}\pi\text{š}i \text{Z nqI}$

(N) $\text{K}\pi\text{Vb c}^{\text{v}}\text{ `}\ddagger\text{i } \text{wb}\pi\text{ `ó AvqZb tbB}$

22| $\text{wb}\pi\text{Pi } \dagger\text{Kvb}\text{U}i \text{ NbZ mewak?}$

(K) cwb

(L) $\text{Kv}\ddagger\text{Vi UKiv} \checkmark$

(M) `a

(N) $\text{wnj qvg M}^{\text{vm}}$

23| $\dagger\text{Kvb c}^{\text{v}}\text{ `U}i \text{ AvštAvYieK k}\pi^3 \text{ me}\ddagger\text{P}\ddagger\text{q Kg?}$

(K) $\text{c}\pi\text{ `i}$

(L) $\text{tc}\ddagger\text{Uv}\pi$

(M) $\text{fjv}\pi\text{v}$

(N) $\text{Kveb WbA } \cdot \text{vBW} \checkmark$

24| $\text{òPv}\ddagger\text{c AvqZb } \pi\text{ `i gv}\pi\text{q ms}\ddagger\text{KvPbkxj } \text{wb}\pi\text{ } \dagger\text{Kvb}\text{U}i \text{ } \ddagger\text{y}\ddagger\text{I}$
 $\text{D}\pi^3 \text{ } \pi\text{U c}\ddagger\text{hvR}^{\text{v}}?$

(K) $\text{wnj qvg M}^{\text{vm}}$

(L) $\text{gv}\ddagger\text{e j}$

(M) `a✓

(N) Kv

25| $\text{òPv}\ddagger\text{c AvqZb A}\pi\text{aK gv}\pi\text{q ms}\ddagger\text{KvPbkxj } \text{wb}\pi\text{ } \dagger\text{Kvb}\text{U}i$
 $\text{ } \ddagger\text{y}\ddagger\text{I D}\pi^3 \text{ } \pi\text{U c}\ddagger\text{hvR}^{\text{v}}?$

(K) $\text{wnj qvg M}^{\text{vm}} \checkmark$

(L) $\text{gv}\ddagger\text{e j}$

(M) `a

(N) Kv

26| $\text{wb}\pi\text{Pi } \dagger\text{Kvb}\text{U}i \text{ AvštAvYieK AvKIY me}\ddagger\text{P}\ddagger\text{q te}\pi\text{K?}$

(K) $\text{fK}\pi\text{i}\pi\text{mb}$

(L) $\text{mvaviY jeY} \checkmark$

(M) cwb

(N) $\text{bvB}\ddagger\text{Uv}\ddagger\text{Rb}$

27| $\dagger\text{Kvb c}^{\text{v}}\text{ `U}i \text{ AvštAvYieK AvKIY me}\ddagger\text{P}\ddagger\text{q Kg?}$

(K) $\text{nvB}\ddagger\text{W}\ddagger\text{Rb/bvB}\ddagger\text{Uv}\ddagger\text{Rb} \checkmark$

(L) cwb

(M) jeY

(N) fZj

28| $\dagger\text{Kvb Zi}\ddagger\text{j i } \ddagger\text{Ubv}\pi\text{K evB}\ddagger\text{i i Pv}\ddagger\text{ci Dci } \pi\text{bfikxj G K } \pi\text{U}i$
 $\text{A } \text{n}\ddagger\text{j}\pi\text{N}$

(K) $\text{Pvc c}\ddagger\text{qvM Ki}\ddagger\text{j Zij c}^{\text{v}}\text{ `}\ddagger\text{i } \ddagger\text{Ubv}\pi\text{K nvm c}\pi\text{qI}$

(L) $\text{Pvc c}\ddagger\text{qvM Ki}\ddagger\text{j Zij c}^{\text{v}}\text{ `}\ddagger\text{i } \ddagger\text{Ubv}\pi\text{K e}\pi\text{x c}\pi\text{qI} \checkmark$

(M) $\text{Pvc c}\ddagger\text{qvM Ki}\ddagger\text{j Zij c}^{\text{v}}\text{ `}\ddagger\text{i } \ddagger\text{Ubv}\pi\text{K Ac}\pi\text{ie}\pi\text{ZZ}$

$\text{v}\ddagger\text{K}$

(N) $\text{Pvc c}\ddagger\text{qvM Ki}\ddagger\text{j Zij c}^{\text{v}}\text{ `}\ddagger\text{j } \ddagger\text{Ubv}\pi\text{K kb}^{\text{v}} \text{ n}\ddagger\text{q hvqI}$

29| $\text{te}\ddagger\text{j}\pi\text{bi } \text{fZ}\pi\text{i i M}^{\text{v}}\text{fmi Zvcgv}\pi\text{v evo}\ddagger\text{j } \dagger\text{Kvb}\text{U} \text{ NU}\ddagger\text{e?}$

(K) $\text{Pvc evo}\ddagger\text{e} \checkmark$

(L) $\text{Pvc Kg}\ddagger\text{e}$

(M) $\text{e}^{\text{vcb}} \text{ NU}\ddagger\text{e}$

(N) $\text{vbtmiY NU}\ddagger\text{e}$

30| $\dagger\text{Kv}\ddagger\text{bv gva}^{\text{tg}} \text{ K}\pi\text{Vb, Zij ev M}^{\text{v}}\text{mxq e}^{\text{v}} \text{ `i } \text{Zt}\ddagger\text{Z I mgfv}\ddagger\text{e}$
 $\text{c}\pi\text{ie}^{\text{v}}\text{B nIqv}i \text{ c}\pi\text{m}\pi\text{q}\ddagger\text{K Kx e}\ddagger\text{j?}$

(K) $\text{e}^{\text{vcb}} \checkmark$

(L) vbtmiY

(M) $\text{A}\pi\text{f}^{\text{v}}\text{eY}$

(N) $\text{Ea}\ddagger\text{c}\pi\text{Zb}$

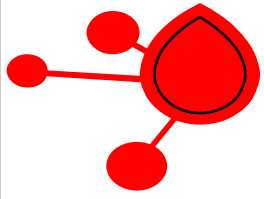
31| $\text{mi}\pi\text{Q}^{\text{v}} \text{ c}^{\text{v}}\text{ `}\ddagger\text{ } \dagger\text{Kvb M}^{\text{v}}\text{fmi D}^{\text{v}}\text{Pvc } \dagger\text{K } \text{wb}\pi\text{Pvc A}\hat{\text{A}}\ddagger\text{j te}\pi\text{i}\ddagger\text{q}$
 $\text{Avmvi c}\pi\text{m}\pi\text{q}\ddagger\text{K Kx e}\ddagger\text{j?}$

(K) e^{vcb}

(L) $\text{vbtmiY} \checkmark$

(M) $\text{A}\pi\text{f}^{\text{v}}\text{eY}$

(N) $\text{Ea}\ddagger\text{c}\pi\text{Zb}$



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32| $\uparrow KvbU \text{ } ^{-}Zt\ddot{U}Z \text{ } c\mu q?$

- (K) $\uparrow btm\dot{I}Y$ (L) $c\dot{I}Zb$
(M) $e^{\vee}cb\checkmark$ (N) $c\dot{I}i^{\vee}eb$

33| $\uparrow KvbU\dot{I}i \uparrow \ddot{y}\dot{t}\dot{I} e^{\vee}c\dot{b}i \text{ } n\dot{v}i \text{ } me\dot{t}P\dot{t}q \text{ } te\dot{k}?$

- (K) $He\checkmark$ (L)
(M) CO_2 (N) NH_3

34| $A\dot{v}e\dot{x} \text{ } c\dot{v}\dot{t}\dot{I}i \text{ } \mu Q^{\vee}c_eo \text{ } n\dot{t}j \text{ } \uparrow KvbU \text{ } e\dot{v}\dot{x} \text{ } c\dot{v}q?$

- (K) Pvc (L) $AYi \text{ } ^{-}Zt\ddot{U}ZZ\checkmark$
(M) $AYi \text{ } ms\dot{t}K\dot{v}Pb\dot{x}jZ\dot{v}$ (N) $AYi \text{ } A\dot{v}K\dot{v}i$

35| $\mu\dot{m}j, \text{ } v\dot{i} \text{ } \mu Q^{\vee} \text{ } n\dot{t}q \text{ } M^{\vee}m \text{ } te\dot{i} \text{ } n\dot{t}q \text{ } A\dot{v}m\dot{v}\dot{t}K \text{ } \mu b\dot{t}av^3 \text{ } \uparrow KvbU \text{ } e\dot{v}j \text{ } hvq?$

- (K) $e^{\vee}cb$ (L) $\uparrow btm\dot{I}Y\checkmark$
(M) $Nb\dot{x}feb$ (N) $\dot{U}Ub$

36| $Z\dot{v}\dot{t}c \text{ } cm\dot{v}iY\dot{x}jZ\dot{v} \text{ } me\dot{t}P\dot{t}q \text{ } te\dot{k} \text{ } c^{\vee}kb \text{ } Ki\dot{t}e \text{ } \mu b\dot{t}Pi \text{ } \uparrow KvbU?$

- (K) $\mu\dot{m}j \text{ } q\dot{v}g \text{ } M^{\vee}m\checkmark$ (L) $g\dot{v}\dot{t}ei$
(M) $\dot{a}$ (N) $c\dot{v}b$

37| $\uparrow Kvb \text{ } M^{\vee}m\dot{t}K \text{ } A\dot{v}aK \text{ } Pvc \text{ } c\dot{t}q\dot{M} \text{ } K\dot{t}i \text{ } \mu\dot{m}Gb\dot{v}R\text{ } ^{-}Z \text{ } c\dot{v}iYZ \text{ } Ki\dot{v} \text{ } nq?$

- (K) $CH_4 \checkmark$ (L) O_2
(M) $CH_2 = CH_2$ (N) C_4H_{10}

38| $n\dot{v}mc\dot{v}Z\dot{v}j \text{ } e^{\vee}en\dot{v}\dot{t}i \text{ } Rb^{\vee} \text{ } \uparrow Kvb \text{ } M^{\vee}m \text{ } A\dot{v}aK \text{ } P\dot{v}\dot{t}c \text{ } \mu\dot{m}j \text{ } \dot{U}\dot{v}\dot{t}i \text{ } f\dot{t}i \text{ } i\dot{v}L\dot{v} \text{ } nq?$

- (K) $H_4 \checkmark$ (L) CH_4 (M) O_2 (N) C_4H_{10}

39| $\mu b\dot{t}av^3 \text{ } \uparrow Kvb \text{ } M^{\vee}m\dot{t}i \text{ } \uparrow btm\dot{I}Y\dot{i} \text{ } n\dot{v}i \text{ } me\dot{t}P\dot{t}q \text{ } te\dot{k} \text{ } n\dot{t}e?$

- (K) $\mu g\dot{t}_b \text{ } (CH_4) \checkmark$ (L) $B\dot{t}_b \text{ } (C_2H_6)$
(M) $\mu eD\dot{t}Ub \text{ } (C_4H_{10})$ (N) $K\dot{v}eb \text{ } W\dot{B}\text{ } ^{-}A \text{ } ^{-}vB\dot{b} \text{ } (CO_2)$

40| $\mu b\dot{t}Pi \text{ } \uparrow Kvb \text{ } M^{\vee}m\dot{t}i \text{ } e^{\vee}c\dot{b}i \text{ } n\dot{v}i \text{ } me\dot{t}P\dot{t}q \text{ } Kg?$

- (K) NH_3 (L) CH_4 (M) $CO_2 \checkmark$ (N) N_2

41| $\dot{t}g\dot{v}g \text{ } hLb \text{ } Rj\dot{t}Z \text{ } ^{-}v\dot{t}K \text{ } ZLb \text{ } c^{\vee}\dot{v}\dot{t}_i \text{ } Kq\dot{U} \text{ } Ae^{\vee}\dot{v} \text{ } \mu e^{\vee}\dot{v}gb?$

- (K) 1 (L) 2 (M) 3 $\checkmark$ (N) 4

42| $\dot{t}g\dot{v}g \text{ } n\dot{t}j\dot{v}\dot{N}$

- (K) $n\dot{v}B\dot{t}W\dot{K}eb\checkmark$ (L) $A\dot{v}Re \text{ } G\dot{v}mW$
(M) $A^{\vee}j \text{ } K\dot{v}Bj \text{ } n^{\vee}j\dot{v}BW$ (N) $A^{\vee}\dot{t}i \text{ } v\dot{t}g\dot{U}K \text{ } t\dot{h}\dot{S}M$

43| $\dot{t}g\dot{v}\dot{t}gi \text{ } Rj\dot{t}bi \text{ } mgq \text{ } \uparrow Kvb \text{ } \mu e\dot{I}\mu q\dot{U} \text{ } N\dot{t}U?$

- (K) $\dot{t}g\dot{v}g + O_2 \rightarrow CO_2 + H_2O + Z\dot{v}c$
(L) $\dot{t}g\dot{v}g + O_2 \rightarrow CO_2 + H_2O - Z\dot{v}c + A\dot{v}\dot{t}j\dot{v}$
(M) $\dot{t}g\dot{v}g + O_2 \rightarrow CO + H_2O + Z\dot{v}c + A\dot{v}\dot{t}j\dot{v}$
(N) $\dot{t}g\dot{v}g + O_2 \rightarrow CO_2 + H_2O + Z\dot{v}c + A\dot{v}\dot{t}j\dot{v}\checkmark$

44| $ch\dot{v}\dot{B} \text{ } e\dot{v}Z\dot{v}\dot{t}mi \text{ } Dc\dot{v}\dot{v}Z\dot{t}Z \text{ } \dot{t}g\dot{v}\dot{t}gi \text{ } ^{\vee}n\dot{t}bi \text{ } d\dot{t}j \text{ } Dr\dot{c}b \text{ } nq \text{ } Kx \text{ } Kx?$

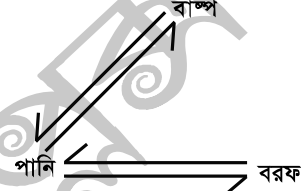
(K) $K\dot{v}eY, A\dot{v} \text{ } ^{\vee}Rb \text{ } I \text{ } c\dot{v}b$

(L) $K\dot{v}eY \text{ } g\dot{t}bv \text{ } ^{-}vBW \text{ } I \text{ } c\dot{v}b$

(M) $K\dot{v}eb \text{ } W\dot{B} \text{ } A \text{ } ^{-}vBW \text{ } I \text{ } Rj\dot{x}q \text{ } e\dot{v}\dot{U}\checkmark$

(N) $K\dot{v}eY \text{ } g\dot{t}bv \text{ } ^{-}vBW \text{ } I \text{ } Rj\dot{x}q \text{ } e\dot{v}\dot{U}$

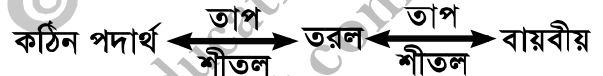
45| $\mu b\dot{t}Pi \text{ } \uparrow Kvb \text{ } i\dot{c}\dot{v}\dot{S}i \text{ } c\mu q\dot{q} \text{ } c\dot{v}bi \text{ } AYi \text{ } M\dot{v}Zk\dot{v}^3 \text{ } n\dot{v}m \text{ } c\dot{v}q?$



(K) $e\dot{I}d \rightarrow c\dot{v}b$ (L) $c\dot{v}b \rightarrow e\dot{v}\dot{U}$

(M) $e\dot{v}\dot{U} \rightarrow c\dot{v}b \checkmark$ (N) $\uparrow Kvb\dot{U}B \text{ } b\dot{q}$

46| $K\dot{v}b \text{ } c^{\vee}_ \text{ } Zi\dot{j} \text{ } e\dot{v}q\dot{e}x$



$\mu b\dot{t}Pi \text{ } \uparrow Kvb \text{ } c^{\vee}_ \text{ } \mu U \text{ } Dc\dot{t}i\dot{i} \text{ } c\mu q\dot{U}i \text{ } e^{\vee}Z\mu g?$

(K) $m\dot{v}j \text{ } d\dot{v}i$ (L) $A\dot{v} \text{ } ^{\vee}Rb$

(M) $A\dot{v}\dot{q}\dot{W}b\checkmark$ (N) $Z\dot{t}Z$

47| $\uparrow K\dot{v}\dot{b}v \text{ } \uparrow K\dot{v}\dot{b}v \text{ } K\dot{v}b \text{ } c^{\vee}_ \text{ } D\dot{E}\dot{B} \text{ } Ki\dot{t}j \text{ } m\dot{v}m\dot{v}i \text{ } e\dot{v}\dot{U}\dot{U} \text{ } i\dot{c}\dot{v}\dot{S}\dot{v}iZ \text{ } nq \text{ } G \text{ } c\mu q\dot{v}K\dot{N}$

(K) $Mj\dot{b}e\dot{v}j \text{ } nq$ (L) $e\dot{v}\dot{U}\dot{x} \text{ } feb \text{ } e\dot{v}j \text{ } nq$

(M) $Ea\dot{Y}c\dot{v}Z\dot{b} \text{ } e\dot{v}j \text{ } nq\checkmark$ (N) $i\dot{v}m\dot{v}q\dot{I}bK \text{ } c\dot{v}ieZ\dot{b} \text{ } e\dot{v}j \text{ } nq$

48| $\uparrow KvbU \text{ } Ea\dot{Y}c\dot{v}ZZ \text{ } c^{\vee}_?$

(K) $CaCl_2$ (L) $K\dot{v}b \text{ } CO_2\checkmark$

(M) $NaCl$ (N) $FeCl_3$

49| $\mu b\dot{t}Pi \text{ } \uparrow Kvb \text{ } K\dot{v}b \text{ } c^{\vee}_ \text{ } \mu U\dot{t}K \text{ } D\dot{E}\dot{B} \text{ } Ki\dot{t}j \text{ } m\dot{v}m\dot{v}i \text{ } e\dot{v}\dot{U}\dot{U} \text{ } i\dot{c}\dot{v}\dot{S}\dot{v}iZ \text{ } nq?$

(K) $\mu\dot{m}j \text{ } K\dot{b} \text{ } W\dot{B}A \text{ } ^{-}vBW$ (L) $j\dot{e}Y$

(M) $\dot{t}m\dot{v}Wq\dot{v}g$ (N) $A\dot{v}\dot{g}\dot{v}bq\dot{v}g \text{ } \uparrow K\dot{v}i\dot{v}BW\checkmark$

50| $c^{\vee}\dot{v}\dot{t}_i \text{ } \mu bR^{\vee} \text{ } ^{\vee}e\dot{I}k\dot{o}^{\vee} \text{ } I \text{ } ag \text{ } i\dot{t}q\dot{t}Q\dot{N}$

(i) $K\dot{v}b \text{ } Ae^{\vee}\dot{v}q$

(ii) $Zi\dot{j} \text{ } Ae^{\vee}\dot{v}q$

(iii) $M^{\vee}m\dot{x}q \text{ } Ae^{\vee}\dot{v}q$

$\mu b\dot{t}Pi \text{ } \uparrow KvbU \text{ } m\dot{v}VK?$

(K) $i \text{ } I \text{ } ii$

(M) $ii \text{ } I \text{ } iii$

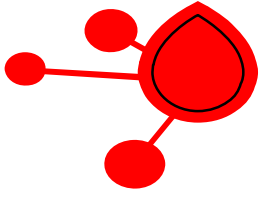
(N) $i, ii \text{ } I \text{ } iii\checkmark$

51| $c^{\vee}\dot{v}\dot{t}_i \text{ } ^{\vee}e\dot{I}k\dot{o}^{\vee}\dot{N}$

(i) $h\dot{v}i \text{ } f\dot{i} \text{ } A\dot{v}\dot{t}Q$

(ii) $h\dot{v}i \text{ } RoZ\dot{v} \text{ } A\dot{v}\dot{t}Q$

(iii) $h\dot{v} \text{ } ^{-}v\dot{b} \text{ } ^{-}Lj \text{ } K\dot{t}i \text{ } b\dot{v}$



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১৮পি ১৮বিউ মিৱক?

- (K) i (L) ii
(M) i l ii✓ (N) i, ii l iii

52| Zvc, Av+jvK cfZ c`v_ bq, KviYÑ

- (i) G, +jv`vb`Lj K+i bv
(ii) G, +jvi fi bvB
(iii) wZkxj ev MZkxj Ae-vi crieZ+b evav c`vb K+i
bv|

১৮পি ১৮বিউ মিৱক?

- (K) i l ii (L) i l iii
(M) ii l iii (N) i, ii l iii✓

53| nvB+WvRb, A+Rb, bvB+UvRb cfZiÑ

- (i) fi Av+Q
(ii) RvqMv`Lj K+i
(iii) RoZv Av+Q

১৮পি ১৮বিউ মিৱক?

- (K) i l ii (L) i l iii
(M) ii l iii (N) i, ii l iii✓

54| BU, KvW, cfZ c`v\_i`eikó" n+jv, w`óÑ

- (i) AvK+Z
(ii) AvqZb
(iii) fi

১৮পি ১৮বিউ মিৱক?

- (K) i l ii (L) i l iii
(M) ii l iii (N) i, ii l iii✓

55| cwlb, ga, +Zj cfZ c`v\_i`eikó" n+jv, w`óÑ

- (i) AvK+Z
(ii) AvqZb
(iii) fi

১৮পি ১৮বিউ মিৱক?

- (K) i l ii (L) i l iii
(M) ii l iii✓ (N) i, ii l iii

56| SO₂, CO₂, H₂S cfZi`eikó" n+jv, w`óÑ

- (i) AvK+Z
(ii) AvqZb
(iii) fi

১৮পি ১৮বিউ মিৱক?

- (K) i l ii (L) iii✓
(M) ii l iii (N) i, ii l iii

57| cvi+`i`eikó" n+jv, w`óÑ

(i) AvK+Z

(ii) AvqZb

(iii) fi

১৮পি ১৮বিউ মিৱক?

- (K) i l ii (L) i l iii
(M) ii l iii✓ (N) i, ii l iii

58| Zvcgv+ I Pv+ci crieZY N+U+q c`v_i GK Ae-v +_+K
Aci Ae-vq i/cvši maeÑ

- (i) K+Vb $\xrightarrow{Zic\ e\ x}$ Zi j
(ii) Zi j $\xrightarrow{Zic\ e\ x}$ M+vm
(iii) Zi j $\xrightarrow{Zic\ nm}$ K+Vb

১৮পি ১৮বিউ মিৱক?

- (K) i l ii (L) i l iii
(M) ii l iii (N) i, ii l iii✓

59| Zi j c`v\_i`w`óÑ

- (i) AvqZb Av+Q
(ii) AvqZb bvB
(iii) AvK+vi bvB

১৮পি ১৮বিউ মিৱক?

- (K) i l iii✓ (L) ii l iii
(M) i l ii (N) i, ii l iii

60| ১৮পি ১৮বি D+³U মিৱকÑ

- (i) AvštKYv AvKIY k+³ MZk+³ +_+K A+bK Kg n+j c`v_ M+vmxq n+e|
(ii) AvštKYv AvKIY k+³ MZk+³ +_+K A+bK teik n+j
c`v_+U K+Vb n+e|
(iii) AvštKYv AvKIY k+³ MZk+³ i cvq mgvb n+j c`v_+U
Zi j n+e|

১৮পি ১৮বিউ মিৱক?

- (K) i (L) ii l iii
(M) i l iii (N) i, ii l iii✓

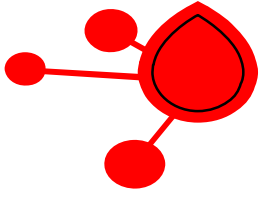
61| wbtmi+Yi +y+Î Q`hZ eo nqÑ

- (i) -ZtùZZv e+× cvq
(ii) Pvcg³ n+Z_v+K
(iii) e+vcb i/cvši iZ nq

১৮পি ১৮বিউ মিৱক?

- (K) i l ii (L) i l iii
(M) ii l iii (N) i, ii l iii✓

62| fi l Nb+Zi Dci wbfik+jÑ



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(i) e'vcb

(ii) A'f'eY

(iii) 'btmiY

৷b†Pi †Kv‡U m‡VK?

(K) i l iii ✓

(L) ii l iii

(M) i l ii

(N) i, ii l iii

63| †Kv‡bv e' e'vcb l ৷b†mi†Yi m†_e' fi l Nb†Zi g†a' m‡úKÑ

(i) e' fi e'v†j e'vcb nvm cvq

(ii) e' fi Kg†j ৷b†miY e'× cvq

(iii) e' NbZ Kg†j e'vcb l ৷b†miY DfqB e'× cvq

৷b†Pi †Kv‡U m‡VK?

(K) i l iii

(L) ii l iii

(M) i l ii

(N) i, ii l iii✓

64| c'v†_i Mjb l ùUb N†U _v†K?

(i) ৷b'ó Zv†c

(ii) ৷b'ó Pv†c

(iii) ৷b'ó Zvcg†vq

৷b†Pi †Kv‡U m‡VK?

(K) i l iii

(L) ii l iii ✓

(M) i l ii

(N) i, ii l iii

65| †gvgew†Zi Rj†bÑ

(i) i'vmq†bK c†ieZb N†U

(ii) †f†Z c†ieZb N†U

(iii) `nb †e†µq† N†U

৷b†Pi †Kv‡U m‡VK?

(K) ii

(L) i l ii

(M) i l iii

(N) i, ii l iii✓

66| ùUbv†K†i †y†† ৷b†Pi †Kv‡ Z'U m‡VKÑ

(i) ùUbv†K e'v†i i Pv†ci Dci ৷b†f†Kxj

(ii) †Lv†v c††† ùUbv†K gvc† nq

(iii) GB Zvcg††vq †h †Kv‡bv c'v_ Zi†j c†iYZ nq

৷b†Pi †Kv‡U m‡VK?

(K) i l ii ✓

(L) ii

(M) i l iii

(N) i, ii l iii

67| Ea†cvZb njÑ

(i) K†Vb c'v_ †_†K Zi†j i/cv†i

(ii) K†Vb c'v_ †_†K e'v†ú i/cv†i

(iii) Zi†j †_†K e'v†ú i/cv†i

৷b†Pi †Kv‡U m‡VK?

(K) i

(L) ii ✓

(M) iii

(N) i, ii l iii

৷b†Pi Ab†Q`U c†o 68-70 bs c†ki D†Ei `v†t

X $\xleftarrow{\text{তাপ প্রয়োগ}}$ Y $\xleftarrow{\text{তাপ প্রয়োগ}}$ Z
তাপমাত্রা হ্রাসকরণ $\xrightarrow{\text{তাপমাত্রা হ্রাসকরণ}}$

68| D†xc†Ki †y††Ñ

(i) X A†c†y† Z Gi m†K†Pb†Kj Zv †e†k

(ii) YGi AvK†Z ৷b'ó

(iii) Z Gi NbZ m†P†q Kg

৷b†Pi †Kv‡U m‡VK?

(K) i l ii

(L) i l iii

(M) ii l iii

(N) i, ii l iii✓

69| Z Gi †y††† †Kv‡U ৷b'óÑ

(K) AvK†i

(L) AvK†Z

(M) AvqZb

(N) fi✓

70| D†xc†Ki †y††Ñ

(i) X Gi c†m†iYk†j Zv m†P†q †e†k

(ii) YGi AvK†Z ৷b'ó

(iii) Z Gi NbZ m†P†q †e†k

৷b†Pi †Kv‡U m‡VK?

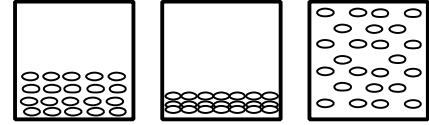
(K) i l ii

(L) i l iii

(M) ii l iii

(N) i, ii l iii✓

৷b†Pi D†xc†U j†y† Ki Ges 71-73 bs c†ki D†Ei `v†t



c'v†_i ৷Zb Ae'v†i †f†E†Z K†YK†vmg†ni Ae'v†b|

71| X c††††i c'v_ ৷UiÑ

(i) ৷b'ó AvK†i l AvqZb Av†Q

(ii) AYi M†Zk†j Zv Y A†c†y† †e†k

(iii) Av††Av†Y†e†K AvK†IY ej Y A†c†y† Kg

৷b†Pi †Kv‡U m‡VK?

(K) i l ii

(L) i l iii

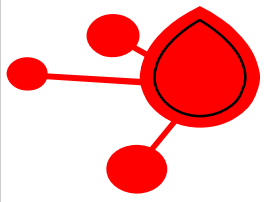
(M) ii l iii✓

(N) i, ii l iii

72| Z c††††i c'v_ ৷UiÑ

(i) Pv†c A†a†K gv††vq m†K†Pb†Kj

(ii) †h c††††i i†Lv nq Zvi c††i†v†Bj `Lj K††i



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(iii) H_2O H_2O H_2O

- (K) i i ii ✓ (L) i i iii
(M) ii i iii (N) i, ii i iii

73| H_2O H_2O H_2O

- (i) H_2O H_2O H_2O
(ii) H_2O H_2O H_2O
(iii) H_2O H_2O H_2O

H_2O H_2O H_2O

- (K) i i ii ✓ (L) i i iii
(M) ii i iii (N) i, ii i iii

H_2O H_2O H_2O

H_2O H_2O H_2O

74| H_2O H_2O H_2O

- (K) cvi ✓ (L) cvi
(M) tgv (N) nBtWtRb✓

75| H_2O H_2O H_2O

- (K) H_2O H_2O H_2O
(L) H_2O H_2O H_2O
(M) H_2O H_2O H_2O
(N) H_2O H_2O H_2O

76| H_2O H_2O H_2O

- (K) H_2O H_2O H_2O
(L) H_2O H_2O H_2O
(M) H_2O H_2O H_2O
(N) H_2O H_2O H_2O

H_2O H_2O H_2O

77| H_2O H_2O H_2O

- (i) H_2O H_2O H_2O
(ii) H_2O H_2O H_2O
(iii) H_2O H_2O H_2O

H_2O H_2O H_2O

- (K) i i ii (L) i i iii

(M) ii i iii

(N) i, ii i iii✓

78| H_2O H_2O H_2O

- (i) H_2O H_2O H_2O
(ii) H_2O H_2O H_2O
(iii) H_2O H_2O H_2O

H_2O H_2O H_2O

- (K) i i ii (L) i i iii
(M) ii i iii✓ (N) i, ii i iii

H_2O H_2O H_2O

ছন্দক



ছন্দকে উত্তপ্তকরণ



চিনির শরবত



মোমবাতির জ্বলন



লৌহের উপর মরিচা

79| H_2O H_2O H_2O

- (K) A (L) B
(M) C (N) C I D✓

80| H_2O H_2O H_2O

- (K) A (L) B
(M) C ✓ (N) D

81| H_2O H_2O H_2O

- (K) H_2O H_2O H_2O
(L) H_2O H_2O H_2O
(M) H_2O H_2O H_2O (N) H_2O H_2O H_2O

H_2O H_2O H_2O



মোমের জ্বলন

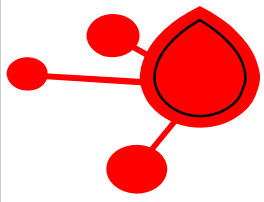
H_2O H_2O H_2O

82| H_2O H_2O H_2O

- (K) H_2O H_2O H_2O (L) H_2O H_2O H_2O
(M) H_2O H_2O H_2O (N) H_2O H_2O H_2O

83| H_2O H_2O H_2O

- (i) H_2O H_2O H_2O
(ii) H_2O H_2O H_2O



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(iii) CO_2 I H_2O Drch nq

৷bPi tKvU mVK?

- (K) i I ii (L) i I iii
(M) ii I iii (N) i, ii I iii✓

84| X thSMUi msKZ tKvU?

- (K) CO_2 (L) CO (M) CH_2 (N) H_2

85| DİxcKi ৷eμqUzN

- (i) Zvc I Drch nq
(ii) nb NtU
(iii) tfsZ I ivmqwbK cıieZY NtU

৷bPi tKvU mVK?

- (K) i I ii (L) i I iii
(M) ii I iii (N) i, ii I iii✓

ZZq Aa'vqt c`i MVb

1| ৷bPi tKv AvBmvUvcU ৷PiKrmv I Kİ Dfq tÿtİ e'eüZ nq?

- (K) ^{131}I (L) ^{125}I
(M) ^{32}P ✓ (N) ^{153}Sm

2| Z GKU tğj hvi tcvUb msL'v 111 Ges ৷bDUB msL'v 141| tKvU ৷vıv cigvYıU K cKıv Kiv hvq?

- (K) ^{111}Z (L) ^{141}Z
(M) ^{252}Z ✓ (N) ^{141}Z
(K) ^{111}Z (L) ^{141}Z
(M) ^{252}Z ✓ (N) ^{141}Z

3| 'X' tğjıUi AıciYK cvıgvıeK fi KZ?

AvBmvUvc	chıßZvı kZKıv
^{146}X	cııgvY
^{154}X	75

- (K) 148 (L) 150
(M) 152✓ (N) 153

4| $^{56}_{26}\text{Y}$ DİxcK tğjıUı

- (i) GKıaK thvRbx ৷e'gıv
(ii) tcvUb I ৷bDUB msL'v ৷fb
(iii) BtjKUB ৷eb'vm ৷fvıeK ৷bqıgı

৷bPi tKvU mVK?

- (K) i I ii (L) ii I iii
(M) i I iii (N) i, ii I iii✓

5| tKv tğjıi cigvYıZ a msL'K tcvUb, b msL'K Btjıb I c msL'K ৷bDUB ৷e'gıvı H tğjıi cigvYı fi msL'v KZ?

- (K) a + b (L) a + c✓
(M) b + c (N) a + b + c

6| tKvU ৷vıx tğjıK KıYKıv bq?

- (K) ৷bDUB (L) tcvUb
(M) cııRUB✓ (N) BtjKUB

7| BtjKUıbi cZıK tKvU?

- (K) e^- ✓ (L) e^+ (M) E^- (N) E_n^-

8| BtjKUıbi cKZ fi ৷bPi tKvU?

- (K) 9.11×10^{-28} Mıg✓ (L) 1.673×10^{-24} Mıg
(M) 6.023×10^{23} Mıg (N) 1.675×10^{-24} Mıg

9| GKıU BtjKUıbi Avıv KZ?

- (K) -1.60×10^{-28} Kıı (L) -1.6×10^{-19} Kıı✓
(M) -6.10×10^{-19} Kıı (N) -1.60×10^{-19} Kıı

10| GKıU tcvUıbi fi GKıU BtjKUıbi fıı KZ, Y? Aıve, GKıU tcvUb GKıU BtjKUıbi tııq KZ, Y fııx?

- (K) 1.67×10^{-24} , Y (L) 4810 , Y
(M) 1840 , Y✓ (N) 9.11×10^{-28} , Y

11| GKıU ৷bDUıbi fi GKıU BtjKUıbi fıı KZ, Y?

Aıve, GKıU ৷bDUB GKıU BtjKUıbi tııq KZ, Y fııx?

- (K) 1.67×10^{-24} , Y (L) 4810 , Y
(M) 1840 , Y✓ (N) 9.11×10^{-28} , Y

12| cigvYı FıYıZıK KıYKıv tKvU?

- (K) tcvUb (L) ৷bDUB
(M) BtjKUB✓ (N) ৷bDııKııvı

13| GKıU tcvUıbi fi KZ?

- (K) 1.67×10^{-24} g✓ (L) 1.66×10^{24} g
(M) 9.11×10^{-28} g (N) 9.11×10^{24} g

14| ৷bDUıbi Avııj fi njı

- (K) 1.675×10^{-24} Mıg✓ (L) 1.673×10^{-24} Mıg
(M) 9.67×10^{24} Mıg (N) 9.67×10^{24} Mıg

15| ৷bDııKb msL'v KııK eııj?

- (K) cigvYıZ AeııZ BtjKUıbi I tcvUb msL'vıK
(L) cigvYıZ AeııZ ৷bDUB I BtjKUB msL'vıK
(M) ৷bDııKııvı AeııZ tııvU tcvUb msL'vıK
(N) ৷bDııKııvı AeııZ tcvUb I ৷bDUıbi gııv msL'vıK✓

16| tKv tğjıi cigvYıZ a ৷U tcvUb, b ৷U BtjKUB I c ৷U ৷bDUB ৷e'gıvı; H tğjıi cııgvıeK msL'vKZ?

- (K) a + b (L) a✓



(K) 18 $\checkmark$ (L) 19 (M) 20 (N) 39
28| $^{23}_{11}\text{Na}$ cigvYwU $\dagger$ Z wBDU $\dagger$ bi msL $\checkmark$ v KZ?
(K) 11 wU (L) 12 wU $\checkmark$ (M) 23 wU (N) 34 wU
29| bx $\dagger$ Pi $\dagger$ Kvb KiYKvq 20wU wBDUb, 19wU $\dagger$ cvUb I 18wU
B $\dagger$ jKUb i $\dagger$ q $\dagger$ Q?
(K) $^{39}_{19}\text{K}^+$ $\checkmark$ (L) $^{30}_{19}\text{K}$
(M) $^{40}_{18}\text{Ar}$ (N) $^{38}_{20}\text{Ca}^{2+}$
30| Na^+ Avq $\dagger$ b wBDUb msL $\checkmark$ v KZ?
(K) 11 (L) 23 (M) 10 (N) 12 $\checkmark$
31| $\text{Aw} \cdot \dagger\text{R}\dagger\text{bi}$ Ab $\checkmark$ Zg AvB $\dagger$ mv $\dagger$ cvU ^{17}O -G wBDUb msL $\checkmark$ v KZ?
(K) 8 (L) 9 $\checkmark$ (M) 17 (N) 7
32| bx $\dagger$ Pi $\dagger$ KvbwU $\dagger$ ZRw $\checkmark$ q AvB $\dagger$ mv $\dagger$ Uvc bq?
(K) ^{131}I (L) ^{32}P (M) ^2_1H $\checkmark$ (N) ^{60}Co
33| nvB $\dagger$ W $\dagger$ R $\dagger$ bi $\dagger$ Kvb AvB $\dagger$ mv $\dagger$ UvcwU $\dagger$ ZRw $\checkmark$ q?
(K) $\dagger$ cwUvbqvg (^1_1H) (L) wWD $\dagger$ Uw $\dagger$ iqvg (^2_1H)
(M) wUwUqvg (^3_1H) $\checkmark$ (N) Dc $\dagger$ i i me, $\dagger$ jv
34| wWD $\dagger$ Uw $\dagger$ iqv $\dagger$ gi fi msL $\checkmark$ v KZ?
(K) 1 (L) 2 $\checkmark$ (M) 3 (N) 4
35| wUwUqv $\dagger$ gi fi msL $\checkmark$ v KZ?
(K) 1 (L) 3 $\checkmark$ (M) 4 (N) 2
36| nvB $\dagger$ W $\dagger$ R $\dagger$ bi AvB $\dagger$ mv $\dagger$ Uvc wZb $\dagger$ Ui bvg wK?
(K) $\dagger$ cvUb, B $\dagger$ jKUb, wBDUb
(L) nvB $\dagger$ W $\dagger$ Rb, wWD $\dagger$ Uw $\dagger$ iqvg, $\dagger$ cwUqvg
(M) nvB $\dagger$ W $\dagger$ Rb, wWD $\dagger$ Uw $\dagger$ iqvg, wUwUqvg $\checkmark$
(N) wWD $\dagger$ Uw $\dagger$ iqvg, wUwUqvg, nvB $\dagger$ W $\dagger$ Rb Avqb
37| $\dagger$ KvbwU $\dagger$ Z $\checkmark$ BwU wBDUb Av $\dagger$ Q?
(K) nvB $\dagger$ W $\dagger$ Rb (L) wWD $\dagger$ Uw $\dagger$ iqvg
(M) wUwUqvg $\checkmark$ (N) wjw $\checkmark$ _qvg
38| $\dagger$ Kvb tg $\dagger$ j wBDUb $\dagger$ bB?
(K) wjw $\checkmark$ _qvg (L) Aw $\checkmark$ $\cdot$ $\dagger$ Rb
(M) wnw $\checkmark$ j qvg (N) nvB $\dagger$ W $\dagger$ Rb $\checkmark$
39| w bq $\dagger$ bi wBDwKqv $\dagger$ mi KqwU $\dagger$ cvUb w $\checkmark$ $\dagger$ K?
(K) 2 (L) 10 $\checkmark$ (M) 18 (N) 36
40| $^{17}_8\text{O}^{2-}$ (A $\cdot$ vBW Avq $\dagger$ b) B $\dagger$ jKU $\dagger$ bi msL $\checkmark$ v n $\dagger$ $\checkmark$ Q $\checkmark$
(K) 7 (L) 10 $\checkmark$ (M) 8 (N) 9



- 51| $^{14}_6\text{M}$ cZKx tğšjUi mrvn'h" dwmj gwg BZ"v`i eqm
wvaviY Kiv nq| cZKxUu wvBpi tKvb tğšji?
(K) A" - tRb (L) bvBtUvRb
(M) Kveb✓ (N) wqb
- 52| ZnGi cvigYveK msL"v KZ?
(K) 32 (L) 30✓ (M) 23 (N) 21
- 53| A" - tRb Gi AvtciYK AvYveK fi KZ?
(K) 16 (L) 32✓ (M) 18 (N) 14
- 54| bvBtUK GvmW (HNO₃) AvtciYK AvYveK fi KZ?
(K) 68 (L) 63✓ (M) 71 (N) 85
- 55| 15 cvigYveK msL"v veikó" tğšji M AiveU KquU
BtjKub vKte?
(K) 6 (L) 8 (M) 5✓ (N) 7
- 56| wvBpi tKvb Avqb0tqi BtjKub veb"vm wvbtbi Abi|cN
(K) Mg²⁺, Ca²⁺ (L) Na⁺, Mg²⁺ ✓
(M) Cl⁻, Ca²⁺ (N) Mg²⁺, K⁺
- 57| 2, 8, 8 BtjKub veb"vm wvbtbi tKvb cigYi?
(K) Ar✓ (L) As (M) P (N) Ca
- 58| AvabK msAvbhvx tKvbUi mv" Zjbv Kti veÁvbxMY
AvYveK ev cvigYveK fi wvYq Ktib?
(K) C-12 ✓ (L) Cl-35 (M) C-13 (N) O-16
- 59| fi msL"vi wfbZvi KviY tKvbUu miv nq?
(K) AvBtmvev (L) AvBtmvUvc✓
(M) AvBtmvUvb (N) AvBtmvgv
- 60| nvBtWvtRbtbi tguU KZtU AvBtmvUvc AvQ?
(K) 4u (L) 5u (M) 6u (N) 7u✓
- 61| tKwib Gi AvtciYK cvigYveK fi KZ?
(K) 35.5✓ (L) 17 (M) 12 (N) 8
- 62| "u AvBtmvUvtci-----mgvb bq| (kb"vb ciY Ki)
(K) cvigYveK msL"v (L) fi msL"v✓
(M) BtjKub msL"v (N) ivmvqwbK ag
- 63| AvBtmvUvtci tÿtÎ tKvbUu mivK?
(K) fi msL"v GKB_vtK
(L) wvDUB msL"v GKB_vtK
(M) tcvUb msL"v mgvb_vtK✓
(N) tcvUb I wvDUB msL"v mgvb_vtK
- 64| $^{35}_{17}\text{Cl}^-$ G BtjKub msL"v KZ?
(K) 35 (L) 17 (M) 18✓ (N) 16
- 65| A tğšjUi AvtciYK cvigYveK fi KZ?



(K) 30.5 (L) 32.6
(M) 37.5 (N) 35.5✓

66| ${}_{13}\text{Al Gi GK} \parallel \text{U cigvYi fi } 4.482 \times 10^{-22} \text{ gm ntj,}$
Gi Av†c‖ÿK cvigvYieK fi KZ?
(K) 13 (L) 27✓ (M) 16 (N) 30

67| $\text{wb} \ddot{\text{P}}\text{i} \ddot{\text{t}} \text{Kvb} \text{tg} \ddot{\text{S}} \text{j} \parallel \text{U cigvY Kveb-12 AvB} \ddot{\text{t}} \text{mv} \ddot{\text{t}} \text{Uv} \ddot{\text{t}} \text{ci f} \ddot{\text{t}} \text{i} \parallel \frac{1}{12}$
As†ki Zjbvq 35.5 ,Y fwi?
(K) AvMb(Ar) (L) Av†m‖bK (As)
(M) Av†q‖Wb (I) (N) †K‖ib (Cl) ✓

68| Kveb-12 AvB‡mv‡Uv‡ci $\frac{1}{12}$ As†ki fi KZ?
(K) $4.482 \times 10^{-23} \text{ gm}$ (L) $1.66 \times 10^{-24} \text{ gm}$ ✓
(M) $9.11 \times 10^{-28} \text{ gm}$ (N) $1.6 \times 10^{-19} \text{ gm}$

69| $\text{H}_2\text{SO}_4 \text{Gi Av} \ddot{\text{t}} \text{c} \parallel \ddot{\text{Y}} \text{K AvYieK fi KZ?}$
(K) 96 (L) 98✓ (M) 90 (N) 97

70| $\text{M} \ddot{\text{t}} \text{Kv} \ddot{\text{t}} \text{Ri Av} \ddot{\text{t}} \text{c} \parallel \ddot{\text{Y}} \text{K AvYieK fi KZ?}$
(K) 280 (L) 90 (M) 140 (N) 180✓

71| $\text{A} \ddot{\text{v}} \ddot{\text{t}} \text{g} \parallel \text{bqv M} \ddot{\text{v}} \ddot{\text{t}} \text{mi Av} \ddot{\text{t}} \text{c} \parallel \ddot{\text{Y}} \text{K AvYieK fi KZ?}$
(K) 37 (L) 27 (M) 14 (N) 17✓

72| $\text{cvi} \ddot{\text{t}} \text{K} \parallel \text{iK G} \parallel \text{mW (HClO}_4\text{) Gi Av} \ddot{\text{t}} \text{c} \parallel \ddot{\text{Y}} \text{K AvYieK fi KZ?}$
(K) 100.7 (L) 100.5✓ (M) 160.7 (N) 200.5

73| $\frac{12}{6} \text{X cZxKx tg} \ddot{\text{S}} \text{j} \parallel \text{U} \text{wb} \ddot{\text{P}}\text{i} \ddot{\text{t}} \text{Kvb} \parallel \text{Ui AvB} \ddot{\text{t}} \text{mv} \ddot{\text{t}} \text{Uvc?}$
(K) $\frac{13}{6} \text{X}$ ✓ (L) $\frac{14}{7} \text{X}$
(M) $\frac{12}{5} \text{X}$ (N) $\frac{12}{6} \text{X}$

74| $\text{bx} \ddot{\text{t}} \text{Pi} \ddot{\text{t}} \text{Kvb} \parallel \text{U AvB} \ddot{\text{t}} \text{mv} \ddot{\text{t}} \text{Uv} \ddot{\text{t}} \text{ci D} \ddot{\text{v}} \text{niY?}$
(K) $\frac{125}{53} \text{I}, \frac{131}{53} \text{I}$ ✓ (L) $\frac{64}{29} \text{Cu}, \frac{64}{30} \text{Zn}$
(M) $\frac{30}{14} \text{Si}, \frac{31}{25} \text{P}$ (N) $\frac{1}{2} \text{H}, \frac{4}{2} \text{He}$

75| $\text{bx} \ddot{\text{t}} \text{Pi} \ddot{\text{t}} \text{Kvb} \parallel \text{U AvB} \ddot{\text{t}} \text{mv} \ddot{\text{t}} \text{Uv} \ddot{\text{t}} \text{ci D} \ddot{\text{v}} \text{niY bq?}$
(K) $\frac{125}{53} \text{I}, \frac{131}{53} \text{I}$ (L) $\frac{12}{6} \text{C}, \frac{13}{6} \text{C}, \frac{14}{6} \text{C}$
(M) $\frac{1}{2} \text{H}, \frac{3}{1} \text{H}$ (N) $\frac{64}{29} \text{Cu}, \frac{64}{30} \text{Zn}$ ✓

76| $\text{Mjb,} \text{t} \ddot{\text{v}} \ddot{\text{t}} \text{Mi (} _ \text{vBi} \ddot{\text{t}} \text{q} \ddot{\text{t}} \text{Wi ei} \times \text{t} \ddot{\text{v}} \text{a) } \parallel \text{PiKrmvq} \ddot{\text{t}} \text{Kvb} \parallel \text{U e} \ddot{\text{e}} \text{üZ}$
nq?

(K) ^{313}I ✓ (L) ^{32}P
(M) ^{60}Co (N) ^{99}Tc

77 | $\text{Lv} \sim \text{msi } \ddot{\gamma} + \text{Y} \uparrow \text{Kvb AvB} \uparrow \text{mv} \uparrow \text{Uvc e}^{\circ} \text{eüZ nq?}$
(K) ^{313}I (L) ^{32}P
(M) ^{60}Co ✓ (N) ^{99}Te

78 | $\text{nv} \uparrow \text{oi} \uparrow \text{ivM} \uparrow \text{by} \uparrow \text{q} \uparrow \text{KvbiU e}^{\circ} \text{eüZ nq?}$
(K) ^{313}I (L) ^{32}P
(M) ^{60}Co (N) ^{99}Tc ✓

79 | $\text{nv} \uparrow \text{U} \uparrow \text{tcBm} \uparrow \text{gKvi emv} \uparrow \text{Z} \uparrow \text{Kvb AvB} \uparrow \text{mv} \uparrow \text{Uvc e}^{\circ} \text{eüZ nq?}$
(K) ^{313}I (L) ^{32}P
(M) ^{60}Co (N) ^{238}Pu ✓

80 | $\text{D}_{\text{TM}} \sim \text{IKfve teeto D} \uparrow \text{V Zv Rvb} \uparrow \text{Z} \uparrow \text{Kvb AvB} \uparrow \text{mv} \uparrow \text{Uvc e}^{\circ} \text{eüZ nq?}$
(K) ^{313}I (L) ^{32}P ✓
(M) ^{60}Co (N) ^{238}Pu

81 | $\text{K}^{\circ} \text{Yvi} \uparrow \text{Kvl a} \ddot{\text{s}} \text{m Kivi Rb}^{\circ} \uparrow \text{Kvb AvB} \uparrow \text{mv} \uparrow \text{Uvc e}^{\circ} \text{eüZ nq?}$
(K) ^{131}I (L) ^{32}P
(M) ^{60}Co ✓ (N) ^{238}Pu

82 | $\uparrow \text{ZR} \sim \text{q AvB} \uparrow \text{mv} \uparrow \text{Uvc } (^{60}\text{Co}) \uparrow \text{K} \uparrow \text{bmZ} \uparrow \text{Kvb iik}^{\dagger}$
 $\text{K}^{\circ} \text{Yvi} \uparrow \text{Kvl}, \text{e}^{\circ} \text{VK} \uparrow \text{Uiqv BZ} \sim \text{a} \ddot{\text{s}} \text{m K} \uparrow \text{i?}$
(K) $\text{Avjd} \nu (\alpha) \text{iik}^{\dagger}$ (L) $\text{weUv } (\beta) \text{iik}^{\dagger}$
(M) $\text{Mvgv } (\gamma) \text{iik}^{\dagger}$ ✓ (N) $\text{iÄb } (X) \text{iik}^{\dagger}$

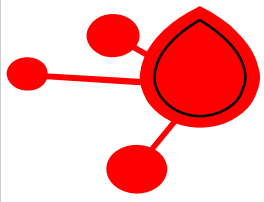
83 | $^{99m}\text{Tc} \rightarrow ^{99}\text{Tc} + \gamma \text{ c} \uparrow \mu \text{qW U} \uparrow \text{b} \uparrow \text{Pi} \uparrow \text{Kvb} \uparrow \text{Ui mv} \uparrow \text{m} \acute{\text{o}} \text{úK h}^3?$
(K) $\text{UDgv} \uparrow \text{bivgq}$ (L) $\text{nv} \uparrow \text{oi} \uparrow \text{PiKrmv}$ ✓
(M) $\text{vBi} \uparrow \text{qW M} \ddot{\text{s}} \text{i} \uparrow \text{PiKrmv}$ (N) $\text{i} \uparrow^3 \text{i} \uparrow \text{jD} \uparrow \text{Kwggv PiKrmv}$

84 | $_{92}^{238} \text{UGi} \uparrow \text{bDUb msL}^{\circ} \text{v KZ?}$
(K) 92 (L) 238 (M) 146 ✓ (N) 330

85 | $_{92}^{238} \text{X I} \quad _{92}^{235} \text{X ci}^{\circ} \uparrow \text{i i AvB} \uparrow \text{mv} \uparrow \text{Uvc n} \uparrow \text{j X tg} \dot{\text{s}} \text{j} \uparrow \text{Ui cKZ ms} \uparrow \text{KZ} \uparrow \text{b} \uparrow \text{Pi} \uparrow \text{Kvb} \uparrow \text{U?}$
(K) Cs (L) U ✓ (M) Pd (N) Pu

86 | $\text{MvBMvi KvD} \uparrow \text{Uvi e}^{\circ} \text{envi Kiv nq} \uparrow \text{b} \uparrow \text{ai} \uparrow \text{Kvb} \uparrow \text{y} \uparrow \hat{\text{i}}?$
(K) $\text{nv} \uparrow \text{U} \uparrow \text{tcBm} \uparrow \text{gKvi Kg} \uparrow \text{Z}$
(L) $\text{UDgv} \uparrow \text{i i PiKrmvi Kv} \uparrow \text{R}$
(M) $\text{nv} \uparrow \text{oi e}^{\circ} \text{vi PiKrmvq}$
(N) $\text{D}_{\text{TM}} \uparrow^{\circ} \text{P e}^{\circ} \text{env} \uparrow \text{i i tK} \dot{\text{s}} \text{kj Rvb} \uparrow \text{Z} \checkmark$

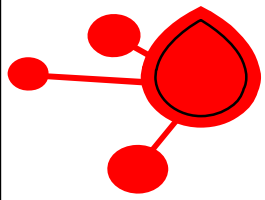
87 | $\text{i} \uparrow \text{jD} \uparrow \text{Kwggv} \uparrow \text{iv} \uparrow \text{Mi PiKrmvq} \text{ } ^{32}\text{P Gi} \uparrow \text{Kvb cKvi th} \dot{\text{S}} \text{M e}^{\circ} \text{eüZ nq?}$
(K) tKviBW (L) $\text{dm} \uparrow \text{dU}$ ✓



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- (M) $m_{\nu}j\ddot{d}U$ (N) $Kve\ddot{t}bU$
- 88| ^{89}Sr $\text{AvB}\ddot{t}m\ddot{v}\ddot{U}vc$ $\text{wb}\ddot{t}\ddot{a}i$ $\ddot{t}Kvb$ $KivR$ $e^{\ddot{e}}\ddot{u}Z$ $nq?$
 (K) $n\ddot{v}\ddot{t}oi$ $e^{\ddot{e}}_{\ddot{v}i}$ $\text{P}\ddot{t}Krmv\checkmark$
 (L) $i\ddot{t}^3i$ $\text{J}\ddot{D}\ddot{t}K\ddot{v}gq\ddot{v}$ $\ddot{t}iv\ddot{t}Mi$ $\text{P}\ddot{t}Krmv$
 (M) $n\ddot{v}\ddot{t}Ui$ $\ddot{t}cBm$ $\ddot{t}gKvi$ $emv\ddot{t}Z$
 (N) $\ddot{v}Bi\ddot{t}qW$ $M\ddot{t}Si$ $\text{P}\ddot{t}Krmv$
- 89| $n\ddot{v}\ddot{t}oi$ $e^{\ddot{e}}_{\ddot{v}i}$ $\text{P}\ddot{t}Krmvq$ $e^{\ddot{e}}\ddot{u}Z$ nq $\text{wb}\ddot{t}Pi$ $\ddot{t}Kvb$ $\text{AvB}\ddot{t}m\ddot{v}\ddot{U}vc?$
 (K) ^{153}Sm $\checkmark$ (L) ^{238}Pu
 (M) ^{131}Cs (N) ^{106}Ru
- 90| $K^{\ddot{v}}\ddot{Y}vi$ $\text{P}\ddot{t}Krmvq$ $e^{\ddot{e}}\ddot{u}Z$ nq $\text{wb}\ddot{t}Pi$ $\ddot{t}Kvb\ddot{v}U$
 (K) ^{131}I (L) ^{99}mTc
 (M) ^{153}Sm (N) $^{192}\text{Ir}\checkmark$
- 91| $^{131}_{53}\text{I}$ $\text{AvB}\ddot{t}m\ddot{v}\ddot{U}v\ddot{t}ci$ $\text{wbD}\ddot{t}Kqb$ $m\ddot{S}L^{\ddot{v}}$ $KZ?$
 (K) 53 (L) 131 $\checkmark$ (M) 78 (N) 184
- 92| $\ddot{t}ZR\ddot{v}\ddot{t}q$ $\text{AvB}\ddot{t}m\ddot{v}\ddot{U}vc$ $\ddot{t}_{\ddot{t}K}$ $\text{wb}\ddot{t}Pi$ $\ddot{t}Kvb$ $i\ddot{t}k\ddot{t}$ $\text{we}\ddot{t}Ki\ddot{t}Z$ nq $br?$
 (K) Avjdv $i\ddot{t}k\ddot{t}$ (L) $Mvgv$ $i\ddot{t}k\ddot{t}$
 (M) $i\ddot{A}b$ $i\ddot{t}k\ddot{t}\checkmark$ (N) weUv $i\ddot{t}k\ddot{t}$
- 93| $\ddot{d}imj$, $g\ddot{v}g$ $Ksev$ $c\ddot{v}_{exi}$ eqm $\text{wb}\ddot{t}v\ddot{t}Y$ $\ddot{t}Kvb$ $\text{AvB}\ddot{t}m\ddot{v}\ddot{U}vc\ddot{v}U$
 $e^{\ddot{e}}\ddot{u}Z$ $nq?$
 (K) ^{32}P (L) ^{23}C (M) ^{14}C $\checkmark$ (N) ^{60}Co
- 94| $\ddot{t}cvj\ddot{v}U$ $\ddot{d}v\ddot{t}g$ $\ddot{t}Kvb$ $i\ddot{t}k\ddot{t}$ $e^{\ddot{e}}\ddot{v}ni$ $K\ddot{t}i$ $e^{\ddot{e}}\ddot{v}K\ddot{t}U\ddot{v}i$ $q\ddot{v}$ gb Kiv $nq?$
 (K) Avjdv (α) $i\ddot{t}k\ddot{t}$ (L) weUv (β) $i\ddot{t}k\ddot{t}$
 (M) $Mvgv$ (γ) $i\ddot{t}k\ddot{t}\checkmark$ (N) AvZ $\text{te}_{\ddot{v}b}$ $i\ddot{t}k\ddot{t}$
- 95| $\ddot{O}\ddot{t}m\ddot{t}i$ $\text{RM}\ddot{t}Z$ $m\ddot{t}hi$ $\text{P}\ddot{v}i\ddot{v}$ $\ddot{t}K$ $\text{Nb}\ddot{v}qgvb$ $M\ddot{t}ni$ gZ $B\ddot{t}jKubmgn$
 $\text{wbD}\ddot{t}Kqv\ddot{t}mi$ $\text{P}\ddot{v}i\ddot{v}$ $\ddot{t}K$ $me^{\ddot{e}}\ddot{v}$ $\text{NY}\ddot{v}qgvb\ddot{O}$ GZ $\ddot{v}U$ $\ddot{t}Kvb$ $cigvY$ $g\ddot{t}Wj$
 $\ddot{t}_{\ddot{t}K}$ $cvlqv$ $h\ddot{v}q?$
 (K) $\text{tev}\ddot{t}i$ $cigvY$ $g\ddot{t}Wj$
 (L) $i\ddot{v}\ddot{v}i$ $\ddot{t}dv\ddot{t}Wi$ $cigvY$ $g\ddot{t}Wj\checkmark$
 (M) $cigvYi$ $\ddot{t}Kvqv\ddot{v}g$ $g\ddot{t}Wj$
 (N) $\text{WjU}\ddot{t}bi$ $cigvY$ $g\ddot{t}Wj$
- 96| $i\ddot{v}\ddot{v}i\ddot{t}dW$ $\text{wbD}\ddot{t}Kqv\ddot{t}mi$ aviYv $\ddot{t}b$ $\text{wb}\ddot{t}\ddot{a}i$ KZ $m\ddot{v}\ddot{t}j?$
 (K) 1913 $m\ddot{v}\ddot{t}j$ (L) 1911 $m\ddot{v}\ddot{t}j\checkmark$
 (M) 1914 $m\ddot{v}\ddot{t}j$ (N) 1897 $m\ddot{v}\ddot{t}j$
- 97| bxjm tevi KZ $\text{wL}\ddot{v}\ddot{t}\ddot{a}$ $cigvY$ $M\ddot{v}\ddot{t}bi$ DbZ $\text{GK}\ddot{v}U$ $g\ddot{t}Wj$
 $c^{\ddot{e}}\ddot{v}b$ $K\ddot{t}ib?$
 (K) 1718 $\text{wL}\ddot{v}\ddot{t}\ddot{a}$ (L) 1819 $\text{wL}\ddot{v}\ddot{t}\ddot{a}$
 (M) 1913 $\text{wL}\ddot{v}\ddot{t}\ddot{a}\checkmark$ (N) 1625 $\text{wL}\ddot{v}\ddot{t}\ddot{a}$
- 98| $cigvYi$ $k\ddot{v}^3$ $\ddot{t}ii$ aviYv $\ddot{t}b$ $\ddot{t}K?$ A_{ev} , $\ddot{t}Kvb$ $cigvY$ $g\ddot{t}Wj$
 $\ddot{t}_{\ddot{t}K}$ $cigvY\ddot{t}Z$ $k\ddot{v}^3$ i $K\ddot{y}c\ddot{t}_{\ddot{v}i}$ aviYv $cvlqv$ $h\ddot{v}q?$
 (K) bxjm $\text{tevi}\checkmark$ (L) $i\ddot{v}\ddot{v}i\ddot{t}dW$

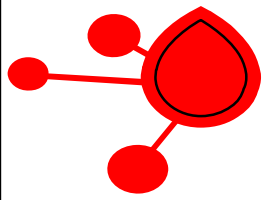
- (M) $W\ddot{e}b$ (N) $g^{\ddot{v}} \cdot \ddot{t}qj$
- 99| $cigvY\ddot{t}Z$ $B\ddot{t}jKub\ddot{t}bi$ $cavb$ $k\ddot{v}^3$ i ev $\ddot{t}Kj$, $\ddot{t}jv\ddot{t}K$ $B\ddot{t}iR\ddot{x}$
 $eYgvjvi$ $\ddot{t}Kvb$ $\ddot{A}yi$, $\ddot{t}jv$ $\ddot{v}iv$ $cKvk$ Kiv $nq?$
 (K) A, B, C, D, E, F.....
 (L) P, Q, R, S, T.....
 (M) K, L, M, N, O, P..... $\checkmark$
 (N) s, p, d, f, g.....
- 100| tevi $cigvY$ $g\ddot{t}Wj$ $\text{wb}\ddot{t}\ddot{a}i$ $\ddot{t}Kvb$ $\text{tg}\ddot{t}j\ddot{v}U$ i $eY\ddot{v}j$ $e^{\ddot{v}}L^{\ddot{v}}$ $Ki\ddot{t}Z$
 $cv\ddot{t}i?$
 (K) $n\ddot{v}B\ddot{t}W\ddot{t}Rb\checkmark$ (L) $\text{Aw} \cdot \ddot{t}Rb$
 (M) $b\ddot{v}B\ddot{t}U\ddot{v}\ddot{t}Rb$ (N) wbqb
- 101| th $\ddot{t}Kvb$ $\ddot{t}k\ddot{t}ji$ $m\ddot{t}ev^{\ddot{p}}$ $B\ddot{t}jKub$ aviY $\ddot{y}gZ\ddot{v}$ $nj\ddot{N}$
 (K) n^2 (L) $2n^3$ (M) $3n^2$ (N) $2n^2\checkmark$
- 102| $cigvYi$ $\ddot{t}Kvb$ $\ddot{t}k\ddot{t}j$ $m\ddot{t}ev^{\ddot{p}}$ $32\ddot{v}U$ $B\ddot{t}jKub$ $\ddot{v}K\ddot{t}Z$ $cv\ddot{t}i?$
 (K) $2q$ $\ddot{t}k\ddot{t}j$ (L) $3q$ $\ddot{t}k\ddot{t}j$ (M) $4_{\ddot{t}k\ddot{t}j}$ (N) $\checkmark$ (N) $1g$ $\ddot{t}k\ddot{t}j$ (K)
- 103| $\ddot{v}Zxq$ $\ddot{t}k\ddot{t}j$ $m\ddot{t}ev^{\ddot{p}}$ $B\ddot{t}jKub$ aviY $\ddot{y}gZ\ddot{v}$ $KZ\ddot{v}U?$
 (K) $8\ddot{v}U$ (L) $16\ddot{v}U$ (M) $12\ddot{v}U$ (N) $18\ddot{v}U$
- 104| $cigvYi$ $\ddot{t}Kvb$ $\ddot{t}k\ddot{t}j$ $m\ddot{t}ev^{\ddot{p}}$ $18\ddot{v}U$ $B\ddot{t}jKub$ $\ddot{v}K\ddot{t}Z$ $cv\ddot{t}i?$
 (K) L (L) M $\checkmark$ (M) N (N) O
- 105| $ZZxq$ $\ddot{t}k\ddot{t}j$ $m\ddot{t}ev^{\ddot{p}}$ $B\ddot{t}jKub$ aviY $\ddot{y}gZ\ddot{v}$ $KZ\ddot{v}U?$
 (K) 10 (L) 2 (M) 8 (N) 18 $\checkmark$
- 106| N $\ddot{t}k\ddot{t}ji$ $(4_{\ddot{t}k\ddot{t}j})$ $m\ddot{t}ev^{\ddot{p}}$ $B\ddot{t}jKub$ aviY $\ddot{y}gZ\ddot{v}$ $KZ?$
 (K) 32 $\checkmark$ (L) 18 (M) 8 (N) 2
- 107| $2,8,2$ $B\ddot{t}jKub$ $\text{web}^{\ddot{v}m}\ddot{v}U$ $\ddot{t}Kvb$ $\text{tg}\ddot{t}ji?$
 (K) Na (L) K (M) Mn (N) Mg $\checkmark$
- 108| $\text{wb}\ddot{t}\ddot{a}i$ $\ddot{t}Kvb$ $\text{Dck}\ddot{v}^3$ $\ddot{t}i$ $mevi$ $\text{Av}\ddot{t}M$ $B\ddot{t}jKub$ $c\ddot{t}ek$ $K\ddot{t}i?$
 (K) 4s (L) 4p (M) 3p $\checkmark$ (N) 3d
- 109| $\ddot{t}Kvb$ $\text{AiweU}\ddot{v}\ddot{t}j$ $B\ddot{t}jKub$ $m\ddot{t}ek\ddot{t}l$ $c\ddot{t}ek$ $K\ddot{t}i?$
 (K) 3p (L) 3d $\checkmark$ (M) 3s (N) 4s
- 110| d $\text{Dck}\ddot{v}^3$ $\ddot{t}i$ (Orbital) $m\ddot{t}ev^{\ddot{p}}$ $B\ddot{t}jKub$ aviY $\ddot{y}gZ\ddot{v}$ $KZ?$
 (K) 2 (L) 6 (M) 8 (N) 10 $\checkmark$
- 111| $\ddot{t}Kvb$ $\text{Dck}\ddot{v}^3$ $\ddot{t}i$ $\text{AiweU}\ddot{v}\ddot{t}j$ $m\ddot{t}ev^{\ddot{p}}$ $14\ddot{v}U$ $B\ddot{t}jKub$ $c\ddot{t}ek$
 $Ki\ddot{t}Z$ $cv\ddot{t}i?$
 (K) s (L) p (M) d (N) f $\checkmark$
- 112| $\ddot{t}Kvb\ddot{v}U$ $\ddot{d}mi\ddot{v}\ddot{t}mi$ $B\ddot{t}jKub$ $\text{web}^{\ddot{v}m}$
 (K) 2, 8, 2 (L) 2, 8, 4
 (M) 2, 8, 5 $\checkmark$ (N) 2, 8, 3
- 113| $\ddot{t}Kvb\ddot{v}U$ $K^{\ddot{v}}j$ $\text{wmqv}\ddot{t}gi$ $B\ddot{t}jKub$ $\text{web}^{\ddot{v}m}$
 (K) 2,8,8,1 (L) 2,8,8,2 $\checkmark$



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- (M) 2,8,1 (N) 2,8,2
114 | $\uparrow K \uparrow w i b \text{ } c i g \uparrow Y i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v m \text{ } n \uparrow Q \checkmark$
(K) 2, 8, 1 (L) 2, 8
(M) 2, 8, 8 (N) 2, 8, 7 $\checkmark$
115 | $A \uparrow M b \text{ } (A r) \text{ } G i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v m \text{ } \uparrow K \uparrow v b \uparrow U ?$
(K) $1s^2 2s^2 2p^6$ (L) $1s^2 2s^2 2p^6 3s^1$
(M) $1s^2 2s^2 2p^6 3s^2 3p^5$ (N) $1s^2 2s^2 2p^6 3s^2 3p^6 \checkmark$
116 | $\uparrow K \uparrow w i b \text{ } (C l) \text{ } G i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v m \text{ } \uparrow K \uparrow v b \uparrow U ?$
(K) $1s^2 2s^2 2p^6$
(L) $1s^2 2s^2 2p^6 3s^1$
(M) $1s^2 2s^2 2p^6 3s^2 3p^5 \checkmark$
(N) $1s^2 2s^2 2p^6 3s^2 3p^6$
117 | $\uparrow K \uparrow v i \uparrow B W \text{ } A \uparrow q b \text{ } (C l) \text{ } G i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v m \text{ } \uparrow K \uparrow v b \uparrow U ?$
(K) $1s^2 2s^2 2p^6$
(L) $1s^2 2s^2 2p^6 3s^1$
(M) $1s^2 2s^2 2p^6 3s^2 3p^5$
(N) $1s^2 2s^2 2p^6 3s^2 3p^6 \checkmark$
118 | $\uparrow m \uparrow w \uparrow q \uparrow v g \text{ } (N a) \text{ } G i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v m \text{ } \uparrow K \uparrow v b \uparrow U ?$
(K) $1s^2 2s^2 2p^6$
(L) $1s^2 2s^2 2p^6 3s^1 \checkmark$
(M) $1s^2 2s^2 2p^6 3s^2 3p^5$
(N) $1s^2 2s^2 2p^6 3s^2 3p^6$
119 | $\uparrow m \uparrow w \uparrow q \uparrow v g \text{ } A \uparrow q b \text{ } (N a^+) \text{ } G i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v m \text{ } \uparrow K \uparrow v b \uparrow U ?$
(K) $1s^2 2s^2 2p^6 \checkmark$
(L) $1s^2 2s^2 2p^6 3s^1$
(M) $1s^2 2s^2 2p^6 3s^2 3p^5$
(N) $1s^2 2s^2 2p^6 3s^2 3p^6$
120 | $K \text{ } \uparrow v \text{ } j \text{ } \uparrow m \uparrow q \uparrow v g \text{ } (C a) \text{ } G i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v m \text{ } \uparrow K \uparrow v b \uparrow U ?$
(K) $1s^2 2s^2 2p^6$
(L) $1s^2 2s^2 2p^6 3s^1$
(M) $1s^2 2s^2 2p^6 3s^2 3p^5$
(N) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 \checkmark$
121 | $K \text{ } \uparrow v \text{ } j \text{ } \uparrow m \uparrow q \uparrow v g \text{ } (C a^{2+}) \text{ } G i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v m \text{ } \uparrow K \uparrow v b \uparrow U ?$
(K) $1s^2 2s^2 2p^6$
(L) $1s^2 2s^2 2p^6 3s^1$
(M) $1s^2 2s^2 2p^6 3s^2 3p^5$
(N) $1s^2 2s^2 2p^6 3s^2 3p^6 \checkmark$
122 | $C a^{2+} \text{ } A \uparrow q \uparrow b i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v m \text{ } n \uparrow Q \checkmark$

- (K) 2,8 (L) 2, 8, 1
(M) 2, 8, 8, 1 (N) 2, 8, 8 $\checkmark$
123 | $\uparrow b \uparrow q \uparrow b \text{ } (N e) \text{ } G i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v m \text{ } \uparrow K \uparrow v b \uparrow U ?$
(K) $1s^2 2s^2 2p^6 \checkmark$
(L) $1s^2 2s^2 2p^6 3s^1$
(M) $1s^2 2s^2 2p^6 3s^2 3p^5$
(N) $1s^2 2s^2 2p^6 3s^2 3p^6$
124 | $N a^+ \text{ } G i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v m \text{ } b \uparrow x \uparrow P i \text{ } \uparrow K \uparrow v b \uparrow U i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v \uparrow m i \text{ } g \uparrow Z i ?$
(K) He (L) Ne $\checkmark$ (M) Ar (N) Kr
125 | $C l^- \text{ } G i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v m \text{ } b \uparrow x \uparrow P i \text{ } \uparrow K \uparrow v b \uparrow U i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v \uparrow m i \text{ } g \uparrow Z i ?$
(K) He (L) Ne (M) Ar $\checkmark$ (N) Kr
126 | $A l \text{ } G i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v m \text{ } \uparrow K \uparrow v b \uparrow U ?$
(K) $1s^2 2s^2 2p^6$
(L) $1s^2 2s^2 2p^6 3s^1$
(M) $1s^2 2s^2 2p^6 3s^2 3p^1 \checkmark$
(N) $1s^2 2s^2 2p^6 3s^2 3p^6$
127 | $A l^{3+} \text{ } G i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v m \text{ } \uparrow K \uparrow v b \uparrow U ?$
(K) $1s^2 2s^2 2p^6 \checkmark$
(L) $1s^2 2s^2 2p^6 3s^1$
(M) $1s^2 2s^2 2p^6 3s^2 3p^5$
(N) $1s^2 2s^2 2p^6 3s^2 3p^6$
128 | $A \uparrow q \uparrow b \text{ } (F e) \text{ } G i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v m \text{ } \uparrow K \uparrow v b \uparrow U ?$
(K) $1s^2 2s^2 2p^6$
(L) $1s^2 2s^2 2p^6 3s^1$
(M) $1s^2 2s^2 2p^6 3s^2 3p^1$
(N) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^6 4s^2 \checkmark$
129 | $A \uparrow q \uparrow b \text{ } A \uparrow q \uparrow b \text{ } (F e^{2+}) \text{ } G i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v m \text{ } \uparrow K \uparrow v b \uparrow U ?$
(K) $1s^2 2s^2 2p^6$
(L) $1s^2 2s^2 2p^6 3s^1$
(M) $1s^2 2s^2 2p^6 3s^2 3p^1$
(N) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^6 4s^2 \checkmark$
130 | $c \text{ } U \uparrow w \uparrow k \uparrow q \uparrow v g \text{ } (K) \text{ } G i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v m \text{ } \uparrow K \uparrow v b \uparrow U ?$
(K) 2,8,8,1 $\checkmark$ (L) 2,8,9
(M) 2,8,7,2 (N) 2,7,10
131 | $K \text{ } (19) \text{ } e v \text{ } c \text{ } U \uparrow w \uparrow k \uparrow q \uparrow v g i \text{ } G i \text{ } B \uparrow j \text{ } K U b \text{ } \uparrow e b \text{ } \uparrow v m \text{ } \uparrow K \uparrow v b \uparrow U ?$
(K) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^0 4s^1 \checkmark$
(L) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^1 4s^0$



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(M) $1s^2 2s^2 2p^6 3s^2 3p^5 3d^0 4s^2$

(N) $1s^2 2s^2 2p^6 3s^2 3p^4 3d^1 4s^2$

132| Cr^{3+} Btj KUb webvm tkvbiU?

(K) 2,8,8,3 (L) 2,8,9,2✓

(M) 2,8,10,1 (N) 2,8,11

133| Cr^{3+} M k³⁺ KZiU Btj KUb AvqQ?

(K) 8u (L) 5u (M) 9u✓ (N) 2u

134| Cr Gi cvigYieK msL^v 24; Gi mivK Btj KUb webvm tkvbiU?

(K) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^4 4s^2$

(L) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^1$ ✓

(M) $1s^2 2s^2 2p^6 3s^2 3p^5 3d^6 4s^1$

(N) $1s^2 2s^2 2p^6 3s^2 3p^4 3d^6 4s^2$

135| ^{24}Cr Gi Btj KUb webvm tkvbiU?

(K) 2,8,13,1✓ (L) 2,8,8,6

(M) 2,8,12,2 (N) 2,8,14

136| ^{29}Cu Gi Btj KUb webvm tkvbiU?

(K) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^4 4s^1$

(L) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^1$ ✓

(M) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{11}$

(N) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^9 4s^2$

137| ^{29}Cu Gi Btj KUb webvm tkvbiU?

(K) 2,8,8,11 (L) 2,8,7,2

(M) 2,8,18,1✓ (N) 2,8,19

138| Cr^{3+} KivKvi g³⁺ PVR h³⁺ KivKvN

(i) Btj±b I bDUB

(ii) bDUB I tcvUb

(iii) Btj±b I tcvUb

webPi tkvbiU mivK?

(K) i I ii

(L) ii I iii

(M) iii✓

(N) i, ii I iii

139| Btj±biN

(i) Avavb $-1.6 \times 10^{19} \text{C}$

(ii) Avavb $-1.6 \times 10^{-19} \text{C}$

(iii) fi $9.11 \times 10^{-28} \text{g}$

webPi tkvbiU mivK?

(K) i I ii

(L) ii I iii

(M) iii

(N) i I iii✓

140| Cr^{3+} Btj KUb, tcvUb Ges bDUB v⁺K| tK⁺ Ae⁻vb K⁺iN

(i) Btj KUb

(ii) tcvUb

(iii) bDUB

webPi tkvbiU mivK?

(K) i I ii

(L) i I iii

(M) ii I iii✓

(N) i, ii I iii

141| Cr^{3+} FYvZiK PVRh³⁺ KivKvN

(i) BtjKU⁺bi fi bDU⁺bi f⁺i Ask $\frac{1}{1840}$

(ii) BtjKU⁺bi cKZ fi $9.11 \times 10^{-28} \text{Mvg}$

(iii) BtjKU⁺bi PVR $-9.11 \times 10^{-28} \text{C}$

webPi tkvbiU mivK?

(K) ii I iii

(L) i I iii

(M) i I ii✓

(N) i, ii I iii

142| bDikqb msL^v n⁺jvN

(i) Cr^{3+} cvigYieK fi msL^v

(ii) Btj KUb I tcvUb msL^v i mgvó

(iii) tcvUb I bDUB msL^v i mgvó

webPi tkvbiU mivK?

(K) i I ii

(L) ii I iii

(M) i I iii✓

(N) i, ii I iii

143| Cr^{3+} Ae⁻vq Cr^{3+} YiN

(i) tcvUb I Btj KUb msL^v me⁻v mgvb

(ii) tcvUb I bDUB msL^v me⁻v mgvb

(iii) cvigYieK msL^v I Btj KUb msL^v mgvb

webPi tkvbiU mivK?

(K) i I ii

(L) ii I iii

(M) i I iii✓

(N) i, ii I iii

144| tKv t⁺g⁺ji Cr^{3+} YvZi Cr^{3+} g⁺vb tcvUb I bDUB msL^v mgvóK ejv nqN

(i) cvigYieK msL^v

(ii) cvigYieK fi msL^v

(iii) bDikqb msL^v

webPi tkvbiU mivK?

(K) i I ii

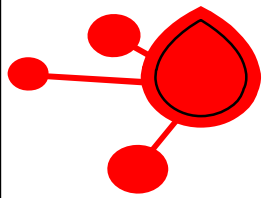
(L) ii I iii✓

(M) i I iii

(N) i, ii I iii

145| ^{18}U Btj KUb weikó AvqY njN

(i) Ca^{2+}



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(ii) Al^{3+}

(iii) Cl^-

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii

(L) i l iii ✓

(M) ii l iii

(N) i, ii l iii

146| $^{27}_{13}Al^{3+}$ GB cZ:k t_#K eSv hvqÑ

(i) Al Gi tcvUb msL^v = 13

(ii) Al Gi ৱবDUB msL^v = 14

(iii) Al Gi Bঃj KUb msL^v = 10

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii

(L) ii l iii

(M) i l iii

(N) i, ii l iii ✓

147| $^{64}_{29}Cu$ l $^{64}_{30}Zn$ tঃgঃj tঃqি cিgYi tঃyঃÎÑ

(i) Dfঃq cিgYi tcvUb l ৱবDUB msL^vi mঃiঃo mঃyb

(ii) Dfঃq cি^úঃi i AvBঃmvঃUvc

(iii) Dfঃqি tঃfঃZ l i vmvঃq ৱবK ag ৱfb

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii

(L) ii l iii

(M) i l iii ✓

(N) i, ii l iii

148| ৱবDঃKqvi ৱেঃμqvi gvaঃtঃgÑ

(i) tঃZR^tঃq AvBঃmvঃUvc ^Zi i Kiv nq

(ii) cvigYi ৱেK PjঃtঃZ ৱে^r Drcv^b Kiv nq

(iii) cvigYi ৱেK tঃvgv ^Zi i Kiv nq

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii

(L) ii l iii

(M) i l iii

(N) i, ii l iii ✓

149| tঃZR^tঃq AvBঃmvঃUvc t_#K ৱবMZ MqÑ

(i) Avj dv (α) iঃk!

(ii) ৱেUv iঃk! (β)

(iii) Mvgv iঃk! (γ)

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii

(L) ii l iii

(M) i l iii

(N) i, ii l iii ✓

150| tঃvঃi i cিgY gঃWj AbmvঃiÑ

(i) ৱবDঃKqvi Pvi^#K Bঃj KUbmgñ ৱে^i Kঃyঃt_ NiঃZ _vঃtঃK

(ii) ৱবঃZi Kঃyঃt_ t_#K D^PZi Kঃyঃt_ ^vঃbঃš i Z nঃj

Bঃj KUbmgñ kঃ^3 tঃkviY Kঃi

(iii) D^PZi Kঃyঃt_ t_#K ৱবঃZi Kঃyঃt_ ^vঃbঃš i Z nঃj

Bঃj KUbmgñ kঃ^3 ৱে^i KviY Kঃi

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii

(L) ii l iii

(M) i l iii

(N) i, ii l iii ✓

151| K^vঃj ৱমঃqঃgiÑ

(i) Bঃj KUb ৱেb^vm 2, 8, 8, 2

(ii) N kঃ^3 ^#i Bঃj KUb msL^v 4ঃU

(iii) Ae^vঃb chvঃq mviYi PZ_ chvঃtঃq

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i

(L) ii

(M) iii

(N) i l iii ✓

152| Mg^{2+} Gi Bঃj KUb ৱেb^vÑ

(i) Na^+ Gi Bঃj KUb ৱেb^vঃmi gঃZv

(ii) Ne Gi Bঃj KUb ৱেb^vঃmi gঃZv

(iii) Ar Gi Bঃj KUb ৱেb^vঃmi gঃZv

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii ✓

(L) ii l iii

(M) i l iii

(N) i, ii l iii

153| $1s^2 2s^2 2p^6$ Bঃj KUb ৱেb^vmUÑ

(i) Na Gi Bঃj KUb ৱেb^vm

(ii) Na^+ Gi Bঃj KUb ৱেb^vm

(iii) Ne Gi Bঃj KUb ৱেb^vm

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii

(L) ii l iii ✓

(M) i l iii

(N) i, ii l iii

154| $1s^2 2s^2 2p^6 3s^2 3p^6$ Bঃj KUb ৱেb^vmUÑ

(i) Ar Gi Bঃj KUb ৱেb^vm

(ii) Ca^2+ Gi Bঃj KUb ৱেb^vm

(iii) Cl^- Gi Bঃj KUb ৱেb^vm

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii

(L) ii l iii

(M) i l iii

(N) i, ii l iii ✓

155| cিgYi ৱে^fঃb cavঃb kঃ^3 ^#i ৱে^fঃb Ai ৱেUv j s, p, d, f

_vঃtঃK l mঃve^ Ai ৱেUv jÑ

(i) 2p

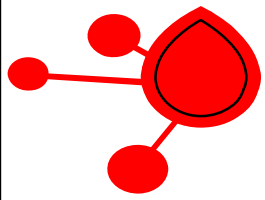
(ii) 3s

(iii) 2d

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii ✓

(L) ii l iii



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(M) dmdiv#mi GKU AvB#mv#Uvc hvi cvigvY#eK msL'v 32

(N) dmdiv#mi GKU AvB#mv#Uvc hvi cvigvY#eK

fi msL'v 32✓

166| ³²P Gi e'enviÑ

(i) i#³i #jD#Kigqv tiv#Mi #PrKrmvq

(ii) D#M~ Kx tKSk#j te#o D#V Zv Rvb#Z

(iii) _vBi#qW Mi#i tKvl-Kjv ex# tiva Ki#Z

ib#Pi tKvbU miVK?

(K) i l ii✓

(L) ii l iii

(M) i l iii

(N) i, ii l iii

PZy@a'vqt chq mviY

1| chvq mviYi miZ'Kvi gj wf#E Kx?

(K) cvigvY#eK msL'v (L) cvigvY#eK fi

(M) Av#ci#YK cvigvY#eK fi (N) B#jKUb web'vm✓

2| $A = 1s^2 2s^2 2p^6 3s^2 3p^6 3d^3 4s^2$; tg#jU chvq mviYi tKvb M#c Ae#Z?

(K) Group - 2 (L) Group - 5 ✓

(M) Group - 11 (N) Group - 13

3| 'X' tg#jU chvq mviYi tKvb chv#qi?

(K) 3q (L) 4

(M) 5g✓ (N) 6d

4| D#jLZ tg#j, #jviÑ

(i) me#kl #i 1U B#jKUb Av#Q

(ii) cvigvY#eK AvKvi #gv#tq nvm cvq

(iii) m#mqZv #gv#tq ex# cvq

ib#Pi tKvbU miVK?

(K) i l ii (L) ii l iii

(M) i l iii✓ (N) i, ii l iii

5| chvq mviYi RbK tK?

(K) tg#Uj (L) tg#Ujd✓

(M) A'v#fv#M#Ww (N) #bDUb

6| tg#Ujd tKvb t#tki #eÁvbx #Q#jb?

(K) i#kqv✓ (L) nj'vU

(M) d'vY (N) Bs#vU

7| KZ #Lóv#ã tg#Ujd #chvq mviYi Z#jKv cKvk K#ib?

(K) 1869 ✓ (L) 1864

(M) 1907 (N) 1931

8| 2012 mvj chš kbv³KZ tg#j i msL'v KZ?

(K) 110 (L) 112

(M) 114 (N) 118✓

9| eZgv#b IUPAC #xKZ tg#j KZiU?

(K) 110 (L) 112

(M) 114 ✓ (N) 118

10| IUPAC #xKZ tg#j, #jvi g#a' KZiUi bvgKiY n#t#Q?

(K) 109iU (L) 112iU✓

(M) 111iU (N) 110iU

11| i#k #eÁvbx g'v#Ujd KZiU tg#j #b#q AvarbK chvq mviYi ceZb K#i#Q#jb?

(K) 63 (L) 67✓

(M) 98 (N) 105

12| cK#Z#Z cv# tg#j i msL'v KZ?

(K) 63 (L) 67

(M) 98✓ (N) 105

13| chvq mviYi telki f#M tg#j Ave#Z n#t#QÑ

(K) m#v' k kZv#ã#Z (L) Db#esk kZv#ã#Z

(M) GK#esk kZv#ã#Z (N) Aóv' k kZv#ã#Z✓

14| ib#Pi tKvbU chvq mviYi #vi avZmg#ni m#t_ Ae#vb K#i?

(K) t#dwib (L) tevib

(M) m#jqg (N) nvB#W#Rb✓

15| AvarbK chvq mviY#Z b#B#U#R#bi Ae#vb-

(K) M#c 7 (L) M#c 3

(M) M#c 10 ✓ (N) M#c 15

16| ib#Pi tKvb tg#jU me#P#q Kg m#mq?

(K) Av#qvWb✓ (L) t#dwib

(M) tewgb (N) tKwib

17| ib#Pi tKvb tg#jU me#P#q tewk m#mq?

(K) Av#qvWb (L) t#dwib ✓

(M) tewgb (N) tKwib

18| chvq mviYi 6d chv#q KqU tg#j Av#Q?

(K) 32✓ (L) 18

(M) 23 (N) 8

19| AvarbK chvq mviY#Z KqU chvq Av#Q?

(K) 8iU (L) 7iU✓

(M) 9iU (N) 6iU

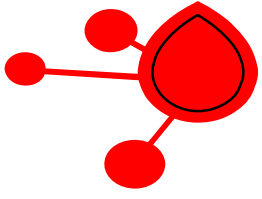
20| AvarbK chvq mviY#Z l M#c i msL'v h_y#tg-

(K) 7 l 8 (L) 7 l 18✓

(M) 3 l 10 (N) 7 l 11

21| j'v#vbWw m#i#Ri tg#j, #jv chvq mviYi tKvb M#c Ae#Z?

(K) M#c-1 (L) M#c-2



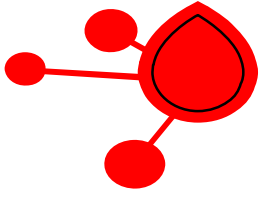
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- (M) M₂C-3✓ (N) M₂C-4
- 22| A⁻K⁺U⁻B⁺W⁺ m⁺i⁺Ri t⁺g⁺j⁺, t⁺j⁺v chvq m⁺i⁺Yi t⁺K⁺v chvq I t⁺K⁺v M₂C Ae⁻Z?
- (K) 3q chvq I M₂C-3 (L) 6ô chvq I M₂C-6
- (M) 7g chvq I M₂C-3✓ (N) 7g chvq I M₂C-7
- 23| j⁻v⁻š⁻v⁻b⁻v⁻B⁻W⁻ m⁻i⁻Ri t⁻g⁻š⁻t⁻j⁻i m⁻L⁻v KZ?
- (K) 32 (L) 18
- (M) 15✓ (N) 17
- 24| A⁻K⁺U⁻B⁺W⁺ m⁺i⁺Ri t⁺g⁺š⁺t⁺j⁺i m⁺L⁺v KZ?
- (K) 32 (L) 18
- (M) 15✓ (N) 17
- 25| chvq m⁺i⁺Yi 7g chv⁺q⁺i M₂C-3 G t⁺g⁺š⁺t⁺j⁺i m⁺L⁺v KZ?
- (K) 32 (L) 18
- (M) 15✓ (N) 14
- 26| Rb bDj⁻v⁻t⁻û⁻i chvq m⁺i⁺Yi f⁺i⁺Ē⁺K⁺ Qj?
- (K) cvigYieK m⁻L⁻v (L) B⁺j KUb m⁻L⁻v
- (M) bD⁺U⁺b m⁻L⁻v (N) cvigYieK f⁺i✓
- 27| cvigYieK m⁻L⁻v Awe⁺@⁺vi nq KZ m⁺t⁺j?
- (K) 1613 (L) 1887
- (M) 1913✓ (N) 1916
- 28| t⁺g⁺š⁺j⁺m⁺g⁺t⁺ni t⁺f⁺š⁺Z I i⁻m⁻v⁻q⁻i⁻b⁻K ag⁻v⁻j Z⁻t⁻i K Abh⁻v⁻q⁻ chv⁻q⁻μ⁻t⁻g Ave⁻ZZ nq?
- (K) f⁺i m⁻L⁻v (L) A⁻v⁻t⁻f⁻v⁻M⁻š⁻W⁻ m⁻L⁻v
- (M) cvigYieK m⁻L⁻v✓ (N) B⁺j KUb m⁻L⁻v
- 29| GKB t⁺k⁺i⁺Yi t⁺g⁺š⁺j⁺m⁺g⁺t⁺ni a⁺t⁺g tek⁺ g⁺j t⁺-⁺L⁺v hv⁺q| Gi K⁺vi⁺Y⁺N
- (K) GKB t⁺k⁺i⁺Yi t⁺g⁺š⁺j⁺m⁺g⁺t⁺ni cvigYieK m⁻L⁻v GKB
- (L) GKB t⁺k⁺i⁺Yi t⁺g⁺š⁺j⁺m⁺g⁺t⁺ni th⁺v⁺R⁺b⁺x GKB
- (M) GKB t⁺k⁺i⁺Yi t⁺g⁺š⁺j⁺m⁺g⁺t⁺ni B⁺j KUb web⁻vm GKB ai⁺t⁺bi✓
- (N) GKB t⁺k⁺i⁺Yi t⁺g⁺š⁺j⁺m⁺g⁺t⁺ni cvigYieK f⁺i m⁻L⁻v GKB
- 30| t⁺g⁺m⁺t⁺j KZ m⁺t⁺j cvigYieK m⁻L⁻v Awe⁺@⁺vi K⁺t⁺ib?
- (K) 1613 m⁺t⁺j (L) 1713 m⁺t⁺j
- (M) 1813 m⁺t⁺j (N) 1913 m⁺t⁺j ✓
- 31| cvigYieK m⁻L⁻v Awe⁺@⁺vi K⁺t⁺ib⁺ñ
- (K) bD⁺U⁺b (L) M⁺-v⁻j⁻j I
- (M) i⁻v⁻i⁻t⁻d⁻w (N) t⁺g⁺m⁺t⁺j ✓
- 32| b⁺K⁺ô a⁺vZ (Inferior metals) i⁻n⁻t⁻m⁻t⁻e c⁺i⁺i PZ t⁺K⁺v⁺b⁺U⁺?
- (K) Al (L) Cu
- (M) Zn ✓ (N) Na
- 33| chvq m⁺i⁺Yi î⁺q⁺ m⁺i t⁺K c⁻-v⁻b K⁺t⁺ib?
- (K) t⁺g⁺û⁺j d (L) bDj⁻v⁻û
- (M) t⁺W⁺t⁺e⁺i⁺B⁺b⁺vi✓ (N) t⁺g⁺m⁺t⁺j
- 34| chvq m⁺i⁺Yi A⁺ôK ZĒ ceZY K⁺t⁺ib t⁺K?

- (K) t⁺g⁺û⁺j d (L) bDj⁻v⁻û✓
- (M) t⁺W⁺t⁺e⁺i⁺B⁺b⁺vi (N) t⁺g⁺m⁺t⁺j
- 35| g⁻v⁻t⁻û⁻j⁻t⁻di m⁺š⁺k⁺v⁺a⁺Z chvq m⁺i⁺ Abm⁺v⁺i t⁺g⁺š⁺j⁺m⁺g⁺t⁺ni t⁺f⁺š⁺Z I i⁻m⁻v⁻q⁻i⁻b⁻K ag⁻v⁻j Ave⁻ZZ nq b⁺x⁺Pi t⁺K⁺v⁺b⁺U⁺i f⁺i⁺Ē⁺Z?
- (K) cvigYieK m⁻L⁻v✓ (L) bD⁺K⁺q⁺b m⁻L⁻v
- (M) cvigYieK f⁺i m⁻L⁻v (N) B⁺j KUb m⁻L⁻v
- 36| A⁺i⁺f⁺R⁺v⁺Z a⁺vZ, t⁺j⁺v (g⁻-v⁻ a⁻vZ) chvq m⁺i⁺Yi t⁺K⁺v M₂C Ae⁻Z?
- (K) M₂C-1 (L) M₂C-2
- (M) M₂C-11✓ (N) M₂C-18
- 37| t⁺K⁺v⁺b t⁺g⁺š⁺t⁺j⁺i i⁻m⁻v⁻q⁻i⁻b⁻K ag⁻ b⁺f⁺i K⁺t⁺i g⁺jZt Z⁻vi-
- (K) cvigYieK m⁻L⁻vi Dci
- (L) bD⁺K⁺q⁺b m⁻L⁻vi Dci
- (M) B⁺j KUb web⁻v⁻t⁻mi Dci✓
- (N) B⁺j KUb m⁻L⁻vi Dci
- 38| cvigYieK m⁻L⁻vi a⁺i⁺Y⁺i t⁺-⁺b t⁺K?
- (K) e⁺Á⁺v⁺b⁺ g⁻-v⁻t⁻û⁻j d (L) j⁻-v⁻f⁻q⁻m⁻t⁻q
- (M) bDj⁻v⁻û (N) t⁺g⁺m⁺t⁺j✓
- 39| c⁻-g Ae⁻-v⁻q chvq m⁺i⁺Y⁺t⁺Z t⁺g⁺š⁺j⁺m⁺g⁺t⁺ni K⁺ m⁺v⁺R⁺v⁺b⁺v n⁺-q⁻Q⁻j K⁺t⁺mi f⁺i⁺Ē⁺Z?
- (K) cvigYieK m⁻L⁻v Abm⁺v⁺i
- (L) cvigYieK f⁺i Abm⁺v⁺i✓
- (M) cvigYieK A⁺v⁺K⁺vi Abm⁺v⁺i
- (N) B⁺j KUb web⁻vm Abm⁺v⁺i
- 40| chvq m⁺i⁺Y⁺t⁺Z c⁺U⁺i⁺k⁺q⁺t⁺gi Ae⁻-v⁻b t⁺K⁺v⁺b chv⁺q?
- (K) PZ⁻ chv⁺q✓ (L) ZZ⁻x⁻q chv⁺q
- (M) bD⁺Z⁺x⁺q chv⁺q (N) c⁺Á⁺g chv⁺q
- 41| chvq m⁺i⁺Y⁺t⁺Z R⁺sK Gi Ae⁻-v⁻b t⁺K⁺v⁺-v⁻q?
- (K) 1 M₂C (L) 12 M₂C✓
- (M) 13 M₂C (N) 4 M₂C
- 42|
- | Na | M | Al | Si | P | | | | | | | | | | | | | |
|---|---|---|----|---|--|---|--|---|--|--|--|---|--|---|--|--|--|
| G ⁺ i ⁺ U ⁺ chv ⁺ q m ⁺ i ⁺ Yi G ⁺ K ⁺ i ⁺ U ⁺ chv ⁺ q L ⁺ i ⁺ Ē ⁺ K Ask ⁺ M t ⁺ g ⁺ š ⁺ j ⁺ U ⁺ m ⁺ i ⁺ Yi t ⁺ K ⁺ v M ₂ C Ae ⁻ -v ⁻ b K ⁺ i ⁺ t ⁺ e? <tr> <td>(K) 1 (L) 2✓</td> <td>(M) 14 (N) 16</td> <td></td> <td></td> <td></td> </tr> <tr> <td>43 chvq m⁺i⁺Y⁺t⁺Z m⁺m⁺i⁺j K⁺t⁺bi Ae⁻-v⁻b t⁺K⁺v M₂C? <tr> <td>(K) M₂C-2 (L) M₂C-13</td> <td>(M) M₂C-14✓ (N) M₂C-17</td> <td></td> <td></td> <td></td> </tr> <tr> <td>44 m⁺j⁺d⁺v⁺i⁺i B⁺j KUb web⁻vm 2, 8, 6 n⁺-t⁻j chvq m⁺i⁺Y⁺t⁺Z Gi Ae⁻-v⁻b t⁺K⁺v chv⁺q? <tr> <td>(K) 6ô chv⁺q (L) 3q chv⁺q✓</td> <td>(M) 2q chv⁺q (N) 4⁻ chv⁺q</td> <td></td> <td></td> <td></td> </tr> </td></tr></td></tr> | (K) 1 (L) 2✓ | (M) 14 (N) 16 | | | | 43 chvq m ⁺ i ⁺ Y ⁺ t ⁺ Z m ⁺ m ⁺ i ⁺ j K ⁺ t ⁺ bi Ae ⁻ -v ⁻ b t ⁺ K ⁺ v M ₂ C? <tr> <td>(K) M₂C-2 (L) M₂C-13</td> <td>(M) M₂C-14✓ (N) M₂C-17</td> <td></td> <td></td> <td></td> </tr> <tr> <td>44 m⁺j⁺d⁺v⁺i⁺i B⁺j KUb web⁻vm 2, 8, 6 n⁺-t⁻j chvq m⁺i⁺Y⁺t⁺Z Gi Ae⁻-v⁻b t⁺K⁺v chv⁺q? <tr> <td>(K) 6ô chv⁺q (L) 3q chv⁺q✓</td> <td>(M) 2q chv⁺q (N) 4⁻ chv⁺q</td> <td></td> <td></td> <td></td> </tr> </td></tr> | (K) M ₂ C-2 (L) M ₂ C-13 | (M) M ₂ C-14✓ (N) M ₂ C-17 | | | | 44 m ⁺ j ⁺ d ⁺ v ⁺ i ⁺ i B ⁺ j KUb web ⁻ vm 2, 8, 6 n ⁺ -t ⁻ j chvq m ⁺ i ⁺ Y ⁺ t ⁺ Z Gi Ae ⁻ -v ⁻ b t ⁺ K ⁺ v chv ⁺ q? <tr> <td>(K) 6ô chv⁺q (L) 3q chv⁺q✓</td> <td>(M) 2q chv⁺q (N) 4⁻ chv⁺q</td> <td></td> <td></td> <td></td> </tr> | (K) 6ô chv ⁺ q (L) 3q chv ⁺ q✓ | (M) 2q chv ⁺ q (N) 4 ⁻ chv ⁺ q | | | |
| (K) 1 (L) 2✓ | (M) 14 (N) 16 | | | | | | | | | | | | | | | | |
| 43 chvq m ⁺ i ⁺ Y ⁺ t ⁺ Z m ⁺ m ⁺ i ⁺ j K ⁺ t ⁺ bi Ae ⁻ -v ⁻ b t ⁺ K ⁺ v M ₂ C? <tr> <td>(K) M₂C-2 (L) M₂C-13</td> <td>(M) M₂C-14✓ (N) M₂C-17</td> <td></td> <td></td> <td></td> </tr> <tr> <td>44 m⁺j⁺d⁺v⁺i⁺i B⁺j KUb web⁻vm 2, 8, 6 n⁺-t⁻j chvq m⁺i⁺Y⁺t⁺Z Gi Ae⁻-v⁻b t⁺K⁺v chv⁺q? <tr> <td>(K) 6ô chv⁺q (L) 3q chv⁺q✓</td> <td>(M) 2q chv⁺q (N) 4⁻ chv⁺q</td> <td></td> <td></td> <td></td> </tr> </td></tr> | (K) M ₂ C-2 (L) M ₂ C-13 | (M) M ₂ C-14✓ (N) M ₂ C-17 | | | | 44 m ⁺ j ⁺ d ⁺ v ⁺ i ⁺ i B ⁺ j KUb web ⁻ vm 2, 8, 6 n ⁺ -t ⁻ j chvq m ⁺ i ⁺ Y ⁺ t ⁺ Z Gi Ae ⁻ -v ⁻ b t ⁺ K ⁺ v chv ⁺ q? <tr> <td>(K) 6ô chv⁺q (L) 3q chv⁺q✓</td> <td>(M) 2q chv⁺q (N) 4⁻ chv⁺q</td> <td></td> <td></td> <td></td> </tr> | (K) 6ô chv ⁺ q (L) 3q chv ⁺ q✓ | (M) 2q chv ⁺ q (N) 4 ⁻ chv ⁺ q | | | | | | | | | |
| (K) M ₂ C-2 (L) M ₂ C-13 | (M) M ₂ C-14✓ (N) M ₂ C-17 | | | | | | | | | | | | | | | | |
| 44 m ⁺ j ⁺ d ⁺ v ⁺ i ⁺ i B ⁺ j KUb web ⁻ vm 2, 8, 6 n ⁺ -t ⁻ j chvq m ⁺ i ⁺ Y ⁺ t ⁺ Z Gi Ae ⁻ -v ⁻ b t ⁺ K ⁺ v chv ⁺ q? <tr> <td>(K) 6ô chv⁺q (L) 3q chv⁺q✓</td> <td>(M) 2q chv⁺q (N) 4⁻ chv⁺q</td> <td></td> <td></td> <td></td> </tr> | (K) 6ô chv ⁺ q (L) 3q chv ⁺ q✓ | (M) 2q chv ⁺ q (N) 4 ⁻ chv ⁺ q | | | | | | | | | | | | | | | |
| (K) 6ô chv ⁺ q (L) 3q chv ⁺ q✓ | (M) 2q chv ⁺ q (N) 4 ⁻ chv ⁺ q | | | | | | | | | | | | | | | | |



- 56| chvq mviwYtZ A1-Gi Ae⁻vb nt[~]QÑ
(K) Mztc 2 (L) Mztc 13✓
(M) Mztc 10 (N) Mztc 15
- 57| chvq mviwYtZ AvtmbtKi Ae⁻vb tKvb Mztc?
(K) Mztc-13 (L) Mztc-14
(M) Mztc-15✓ (N) Mztc-16
- 58| GKU tgstji BtjKub web[~]vm 2, 8, 13, 2; chvq mviwYtZ
tgstjiUi Ae⁻vb tKvb Mztc?
(K) Mztc-1 (L) Mztc-14
(M) Mztc-6✓ (N) Mztc-4
- 59| ÔXÜ tgsjjiU Gi cvigvYieK msL[~]v 28 chvq mviwYtZ tgsjjiUi
Ae⁻vbÑ
(K) 3q chvq I Mztc-7 (L) 4_ chvq I Mztc-10✓
(M) 5g chvq I Mztc-11 (N) 4_ chvq I Mztc-12
- 60| ÔAÜ tgsjjiUi cvigvYieK msL[~]v 29 chvq mviwYtZ tgsjjiUi
Ae⁻vbÑ
(K) 3q chvq I Mztc-10 (L) 4_ chvq I Mztc-10
(M) 4_ chvq I Mztc-10 (N) 4_ chvq I Mztc-11✓
- 61| GKU tgstji BtjKub web[~]vm 2, 8, 18, 1, chvq mviwYtZ
tgstjiUi Ae⁻vb?
(K) Mztc-1 (L) Mztc-18
(M) Mztc-4 (N) Mztc-11✓
- 62| GKB chvtq evg t[~]K Wtb hZB hvIqv hvq-ibtpi tKvbU NtU?
(K) avZ ag → AavZ ag✓
(L) cigvYi AvKvi evto
(M) thvRbx Ktg Ges Avevi evotZ[~]vK
(N) mμqZv evto Ges ct[~]i KgztZ[~]vK
- 63| GKB Mztc hZB wbtPi w[~]tK hvIqv hvq ZZB wbtPi tKvbU NtU?
(K) avZ ag eix cvq✓ (L) cigvYi AvKvi KgztZ[~]vK
(M) thvRbx evotZ[~]vK (N) mμqZv Ktg
- 64| mμjKb ntjvÑ
(K) avZ (L) DcavZ/AcavZ✓
(M) AavZ (N) avZ msKi
- 65| chvq mviYi tKvb chvtq cvigvYieK msL[~]v hZB eix cvq,
cigvYi AvKvi ZZBÑ
(K) w[~]i[~] vK (L) eix cvq
(M) nvm cvq✓ (N) ùz nq
- 66| chvq mviYi GKB chvtq hZB Wb w[~]tK hvIqv hvq, ZtZvB
tgstjmgtn-
(K) cigvYi AvKvi nvm cvq(L) thvRbx eix cvq
(M) avZe ag nvm cvq (N) Dcti i meB wK✓



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67| GKB chv†q evg †_†K W†b hZB hv†q hvq chvqeE a†gi
Kxi†c cwieZY N†U?

- (K) AavZ ag e†× cvq✓
(L) cigvYi AvKvi ev†o
(M) m†μqZv ev†o Ges c†i Kg†Z _v†K
(N) †hvRbx K†g Ges Ave†i ev†oZ _v†K

68| ývi avZmg†ni †μq†xjZvi μg †Kv†U?

- (K) Cs > K > Li > Na > Rb
(L) Cs < K < Na < Li < Rb
(M) Cs < Rb < K < Li < Na
(N) Cs > Rb > K > Na > Li ✓

69| †Kvb †g†j†Ui cv†gvY†eK AvKvi †Q†U?

- (K) Na (L) S ✓
(M) Rb (N) Mg

70| chvq mvi†Y†Z M†c 1 † 2 G hZB †b†Pi †_†K hv†q hvq ZZB
Kxi†c cwieZY N†U?

- (K) †g†j†i cigvY†eK fi K†g hvq
(L) †g†j†i, †jvi m†μqZv e†× cvq✓
(M) †g†j†i m†μqZv K†g
(N) cv†gvY†eK e†vmva K†g hvq

70| m†μqZvi m†VK μg †Kv†U?

- (K) †d†v†b> †K†v†b> †ev†gb> Av†q†Wb✓
(L) †K†v†b> †d†v†b> Av†q†Wb> †ev†gb
(M) †ev†gb> †K†v†b> †d†v†b> Av†q†Wb
(N) †μ†v†b> †ev†gb> Av†q†Wb> †d†v†b

72| GKB chv†q hZB W†b hv†q hvq ZZB †g†j mg†ni avZe ag

Kxi†c nq?

- (K) nvm cvq✓ (L) e†× cvq
(M) Ac†ie†ZZ _v†K (N) Z†e nq

73| †Kvb chv†qi eig †_†K W†b †M†j †g†jmg†ni M†jbsK †
ùU†v††Ki Kx ai†bi cwieZY nq?

- (K) c_†g e†× †c†j†i c†i nvm cvq✓
(L) c_†g nvm †c†j†i c†i e†× cvq
(M) nvmB †c†Z _v†K
(N) Ac†ieZbxq _v†K

74| †Kv†U †b†††q M†vm bq?

- (K) AvMb (L) †Rbb
(M) A†v†g†v†bq✓ (N) †μ†b

75| ývi avZmg†ni †hvR†Zv KZ?

- (K) 3 (L) 2
(M) 1✓ (N) 0

76| †m†v†i cv†gvY†eK msL†v KZ?

- (K) 89 (L) 69
(M) 59 (N) 79✓

77| M†c 1 Gi †g†jmg†n†K ejv nq-

- (K) †b†††q M†vm (L) gr†yvi avZ
(M) ývi avZ✓ (N) Ae†v††i avZ

78| ývi avZ, †jv chvq mvi†Y†i †Kvb M†c Ae†v†Z?

- (K) M†c-1✓ (L) M†c-2
(M) M†c-17 (N) M†c-18

79| gr†yvi avZmg†n chvq mvi†Y†i †Kvb M†c Ae†v†Z?

- (K) M†c-1 (L) M†c-2✓
(M) M†c-17 (N) M†c-18

80| g†v avZ ejv nq †Kvb M†c†i avZmg†n†K?

- (K) M†c-1 (L) M†c-11✓
(M) M†c-2 (N) M†c-3

81| n†v†j†v†Rbmgn chvq mvi†Y†i †Kvb M†c Ae†v†Z?

- (K) M†c-7 (L) M†c-17✓
(M) M†c-8 (N) M†c-18

82| Ae†v††i †g†jmg†n chvq mvi†Y†i †Kvb M†c Ae†v†Z?

- (K) M†c-1 †_†K M†c-7 (L) M†c-3 †_†K M†c-11✓
(M) M†c-8 †_†K M†c-17 (N) M†c-5 †_†K M†c-11

83| †b†Pi †Kv†U n†v†j†v†Rb?

- (K) †ev†ib (L) †ev†gv_
(M) G†v†U†b (N) Av†q†Wb✓

84| n†v†j†v†Rb †g†j bq †Kv†U?

- (K) F (L) Cl
(M) B ✓ (N) At

85| n†v†j†v†BW Av†b ^Z†i K†i †Kv†U?

- (K) Na (L) Cl ✓
(M) S (N) Cu

86| chvq mvi†Y†Z 18 M†c†i †g†j, †jvi †††Z Ae†v†v Kxi†c?

- (K) K†v†b (L) Zi j
(M) M†vmxq✓ (N) Zi j A_†v†v M†vmxq

87| †b†Pi †Kvb †g†j†U †ev†μq† Ask †bq bv?

- (K) He ✓ (L) Na
(M) Pb (N) Cu

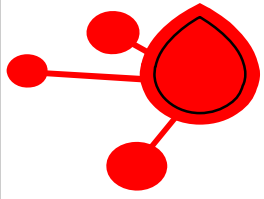
88| †Kvb †g†j†U†i cv†gvY†eK AvKvi †Q†U?

- (K) Si (L) S ✓
(M) Rb (N) P

89| †μc††bi ††† K†c†_ Kq†U B†j†K†v† Av††?

- (K) Av†U✓ (L) `B
(M) P†i (N) Q†

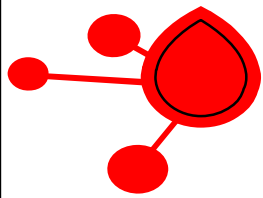
90| Av††bi †hvRbx KZ?



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- (K) 1 (L) 2
(M) 3 (N) 0✓
- 91| $\text{chvq mviYtZ n'vjtRbmgtni Ae}^{-\text{vb}} \text{tKvb Mtc?}$
(K) Mtc 1 (L) Mtc 18
(M) Mtc 17✓ (N) Mtc 10
- 92| $\text{tKvbU g}^{-\text{v}} \text{avZ?}$
(K) Hg (L) Ag ✓
(M) Mg (N) Sn
- 93| $\text{tKvbU g}^{-\text{v}} \text{avZ bq?}$
(K) Cu (L) Ag
(M) Mg ✓ (N) Au
- 94| $\text{wbPi tKvbU } \emptyset\text{-tgšj Ab } ^{\text{Z}} \text{ii Kti?}$
(K) $\text{g}^{-\text{v}} \text{avZ}$ (L) $\text{wb} \otimes \text{q M'vm}$
(M) $\text{n'vjtRb} \checkmark$ (N) $\text{Ae}^{-\text{vši}} \text{tgšj}$
- 95| $\text{wb} \otimes \text{q M'vm chvq mviYi tKvb Mtc Ae}^{-\text{Z?}}$
(K) Mtc-17 (L) Mtc-11
(M) Mtc-2 (N) Mtc-18✓
- 96| $\text{chvq mviYi tKvb chvq GLbI AcY?}$
(K) ZZxq (L) PZ
(M) lō (N) 7g
- 97| $\text{tKvb Mtc } \emptyset\text{-tgšj AY nVb Kti?}$
(K) 8 (L) 16
(M) 17✓ (N) 13
- 98| $\text{chvq mviYi Mtc-17 tZ Ae}^{-\text{Z}} \text{tgšj, tju ntjn}$
(K) $\text{g}^{-\text{v}} \text{avZ}$ (L) $\text{n'vjtRb} \checkmark$
(M) yvi avZ (N) $\text{wb} \otimes \text{q M'vm}$
- 99| $\text{chvq mviYi tKvb Mtc i tgšj mgn BtjKUb Av}^{-\text{vb-c}} \text{vb ev tkqv i i gva}^{\text{tg}} \text{thšM MVb Kti bv?}$
(K) Mtc-1 (L) Mtc-7
(M) Mtc-17 (N) Mtc-18✓
- 100| $3\text{q chvtqi GKU tgšji meeint}^{-\text{kl}^3} \text{t i 3U BtjKUb i tqtQ | tgšjU tKvb Mtc Ae}^{-\text{Z?}}$
(K) Mtc-3 (L) Mtc-10
(M) Mtc-13✓ (N) Mtc-18
- 101| $\text{chvq mviYi mvi}^{\text{th}} \text{N}$
(K) $\text{GKU tgšj Klb Awe} \otimes \text{vi ntqtQ Zv Rv bv hvq |}$
(L) $\text{tKvb thšMi ag mn}^{\text{R}} \text{Rv bv hvq}$
(M) $\text{tKvb tgšji ag mn}^{\text{R}} \text{Rv bv hvq} \checkmark$
(N) $\text{tKvb tgšji c}^{-\text{Z}} \text{cYjx m} \otimes \text{K Rv bv hvq}$
- 102| $\text{mVK } \mu \text{qv kxj Zvi } \mu \text{g tKvbU?}$
(K) $\text{Rb} > \text{Cs} > \text{K} > \text{Na}$
(L) $\text{Cs} > \text{Rb} > \text{K} < \text{Rb} \checkmark$

- (M) $\text{Na} > \text{Cs} > \text{K} > \text{Rb}$
(N) $\text{K} > \text{Na} > \text{Rb} > \text{Cs}$
- 103| $\text{tKvb tgšj, tju a}^{\text{gi}} \text{gta}^{\text{mv}} \text{K}^{\text{jy}} \text{Kiv hvq?}$
(K) tmvWqvq I tKwib (L) $\text{tmvWqvq I A}^{\text{vj}} \text{igv bqvg}$
(M) $\text{tmvWqvq I cUvmqvq} \checkmark$ (N) $\text{tmvWqvq I }^{-\text{v}} \text{Uqvq}$
- 104| $\text{tKvb avZtK Qii }^{-\text{tq}} \text{KvU hvq?}$
(K) Ca (L) Mg
(M) Na ✓ (N) Mn
- 105| $\text{Qii }^{-\text{tq}} \text{KvU hvq tKvb Mtc i avZmgtn?}$
(K) Mtc-1✓ (L) Mtc-2
(M) Mtc-3 (N) Mtc-4
- 106| $\text{chvq mviY m} \otimes \text{K ejv hvq thN}$
(i) $\text{GUtZ 18U Mtc i tqtQ}$
(ii) $\text{GUi ZZxq chvq tgšj } \emptyset \text{iv AcY}$
(iii) $\text{GUi chvq-4 G tgšj AvtQ 18U}$
 wbPi tKvbU mVK?
(K) i l ii (L) i l iii ✓
(M) ii l iii (N) i, ii l iii
- 107| $\text{chvq mviYi }^{\text{eikó}} \text{mgn nt}^{\text{Q}} \text{N}$
(i) $\text{GUtZ 7U chvq I 9U Mtc we}^{-\text{g}} \text{v}$
(ii) $6\delta \text{ I } 7\text{g chvtq } 32\text{U Kti tgšj i tqtQ}$
(iii) $\text{Mtc-3 Mtc t}^{-\text{tK}} \text{Mtc-11 I Gi ga}^{\text{eZx}} \text{tgšj mgn Ae}^{-\text{vši}}$
 tgšj
 wbPi tKvbU mVK?
(K) i l ii (L) i l iii ✓
(M) ii l iii (N) i, ii l iii
- 108| $\text{chvq mviYtZ GKU tgšji Ae}^{-\text{vb}} \text{2q Mtc nq h}^{\text{v}} \text{ZviN}$
(i) $\text{BtjKUb mgn }^{-\text{U}} \text{t i }^{-\text{v}} \text{K}$
(ii) $\text{cvi gYveK msL}^{\text{v}} \text{B nq}$
(iii) $\text{metkl kl}^3 \text{t i }^{-\text{U}} \text{BtjKUb }^{-\text{v}} \text{K}$
 wbPi tKvbU mVK?
(K) i (L) iii ✓
(M) i l ii (N) i l iii
- 109| $\text{GKU tgšji metkl Kyct}^{-\text{7U}} \text{BtjKUb }^{-\text{v}} \text{KtjN}$
(i) $\text{tgšjU i Ae}^{-\text{vb}} \text{Mtc-17 G}$
(ii) tgšjU Zlor FYvZIK
(iii) tgšjU GKU avZ
 wbPi tKvbU mVK?
(K) i l ii ✓ (L) ii l iii
(M) i l iii (N) i, ii l iii



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110| $GK_{U} \uparrow g_{S} \uparrow j \uparrow B \uparrow j K_{U} b \uparrow e b \uparrow v m \uparrow 1s^2 \uparrow 2s^2 \uparrow 2p^2 \uparrow 3s^2 \uparrow 3p^6 \uparrow 3d^{10} \uparrow 4s^2 \uparrow n \uparrow j -$

- (i) $chvq \uparrow m v i \uparrow Y \uparrow Z \uparrow g_{S} \uparrow j \uparrow U i \uparrow A e \uparrow v b \uparrow 4 \uparrow c h v \uparrow q$
- (ii) $chvq \uparrow m v i \uparrow Y \uparrow Z \uparrow g_{S} \uparrow j \uparrow U i \uparrow A e \uparrow v b \uparrow M \uparrow c - 2 \uparrow G$
- (iii) $\uparrow g_{S} \uparrow j \uparrow U i \uparrow t h v R \uparrow Z v = 2$

$\uparrow b \uparrow P i \uparrow t K v b \uparrow U \uparrow m \uparrow V K ?$

- (K) i | ii (L) ii | iii
- (M) i | iii (N) i, ii | iii

111| $GK_{U} \uparrow g_{S} \uparrow j \uparrow B \uparrow j K_{U} b \uparrow e b \uparrow v m \uparrow 1s^2 \uparrow 2s^2 \uparrow 2p^6 \uparrow 3s^2 \uparrow 3p^1 \uparrow c h v q m v i \uparrow Y \uparrow Z \uparrow g_{S} \uparrow j \uparrow U i \uparrow A e \uparrow v b \uparrow N$

- (i) $3q \uparrow c h v q$
- (ii) $M \uparrow c - 3 \uparrow G$
- (iii) $M \uparrow c - 13 \uparrow G$

$\uparrow b \uparrow P i \uparrow t K v b \uparrow U \uparrow m \uparrow V K ?$

- (K) i | ii (L) ii | iii
- (M) i | iii (N) i, ii | iii

112| $GK_{U} \uparrow g_{S} \uparrow j \uparrow B \uparrow j K_{U} b \uparrow e b \uparrow v m \uparrow 1s^2 \uparrow 2s^2 \uparrow 2p^6 \uparrow 3s^2 \uparrow 3p^6 \uparrow 3d^1 \uparrow 4s^2 \uparrow c h v q \uparrow m v i \uparrow Y \uparrow Z \uparrow g_{S} \uparrow j \uparrow U i \uparrow A e \uparrow v b \uparrow N$

- (i) $4 \uparrow c h v q$
- (ii) $M \uparrow c - 2 \uparrow Z$
- (iii) $M \uparrow c - 3 \uparrow Z$

$\uparrow b \uparrow P i \uparrow t K v b \uparrow U \uparrow m \uparrow V K ?$

- (K) i | ii (L) ii | iii
- (M) i | iii (N) i, ii | iii

113| $H, Li, Na, K \uparrow G i v \uparrow m K \uparrow j B \uparrow M \uparrow c - 1 \uparrow G i \uparrow t g_{S} \uparrow j \uparrow N$

- (i) $K \uparrow G i \uparrow A v K v i \uparrow Na \uparrow G i \uparrow t P \uparrow q \uparrow e o$
- (ii) $K \uparrow G i \uparrow A v q b \uparrow K i Y \uparrow e f e \uparrow Li \uparrow G i \uparrow t P \uparrow q \uparrow t e k$
- (iii) $D c \uparrow i v^3 \uparrow t g_{S} \uparrow j \uparrow m g n \uparrow y v i a v Z \uparrow G e s \uparrow G i v \uparrow c \uparrow Z \uparrow t K B \uparrow b i g \uparrow l \uparrow b a$

$M j b v s K \uparrow e i k o$

$\uparrow b \uparrow P i \uparrow t K v b \uparrow U \uparrow m \uparrow V K ?$

- (K) i (L) i | ii ✓
- (M) i | iii (N) i, ii | iii

114| $Na, Mg, Al, Si, P, S \uparrow G i v \uparrow m K \uparrow j B \uparrow 3q \uparrow c h v \uparrow q i \uparrow t g_{S} \uparrow j \uparrow N$

- (i) $Na, Al \uparrow a v Z e \uparrow c K \uparrow Z i$
- (ii) $P, S \uparrow G i \uparrow M j b v s L \uparrow l \uparrow u \uparrow b v s K \uparrow t e k$
- (iii) $Si, P \uparrow n \uparrow j v \uparrow A a v Z$

$\uparrow b \uparrow P i \uparrow t K v b \uparrow U \uparrow m \uparrow V K ?$

- (K) i (L) ii ✓
- (M) i | iii (N) i, ii | iii

115| $chvq \uparrow m v i \uparrow Y i \uparrow G B \uparrow c h v \uparrow q \uparrow h Z B \uparrow W b \uparrow \uparrow t K \uparrow h v \uparrow l q v \uparrow h v q \uparrow Z Z B \uparrow t g_{S} \uparrow j \uparrow m g \uparrow n \uparrow$

(i) $c i g v Y i \uparrow A v K v i \uparrow n v m \uparrow c v q$

(ii) $a v Z e \uparrow a g \uparrow n v m \uparrow c v q$

(iii) $a v Z e \uparrow a g \uparrow e i \times \uparrow c v q$

$\uparrow b \uparrow P i \uparrow t K v b \uparrow U \uparrow m \uparrow V K ?$

- (K) i | ii ✓ (L) i | iii
- (M) ii | iii (N) i, ii | iii

116| $M \uparrow c \uparrow 17 \uparrow t Z \uparrow A e \uparrow \uparrow Z \uparrow t g_{S} \uparrow j \uparrow m g n \uparrow N$

- (i) $m g \uparrow \uparrow i \uparrow c w b \uparrow Z \uparrow j e Y \uparrow n \uparrow t m \uparrow t e \uparrow \uparrow v \uparrow K$
- (ii) $\uparrow b \uparrow R i v \uparrow \uparrow t g_{S} \uparrow j \uparrow A Y \uparrow \uparrow Z i \uparrow K \uparrow i$
- (iii) $B \uparrow j K_{U} b \uparrow M n \uparrow Y i \uparrow g v a \uparrow t g \uparrow n \uparrow v j v B W \uparrow \uparrow Z i \uparrow K \uparrow i$

$\uparrow b \uparrow P i \uparrow t K v b \uparrow U \uparrow m \uparrow V K ?$

- (K) i | ii (L) i | iii ✓
- (M) ii | iii (N) i, ii | iii

117|

Mg	Al	X	P	S	Y
----	----	---	---	---	---

$chvq \uparrow U \uparrow Z N$

- (i) $Y \uparrow t g_{S} \uparrow j \uparrow U \uparrow A v K v \uparrow i \uparrow m e \uparrow t c \uparrow y v \uparrow q \uparrow U$
- (ii) $X \uparrow l \uparrow Y \uparrow \emptyset v i v \uparrow M v Z \uparrow t h \uparrow M v i \uparrow m s \uparrow t K Z \uparrow X \uparrow Y_4$
- (iii) $Y \uparrow t g_{S} \uparrow j \uparrow U i \uparrow A \uparrow v B W \uparrow A a \uparrow q$

$\uparrow b \uparrow P i \uparrow t K v b \uparrow U \uparrow m \uparrow V K ?$

- (K) i | ii (L) i | iii
- (M) ii | iii (N) i, ii | iii ✓

118| $Na \uparrow G e s \uparrow K \uparrow D f \uparrow q i \uparrow t y \uparrow \uparrow c \uparrow t h v R \uparrow N$

- (i) $G K B \uparrow M \uparrow c \uparrow A e \uparrow \uparrow Z$
- (ii) $D f \uparrow q B \uparrow a v Z e \uparrow c \uparrow \uparrow v \uparrow$
- (iii) $D f \uparrow q i \uparrow y v i \uparrow a v Z$

$\uparrow b \uparrow P i \uparrow t K v b \uparrow U \uparrow m \uparrow V K ?$

- (K) i | ii (L) ii | iii
- (M) i, ii | iii ✓ (N) i | iii

119| $y v i \uparrow a v Z m g n \uparrow N$

- (i) $chvq \uparrow m v i \uparrow Y i \uparrow M \uparrow c - 1 \uparrow G \uparrow A e \uparrow \uparrow Z$
- (ii) $c \uparrow Z \uparrow t K B \uparrow c w b i \uparrow (H_2 O) \uparrow m v \uparrow \uparrow e i \uparrow \mu q v \uparrow K \uparrow i \uparrow n v B \uparrow W \uparrow R b \uparrow M \uparrow v m$
- (iii) $(H_2) \uparrow l \uparrow y v i \uparrow \uparrow e Y \uparrow \uparrow Z i \uparrow K \uparrow i$

$\uparrow b \uparrow P i \uparrow t K v b \uparrow U \uparrow m \uparrow V K ?$

- (K) i | ii ✓ (L) ii | iii
- (M) i | iii (N) i, ii | iii

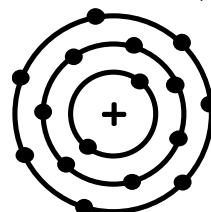
120| $g r \uparrow y v i \uparrow a v Z m g n \uparrow N$

- (i) $chvq \uparrow m v i \uparrow Y i \uparrow M \uparrow d - 2 \uparrow t Z \uparrow A e \uparrow \uparrow Z$
- (ii) $t h \uparrow S M \uparrow n \uparrow t m \uparrow t e \uparrow g v \uparrow U \uparrow Z \uparrow \uparrow v \uparrow K$

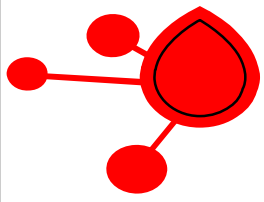


(L) ii | iii ✓

WbꞑPi ꞑPîU jÿ Ki Ges 129 | 130 bs cꞑki DËi `vIt



(i) $X - G_i \text{ c v i g v Y w e K A v K v i Q } \dagger _ \ddagger K \text{ e o}$



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(ii) Q Atcÿv Z-Gi thvRbx B†jKUb msL˘v teik

(iii) Z Gi avZe ag X-Gi t†q teik

wb†Pi tKvbU mVK?

(K) i l ii✓

(L) ii l iii

(M) i l iii

(N) i, ii l iii

wb†P³ P†i Av†jK 133-134 bs c†ki DËi ˘vlt

H			He
Li	Be		F
Na	Mg		Cl
			Ar

133|

(i) Cl-Gi AvKvi Na Gi t†q teik

(ii) Cl-Gi AvqibKiY wefe Na Gi t†q teik

(iii) Cl-Gi B†jKUb Avm³ Na Gi t†q teik

wb†Pi tKvbU mVK?

(K) i l ii

(L) ii l iii✓

(M) i l iii

(N) i, ii l iii

134| chvq mviY†Z ÒNeô Gi chvq l Mæc bvaivi KZ?

(K) chvq-2 l Mæc-2

(L) chvq-4 l Mæc-2

(M) chvq-2 l Mæc-18✓

(N) chvq-18 l Mæc-2

chvq mviYi GKU L, Z t†qv nj Gi mvi†h 135-137 bs c†ki DËi ˘vlt

1	2	13	14	15	16	17	18
11Na	Mg		Al	X	P	A	Cl
							Ar

135| tKvb tg†jUi cvigvYek AvKvi me†P†q eo?

(K) Na✓

(L) Ar

(M) Al

(N) X

136| D†jLZ msL˘v, t†jv h˘ tg†j, t†jvi cvigvYek msL˘v wb†k K†i Zv†j X tg†jUi Kx?

(K) K˘vjmqvg

(L) m†jKb✓

(M) mv†dvi

(N) tev†gb

137| GB L†ÊZvskU chvq mviY tKvb chv†qi As†k?

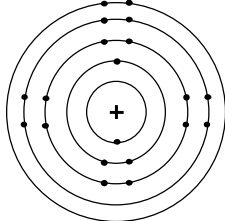
(K) c_g chvq

(L) 2q chvq

(M) 3q chvq✓

(N) 4_ chvq

wb†Pi P†iU jÿ K†iv Ges 138-139 bs c†ki DËi ˘vlt



138| P†i c˘kZ B†jKUb web˘vm tKvb tg†ji?

(K) Na

(L) Al

(M) K

(N) Ca✓

139| P†i tg†ji e†nt˘ t†ji B†jKUbZ˘m Kivi d†jÑ

(i) bKU˘ b†q M˘†mi B†jKUb web˘vm jvf Ki†e

(ii) cigvYi AvKvi c†e Zjbvq e†x cv†e

(iii) AvqibK eÜb MV†b AskM†y Ki†Z cv†e

wb†Pi tKvbU mVK?

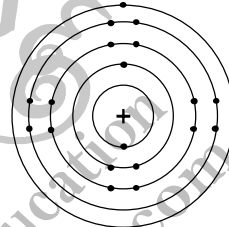
(K) i l ii

(L) ii l iii

(M) i l iii✓

(N) i, ii l iii

wb†Pi P†iU jÿ K†iv Ges 140 l 141 bs c†ki DËi ˘vlt



140| P†i tg†jUi ˘ekó˘ tKvbU?

(K) mg†hRx eÜb MVb K†i

(L) m†R B†jKUb Z˘m K†i✓

(M) ZjbvgjKfv†e Kg m†µq

(N) chvq mviYi 2q Mæc Ae˘Z

141| wb†Pi tg†jUi i†mvqibK ag t†mWqv†gi cvq Abi†c KviYÑ

(i) chvq mviY†Z GKB Mæc Ae˘vb

(ii) mee†nt˘†i B†jKUb msL˘v GKB

(iii) chvq mviY†Z GKB chv†q Ae˘vb

wb†Pi tKvbU mVK?

(K) i l ii✓

(L) i l iii

(M) ii l iii

(N) i, ii l iii

wb†Pi Ab†Q˘U jÿ Ki Ges 142-145 bs c†ki DËi ˘vlt

GKU tg†ji me†kl ˘U K†c†i B†jKUb web˘vmt

$ms^2np^6nd^{10}(n+1)s^2$

142| Dc†iv³ tg†jUi chvq mviYi tKvb Mæc Ae˘Z?

(K) Mæc-2

(L) Mæc-10

(M) Mæc-12✓

(N) Mæc-18

143| $n = 3$ n†j tg†jUi chvq mviYi tKvb chv†q Ae˘Z?

(K) 7g chv†q

(L) 3q chv†q

(M) 4_ chv†q✓

(N) 6ð chv†q

144| $n = 3$ n†j tg†jUiÑ

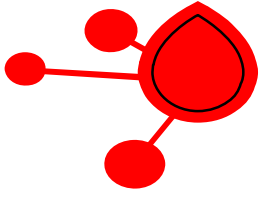
(i) cY†½ B†jKUb web˘vm : $1s^2 2s^2 2p^6 3s^2 3p^6$

$3d^{10} 4s^2$

(ii) cvt msL˘v 30

(iii) thvR˘Zv B†jKUb = 2

wb†Pi tKvbU mVK?



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(K) i l ii (L) i l iii (M) ii l iii (N) i, ii l iii✓

145| $n = 3$ n+j tgđjUiÑ

(i) cvigvYieK msL'v 30

(ii) bvg = RSK

(iii) thvR'Zv B+j KUb = 3

wb+Pi tKvbU mVVK?

(K) i l ii✓

(L) i l iii

(M) ii l iii

(N) i, ii l iii

cAg Aa'qt i mVqBk eUb

1| B+qi AaK cigvY 'tq MvZ tgđjK AY MvB K+i bx+Pi tKvb tgđj?

(K) wB'q M'vmgn

(L) bvB+U+Rb

(M) n'v+jvRbmg

(N) mvj dvi✓

2| KqU cigvY wB+q dmdim AY MvZ?

(K) 2

(L) 3

(M) 4✓

(N) 8

3| tgđjK M'v+mi AYmg n vaviYZ KZ cigvY 'g+j nqÑ

(K) 1U

(L) 2U✓

(M) 3U

(N) 4U

4| mvjd+i i GKU AY+Z KZU mvjdvi cigvY 'v+K?

(K) 2U

(L) 4U

(M) 6U

(N) 8U✓

5| tKvb k³-i 'ØZ ev AóK cY nq?

(K) c_g

(L) ØZxq

(M) ZZxq

(N) tkl✓

6| 'mCu+bi tkl Kyc+_ KqU B+j KUb Av+Q?

(K) AvU (8) ✓

(L) 'B (2)

(M) Pvi (4)

(N) Qq (6)

7| 'mCu+bi GKU cigvY+Z KqU B+j KUb Av+Q?

(K) 54

(L) 36✓

(M) 86

(N) 18

8| 'mCuB Gi ZZxq k³-i B+j KUb msL'v n+QÑ

(K) 5U

(L) 4U

(M) 18U✓

(N) 8U

9| 2,8,18,8 tKvbU B+j KUb wB'vm?

(K) AvMb

(L) 'mCu+bi✓

(M) wB'vm

(N) tiWb

10| cigvYi tkl Kyc+_ B+j KUb K e+j?

(K) thvRbx B+j KUb✓

(L) AvMb

(M) eÜb

(N) thvRbx

11| g'vM+bi kqvgi thvR'Zv B+j KUb msL'v KZ?

(K) 1

(L) 3

(M) 2✓

(N) 5

12| Al³⁺-G me+kl 't KqU B+j KUb Av+Q?

(K) 3

(L) 8✓

(M) 5

(N) 6

13| cvigvYieK msL'v 20 wB'ko tgđj i thvR'Zv B+j KUb KZ?

(K) 1

(L) 2✓

(M) 3

(N) 4

14| i mVqBk wB'vm Ask MnY K+i tKvbU?

(K) wB'vm

(L) wBq

(M) AvMb

(N) K'v j wB'vm✓

15| 'mCu+bi cvigvYieK msL'v KZ?

(K) 36✓

(L) 54

(M) 18

(N) 86

16| tKvb tgđj wB'vm Ask tBq bv?

(K) Na

(L) Pb

(M) He ✓

(N) Cu

17| tKvb thSM MvBk+j AóK Aa'vY 'v+K?

(K) NH₃

(L) PH₃

(M) H₂S

(N) BeCl₂✓

18| GKU nB'W+Rb cigvY 't K GKU B+j KUb mii+q wB+j Kx Aa'vY 'v+K?

(K) GKU wB'DUb

(L) GKU tcvU+bi✓

(M) GKU wB'DU+bi

(N) wB'U+bi

19| ¹⁴N Gi cavb k³-i KqU?

(K) 1U

(L) 2U✓

(M) 3U

(N) 4U

20| bx+Pi tKvb tgđjU thSM MvBk+j 'B+qi (duplet) wBqk AbmiY K+i?

(K) Ca

(L) Mg

(M) Li ✓

(N) Na

21| thSM MvBk+j bx+Pi tKvb tgđjU AóK+i wBqk AbmiY K+i bv?

(K) Ca

(L) Mg

(M) H ✓

(N) Na

22| wB+Pi tKvb tgđjU wB'vm Ask tBq bv?

(K) He ✓

(L) Na

(M) Pb

(N) Cu

23| B+j KUb MnY K+i AóK cY K+i tKvbU?

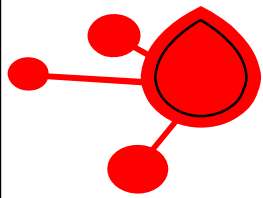
(K) Li

(L) Na

(M) Ca

(N) O✓

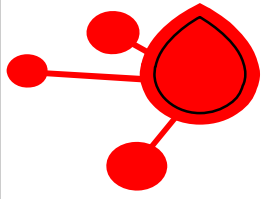
24| ZZxq k³-i AvU B+j KUb 'v+K tKvb cigvYi?



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- (K) Na (L) Mg
(M) Ca ✓ (N) Ne
- 25| $\text{ivmvqibK eÜtb AskMnY K\ddot{i} \uparrow Kvb B\ddot{j} KUb?}$
(K) $\text{thvR}^{\text{Zv}} B\ddot{j} KUb\checkmark$ (L) $\text{me B\ddot{j} KUb}$
(M) $\text{c_g kll}^3 \text{ } \ddot{i} B\ddot{j} KUb$ (N) $2q kll^3 \text{ } \ddot{i} B\ddot{j} KUb$
- 26| $\text{ZZxq kll}^3 \text{ } \ddot{i} m\ddot{e}v^{\text{P}} B\ddot{j} KUb \text{ avY } \ddot{y}gZv \text{ KZ?}$
(K) 8 (L) 18✓
(M) 32 (N) 33
- 27| $4_ \ddot{i} m\ddot{e}v^{\text{P}} B\ddot{j} KUb \text{ avY } \ddot{y}gZv\checkmark$
(K) 2 (L) 8
(M) 18 (N) 32✓
- 28| $\text{ivmvqibK eÜb Kx ai\ddot{b}i ej?}$
(K) $\text{AvKIY ej}\checkmark$ (L) $\text{ibi\ddot{c}y ej}$
(M) ieKIY ej (N) $\text{mskx}^3 \text{ ej}$
- 29| $\text{PvR h}^3 \text{ cigvY ev cigvY, }^{\text{Q}}\text{K Kx ejv nq?}$
(K) $B\ddot{j} KUb$ (L) $\text{t\ddot{c}vUb}$
(M) avZ (N) $\text{Avqb}\checkmark$
- 30| $\text{FYvZiK Avavbh}^3 \text{ cigvY\ddot{K} Kx ej?}$
(K) K^{vUvqb} (L) $\text{A}^{\text{vUvqb}}\checkmark$
(M) Dfagx (N) $\text{ibi\ddot{c}y}$
- 31| $\text{M\ddot{c}-16 G Ae\ddot{i}^{\text{Z}} X GK\ddot{i}U cigvY\ddot{i} \text{ } \ddot{i}b\ddot{P}i \uparrow Kvb\ddot{i}U Gi m\ddot{i}VK \text{ Avqb?}$
(K) X^+ (L) X^{2+}
(M) X^- (N) $X^{-2}\checkmark$
- 32| $^{35}_{17}\text{Cl cigvY\ddot{i}U } \ddot{i}^{\text{Zkxj}} n^{\text{Z}} Kq\ddot{i}U B\ddot{j} KUb \text{ c\ddot{q}vRb?}$
(K) $\text{GK}\checkmark$ (L) `B
(M) Zb (N) Pvi
- 33| $\text{tKvb\ddot{i}U AvqibK th\ddot{S}M?}$
(K) CCl_4 (L) HCl
(M) $\text{MgCl}_2 \checkmark$ (N) CO_2
- 34| $\text{g}^{\text{vM}\ddot{b}m\ddot{q}v} \text{ A } \cdot \text{vB}^{\text{W}} (\text{MgO}) \text{ Kx ai\ddot{b}i eÜb ie}^{\text{`g}v\text{b?}}$
(K) $\text{AvqibK}\checkmark$ (L) mgthvRx
(M) avZe (N) $\text{nvB}^{\text{W}}\text{Rb}$
- 35| $\text{AvqibK I mgthvRx Dfq th\ddot{S}M MVb K\ddot{i} \uparrow Kvb\ddot{i}U?}$
(K) Na (L) Al ✓
(M) K (N) Mg
- 36| $\text{bx\ddot{P}i \uparrow Kvb th\ddot{S}M\ddot{i}U MVbKv\ddot{j} c\ddot{i}ZiU cigvYB AvM\ddot{b}i B\ddot{j} KUb \text{ web}^{\text{`vm}} \text{ jvf K\ddot{i}?}$
(K) KF (L) CaS ✓
(M) MgO (N) NaCl
- 37| $\text{eÜb MV\ddot{b}i mgq K \uparrow Kvb } \ddot{i}b\ddot{i}^{\text{Q}} \text{ M}^{\text{v}\ddot{f}mi} B\ddot{j} KUb \text{ web}^{\text{`vm}} \text{ jvf K\ddot{i}?}$

- (K) µcÜb (L) tRbb
(M) $\text{AvMb}\checkmark$ (N) tiWb
- 38| $\text{avZi mee\ddot{i}n}^{\text{`}} \text{ K\ddot{y}c\ddot{t}}_ B\ddot{j} KUb \text{ msL}^{\text{`v}} \text{ KZ?}$
(K) 5-8iU (L) 7-8iU
(M) 6-8iU (N) 1-3iU✓
- 39| $\text{tmvWqv\ddot{g}i \uparrow kl K\ddot{y}c\ddot{t}}_ B\ddot{j} KUb\ddot{i} \text{ msL}^{\text{`v}} \text{ nj\ddot{N}}$
(K) 1iU✓ (L) 3iU
(M) 4iU (N) 6iU
- 40| $\text{ivmvqibK eÜb ejv nq-}$
(K) $\text{th kll}^3 \text{ i ej } \text{c}^{\text{`v}} \text{ mgn ci}^{\text{`}} \ddot{u} \ddot{i} i \text{ mv\ddot{t}}_ \text{ h}^3 \text{ } \text{v\ddot{t}K|}$
(L) $\text{th kll}^3 \text{ i ej } \text{avZmgn ci}^{\text{`}} \ddot{u} \ddot{i} i \text{ mv\ddot{t}}_ \text{ h}^3 \text{ } \text{v\ddot{t}K|}$
(M) $\text{th kll}^3 \text{ i ej } \text{t\ddot{c}vUb I } \ddot{i}bDÜb \text{ ci}^{\text{`}} \ddot{u} \ddot{i} i \text{ mv\ddot{t}}_ \text{ h}^3 \text{ } \text{v\ddot{t}K|}$
(N) $\text{th kll}^3 \text{ i ej } \text{AY\ddot{Z} cigvY, } \ddot{t}jv \text{ ci}^{\text{`}} \ddot{u} \ddot{i} i \text{ mv\ddot{t}}_ \text{ h}^3 \text{ } \text{v\ddot{t}K|}\checkmark$
- 41| $\text{cigvY } \ddot{t}_ \ddot{t}K B\ddot{j} KUb \text{ m\ddot{i}tq } \ddot{i}b\ddot{j} \text{ } \ddot{i}K \text{ nq?}$
(K) $\text{AYi m\ddot{i}o nq}$ (L) $\text{ibD\ddot{i}Kqvi}$
(M) $\text{FYvZiK Avqb m\ddot{i}o nq}$ (N) $\text{abvZiK Avqb m\ddot{i}o nq}\checkmark$
- 42| $\text{tmvWqv\ddot{g} (Na}^+ \text{) Avq\ddot{b} i\ddot{t}q\ddot{Q}\ddot{N}}$
(K) 10iU $B\ddot{j} KUb$ I 11iU $\text{t\ddot{c}vUb}\checkmark$
(L) 11iU $B\ddot{j} KUb$ I 10iU $\text{t\ddot{c}vUb}$
(M) 11iU $B\ddot{j} KUb$ I 12iU $\text{t\ddot{c}vUb}$
(N) 12iU $B\ddot{j} KUb$ I 11iU $\text{t\ddot{c}vUb}$
- 43| $\text{tKvb\ddot{i}BW (Cl}^- \text{) Avq\ddot{b} i\ddot{t}q\ddot{Q}\ddot{N}}$
(K) 17iU $\text{t\ddot{c}vUb}$ I 17iU $B\ddot{j} KUb$
(L) 18iU $\text{t\ddot{c}vUb}$ I 18iU $B\ddot{j} KUb$
(M) 18iU $\text{t\ddot{c}vUb}$ I 17iU $B\ddot{j} KUb$
(N) 17iU $\text{t\ddot{c}vUb}$ I 18iU $B\ddot{j} KUb\checkmark$
- 44| $\text{thvRbx tmj ejv nq-}$
(K) $\text{c_g K\ddot{y}c_}\ddot{t}K$ (L) $\text{ØZ\ddot{i}q K\ddot{y}c_}\ddot{t}K$
(M) $\text{ZZxq K\ddot{y}c_}\ddot{t}K$ (N) $\text{tkl K\ddot{y}c_}\ddot{t}K\checkmark$
- 45| $\text{g}^{\text{vM}\ddot{b}m\ddot{q}v} \text{ I } \text{tKvb\ddot{i}b\ddot{i} } \text{ie}^{\text{`m}u\ddot{q}v} \text{ tKvb\ddot{i}b B\ddot{j} KUb Kx K\ddot{i}?}$
(K) tkqvi (L) $\text{MnY}\checkmark$
(M) $\text{Z}^{\text{`vM}}$ (N) $\text{Ac\ddot{i}e\ddot{i}ZZ_}\ddot{v\ddot{t}K}$
- 46| $\text{K}^{\text{`v}j\ddot{i}m\ddot{q}v} \text{ tKvb\ddot{i}B\ddot{W}i ms\ddot{t}KZ Kx?}$
(K) CaCl_3 (L) $\text{CaCl}_2 \checkmark$
(M) CaCl (N) CaCl_4
- 47| $\text{tKvb\ddot{i}U mgthvRx th\ddot{S}M bq?}$
(K) $\text{LiCl}\checkmark$ (L) HCl
(M) PCl_3 (N) Cl_2
- 48| $\text{O}^{2-} \text{ Gi B\ddot{j} KUb } \text{web}^{\text{`vm}} \text{ tKvb\ddot{i}U?}$
(K) 2,6 (L) 2,4
(M) 2,8✓ (N) 2,8,8



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49| $\uparrow Kvb \downarrow U$ $Avq \downarrow bK$ $th\dot{S}M?$

(K) CO_2 (L) H_2O
(M) NO_2 (N) $CaO\checkmark$

50| $avZ-AavZ$ $ig\ddot{j}$ $mvaviYZ$ MVZ $nq\ddot{N}$

(K) $Avq \downarrow bK$ $e\ddot{U}b\checkmark$ (L) $mg\ddot{h}vRx$ $e\ddot{U}b$
(M) $avZe$ $e\ddot{U}b$ (N) $ivmvq \downarrow bK$ $e\ddot{U}b$

51| $nvB\ddot{W}\ddot{v}Rb$ $cigvY$ $\downarrow b\ddot{P}i$ $\uparrow Kvb$ $\uparrow g\ddot{j}$ $B\ddot{j}KUb$ $web\ddot{v}v\ddot{m}i$ $b\ddot{v}q$
 $B\ddot{j}KUb$ $web\ddot{v}m$ $avi\ddot{Y}i$ $\ddot{y}gZv$ $Av\ddot{Q}$

(K) $\downarrow nvj$ $qvq\checkmark$ (L) $\downarrow bqb$
(M) $AvMb$ (N) $\downarrow \mu cUb$

52| $mg\ddot{h}vRx$ $th\dot{S}M$ $\uparrow Kvb \downarrow U?$

(K) $PCl_3\checkmark$ (L) $AlCl_3$
(M) $MgCl_2$ (N) $NaCl$

53| $\downarrow b\ddot{P}i$ $\uparrow Kvb$ $\uparrow g\ddot{j}$ $\downarrow U$ $\ddot{r}agv\ddot{I}$ $mg\ddot{h}vRx$ $th\dot{S}M$ MVb $K\ddot{i}?$

(K) $\downarrow tmvWqvq$ (L) $g\ddot{v}m\ddot{b}imqvq$
(M) $Av\cdot\ddot{R}b$ (N) $Kieb\checkmark$

54| $Av\cdot\ddot{R}\ddot{b}i$ $\uparrow hvR\ddot{Z}v$ $\ddot{v}i$ $B\ddot{j}KUb$ $msL\ddot{v}$ $KZ?$

(K) 2 (L) 6 $\checkmark$
(M) 4 (N) 8

55| N Gi $\uparrow hvR\ddot{Z}v$ $B\ddot{j}KUb$ $KZ?$

(K) 2 (L) 3 (M) 4 (N) 5 $\checkmark$

56| $c \downarrow b \downarrow i$ $GK \downarrow U$ $AY \ddot{Z}$ $Av\cdot\ddot{R}\ddot{b}i$ $Kq \downarrow U$ $\downarrow btm\ddot{v}$ $B\ddot{j}KUb$ $\uparrow Rv \downarrow$
 $Av\ddot{Q}?$

(K) 4 (L) 3 (M) 2 $\checkmark$ (N) 1

57| $mg\ddot{h}vRx$ $e\ddot{U}b$ $m \downarrow o \downarrow i$ mgq $c \downarrow Z \downarrow U$ $b \downarrow v \ddot{B} \downarrow v \ddot{R}b$ $cigvYi$ KZ $\ddot{v}j$
 $B\ddot{j}KUb$ Ask $tbq?$

(K) 2 $\downarrow U$ (L) 3 $\downarrow U\checkmark$
(M) 4 $\downarrow U$ (N) 5 $\downarrow U$

58| $mg\ddot{h}vRx$ $e\ddot{U}b$ $m \downarrow o \downarrow i$ mgq $\uparrow Kvb$ $cigvY \downarrow U$ $\downarrow Zb \downarrow U$ $B\ddot{j}KUb$ Ask
 $tbq?$

(K) $\downarrow nvj$ qvq (L) $b \downarrow v \ddot{B} \downarrow v \ddot{R}b\checkmark$
(M) $nvB\ddot{W}\ddot{v}Rb$ (N) $\downarrow tmvWqvq$

59| $A\ddot{v}\ddot{g}v \downarrow bqv$ AY $MV\ddot{b}$ $b \downarrow v \ddot{B} \downarrow v \ddot{R}b \downarrow i$ $Kq \downarrow U$ g^3 $\ddot{R}vov$ $B\ddot{j}KUb$
 $Av\ddot{Q}?$

(K) 1 $\downarrow U\checkmark$ (L) 2 $\downarrow U$
(M) 3 $\downarrow U$ (N) 4 $\downarrow U$

60| PH_3 $th\dot{S}M$ $dmdim-G$ $Kq \downarrow U$ g^3 $\ddot{R}vov$ $B\ddot{j}KUb$ $we\ddot{v}g \downarrow v?$

(K) 1 $\checkmark$ (L) 2
(M) 3 (N) 4

61| $GK \downarrow U$ $Av\cdot\ddot{R}b$ $B\ddot{j}KUb$ $\uparrow kv \downarrow i$ $K\ddot{Z} \downarrow U$ $nvB\ddot{W}\ddot{v}R\ddot{b}i$ $mv\ddot{v}?$

(K) 1 $\downarrow U$ (L) 3 $\downarrow U$
(M) 2 $\downarrow U\checkmark$ (N) 5 $\downarrow U$

62| 180° $\uparrow Kvb$ MVb $K\ddot{i}$ $\downarrow b\ddot{P}i$ $\uparrow Kvb$ $th\dot{S}M$ $MVb?$

(K) $CO_2\checkmark$ (L) CCl_4
(M) NH_3 (N) CH_4

63| $KveY$ $WbA\cdot$ vBW AYi $AvK \downarrow Z$ $\uparrow Kvb \downarrow U?$

(K) $m \downarrow j$ $\ddot{v}i \downarrow LK\checkmark$ (L) $\downarrow c \downarrow i \downarrow v \downarrow gWxq$
(M) $\uparrow K\ddot{S} \downarrow YK$ (N) $PZ\ddot{v}j$ $Kxq\checkmark$

64| $ig\ddot{j}$ $_b$ (CH_4) AYi $AvK \downarrow Z$ $\uparrow Kgb?$

(K) $m \downarrow j$ $\ddot{v}i \downarrow LK$ (L) $\downarrow c \downarrow i \downarrow v \downarrow gWxq$
(M) $\uparrow K\ddot{S} \downarrow YK$ (N) $PZ\ddot{v}j$ $Kxq\checkmark$

65| $c \downarrow b \downarrow i$ AYi $AvK \downarrow Z\ddot{N}$

(K) $m \downarrow j$ $\ddot{v}i \downarrow LK$ (L) $\downarrow c \downarrow i \downarrow v \downarrow gWxq$
(M) $\uparrow K\ddot{S} \downarrow YK\checkmark$ (N) $PZ\ddot{v}j$ Kxq

66| $\uparrow Kvb$ AYi $AvK \downarrow Z$ $\downarrow c \downarrow i \downarrow v \downarrow g\ddot{W}i$ $b\ddot{v}q?$

(K) CO_2 (L) H_2O
(M) CCl_4 (N) $NH_3\checkmark$

67| $f\ddot{v}bWvi$ $lqvjm$ Ki^3 $\ddot{v}iv$ $Avex\ddot{v}$ K $b\ddot{v}Pi$ $\uparrow Kvb \downarrow U?$

(K) $H_2O\checkmark$ (L) $NaCl$
(M) MgO (N) $MgCl_2$

68| $mvaviY$ $Zvcg \downarrow vq$ $t(ev \downarrow b \downarrow v Zvcg \downarrow vq)$ $\uparrow Kvb \downarrow U$ $K \downarrow v \downarrow b$ $Ae\ddot{v}q$
 $\ddot{v}K?$

(K) NH_3 (L) Cl_2
(M) CH_4 (N) $I_2\checkmark$

69| $\downarrow Pbi$ $AvY \downarrow eK$ $ms\ddot{K}Z$ $\uparrow Kvb \downarrow U?$

(K) $C_6H_{22}O_6$ (L) $C_6H_{22}O_{11}$
(M) $C_6H_{12}O_6$ (N) $C_{12}H_{22}O_{11}\checkmark$

70| $GK \downarrow U$ $Av\cdot\ddot{R}b$ $AY\ddot{Z}$ $\ddot{v}i$ $Av\cdot\ddot{R}b$ $cigvY$ $\uparrow Kvb$ $e\ddot{U}b \downarrow i$
 $gva\ddot{v}g$ $Avex\ddot{v}$ $K?$

(K) $Avq \downarrow bK$ $e\ddot{U}b$ (L) $mg\ddot{h}vRx$ $e\ddot{U}b\checkmark$
(M) $avZe$ $e\ddot{U}b$ (N) $ivmvq \downarrow bK$ $e\ddot{U}b$

71| $Avq \downarrow bK$ $th\dot{S}M$ i D^P $Mjbs\ddot{K}i$ $KviY$ $iK?$

(K) $\ddot{v}bv\ddot{v}i$ ev $\ddot{v}iUKvi$ $Ae\ddot{v}i$ $Rb\ddot{v}$
(L) $Avqbmgn$ i $weKIY$ $teik$ $e\ddot{j}$
(M) $weCixZ$ $Avav\ddot{b}i$ $AvKIY\ddot{K}$ $AvZ\mu g$ $Ki\ddot{Z}$ nq $e\ddot{j}$ $\checkmark$
(N) $Avqb$ $PjvP\ddot{j}$ $m\ddot{y}g$ $e\ddot{j}$

72| $ig\ddot{j}$ $_b$ (CH_4) $AY\ddot{Z}$ g^3 $\ddot{R}vov$ $B\ddot{j}KUb$ $\ddot{v}K\ddot{N}$

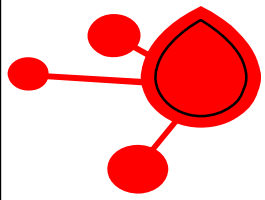
(K) 1 $\downarrow U$ (L) 4 $\downarrow U$
(M) 2 $\downarrow U$ (N) $b \downarrow v\checkmark$

73| $mg\ddot{h}vRx$ $th\dot{S}M$ K $ev\ddot{v}i$ $c \downarrow i \downarrow YZ$ $Kivi$ mgq $\uparrow Kvb$ $e\ddot{U}b$ $\downarrow Qb$ $nq?$

(K) $Wb\ddot{v}cvj$ $e\ddot{U}b$ (L) $f\ddot{v}bWvi$ $lqvjm$ $e\ddot{U}b\checkmark$
(M) $mg\ddot{h}vRx$ $c \downarrow v$ $e\ddot{U}b$ (N) $mg\ddot{h}vRx$ $imMgv$ $e\ddot{U}b$

74| $mg\ddot{h}vRx$ $th\dot{S}M$ KZ $cKvi?$

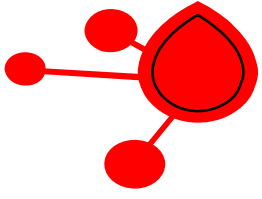
(K) 1 (L) 2 $\checkmark$



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- (M) 3iU✓ (N) 4iU
- 99| avZe eÜb Kfvte mro nq?
(K) B+jKUb tkqv+i i gva'tg
(L) B+jKUb Av`vb-c`v'bi gva'tg
(M) g³ B+jKU+bi gva'tg✓
(N) cvigvYieK web`v'mi gva'tg
- 100| avZe eÜb mro i gj KviYÑ
(K) g³ B+jKUb Av`vb-c`vb(L) B+jKUb tkqvi
(M) g³ B+jKUb✓ (N) bDikqvi weµqv
- 101| avZ, wj G+Zv fv+jv we`r ciienvx tkb?
(K) avZmgn Kivb etj
(L) avZ+K avZiK Avavbiewkó Avqb _v+K etj
(M) avZ+K weg³ B+jKUb _vKvi KviY✓
(N) avZmgn AvqibK thSM MVb K+i etj
- 102| avZ, wj we`r ciienvx KviYÑ
(K) avZmgn Le Kivb
(L) avZ+K FYvZiK Avavbiewkó avZe Avqb _v+K
(M) avZ+K g³ B+jKUb _v+K ✓
(N) avZmgn AvqibK thSM MVb K+i
- 103| KveY cigvY KqU B+jKUb tkqvi K+i?
(K) PviU✓ (L) `iU
(M) iZbiU (N) GKU
- 104| t+jv Kivb Ae`vZi we`r ciienvx Ki+Z cv+i tkb?
(K) AvqibK eÜ+bi Rb` (L) mgthvRx eÜ+bi Rb`
(M) avZe eÜ+bi Rb`✓ (N) mibtek mgthvRx eÜ+bi Rb`
- 105| mAviYkxj g³ B+jKUb cvIqv hq tkvbiU+Z?
(K) NaCl (L) Cu Zvi✓
(M) HCl (N) MgCl₂
- 106| tg+jj i thvRbx B+jµUb X n+j thvRbx KZ?
(K) X (L) 8 - X
(M) X - 8 (N) X A_{ev} 8 - X ✓
- 107| tg+jj i tkl Kyc+ X iU (X < 3) B+jKUb AvQ Gi thvRbx KZ?
(K) X ✓ (L) 8 - X
(M) X - 8 (N) X A_{ev} 8 - X
- 108| g`vM+bi mqv g avZiÑ
(i) B+jKUb web`vm 1s² 2s² 2p⁶ 3s²
(ii) thvR`Zv B+jKUb 2
(iii) thvRbx 2
wb+Pi tkvbiU mivK?
(K) i i ii (L) i i iii
(M) ii i iii (N) i, ii i iii✓

- 109| GKU tg+jj j cvigvYieK msL`v 17; GB tg+jj i t+y+I-
(i) B+jKUb web`vm 1s² 2s² 2p⁶ 3s² 3p⁵
(ii) thvR`Zv B+jKUb 7
(iii) thvRbx 7
wb+Pi tkvbiU mivK?
(K) i i ii✓ (L) i i iii
(M) ii i iii (N) i, ii i iii
- 110| Ne, Ar M`vm cKiZ+ZÑ
(i) GK cigvYK i+c _v+K
(ii) i+c cigvYK i+c _v+K
(iii) vaxb Ae`vq _v+K
wb+Pi tkvbiU mivK?
(K) i i ii (L) i i iii✓
(M) ii i iii (N) i, ii i iii
- 111| A = 1s² 2s² 2p⁶; GB B+jKUb web`vm t_+K eSv hvqñ
(i) A tg+jj iU AvMb
(ii) thvR`Zv t\_+i B+jKUb msL`v 8
(iii) tg+jj iU i mqvibK fite i b@q
wb+Pi tkvbiU mivK?
(K) i (L) i i iii
(M) ii i iii✓ (N) i, ii i iii
- 112| ²⁰X bgbv tkvbiUÑ
(i) cKZc+Y avZ
(ii) chvq mviY+Z M+c-3 G Ae`vZ
(iii) thvR`Zv B+jKUb 2
wb+Pi tkvbiU mivK?
(K) i i ii (L) i i iii✓
(M) ii i iii (N) i, ii i iii
- 113| Cl-Gi B+jKUb web`vmÑ
(i) AvM+bi B+jKUb web`v'mi gZ
(ii) Aó+Ki (Octet) i bqq AYmiY K+i
(iii) AvqibK thSM MV+bi mivqK
wb+Pi tkvbiU mivK?
(K) i (L) i i iii
(M) iii (N) i, ii i iii✓
- 114| `B Gi weiatZÑ
(i) cigvYmgn Zvi eint`+i AvUu B+jKUb cwiBi Rb` cigvYi mvt_ B+jKUb tkqvi ev i bqq K+i |
(ii) `BiU i fb cigvYi B+jKUb tkqvi gva'tg hM! ev h³ nq
AvakZi mivZ Arb K+i |
(iii) B+jKUb Av`vb c`vb gva'tg i Zkxj ARY K+i |



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ৱবঃপি তঃকবঃউ মঃবঃক?

- (K) i (L) ii ✓
(M) i I ii (N) i, ii I iii

115 | ৱবঃউঃক মঃবঃমঃ msL`v KqU?

- (K) 5 (L) 6 ✓
(M) 7 (N) 8

116 | avZmgn AóKi cY K+iÑ

- (i) B+j KUb Mn+Yi d+j
(ii) B+j KUb Z`vMi d+j
(iii) B+j KUb tkqv+i i d+j

ৱবঃপি তঃকবঃউ মঃবঃক?

- (K) i I iii (L) ii ✓
(M) i, ii I iii (N) iii

117 | g`vM+bimqvg (Mg) cigY B+j KUb Z`vM K+iÑ

- (i) ৱ abvZ!K K`vUvq+b criYZ nq
(ii) thvR`Zv`+i AóK cY K+i
(iii) ৱবঃউঃক মঃবঃমঃ B+j KUb ৱeb`vm ARY K+i

ৱবঃপি তঃকবঃউ মঃবঃক?

- (K) i I ii (L) i I iii
(M) ii I iii (N) i, ii I iii ✓

118 | AvqibK thsM n+`QÑ

- (i) NaCl
(ii) AlCl₃
(iii) H₂O

ৱবঃপি তঃকবঃউ মঃবঃক?

- (K) i I iii (L) i I ii ✓
(M) ii I iii (N) i, ii I iii

119 | thsM MVbKv+j Na tg+j uÑ

- (i) AvqibK eÜb mío K+i
(ii) AóKi ৱbqg tg+b P+j
(iii) AvM+bi B+j KUb ৱeb`vm jvf K+i

ৱবঃপি তঃকবঃউ মঃবঃক?

- (K) i I ii ✓ (L) ii I iii
(M) iii I i (N) i, ii I iii

120 | NaCl MV+bi mgqÑ

- (i) Na B+j KUb Z`vM K+i
(ii) Cl B+j KUb MnY K+i
(iii) Na B+j KUb MnY K+i

ৱবঃপি তঃকবঃউ মঃবঃক?

- (K) i I ii ✓ (L) ii I iii
(M) iii I i (N) i, ii I iii

121 | NaCl thsM MVbKv+j -

- (i) Na I Cl Df q tg+j B ৱbq+bi B+j KUb ৱeb`vm ARb K+i
(ii) Na I Cl Gi g+a` B+j KU+bi Av`vb-c`vb N+U
(iii) Na I Cl Df q AóKi ৱbqg AbmiY K+i

ৱবঃপি তঃকবঃউ মঃবঃক?

- (K) i I ii (L) ii I iii ✓
(M) i I iii (N) i, ii I iii

122 | cwb (H₂O) AY mío Rb`KZ tRvov B+j KUb tkqv nq-

- (i) GK tRvov
(ii) `B tRvov
(iii) Pvi tRvov

ৱবঃপি তঃকবঃউ মঃবঃক?

- (K) i (L) i I iii
(M) ii I iii (N) ii ✓

123 | AavZmgn AóK ciY K+iÑ

- (i) B+j KUb Z`vMi gva`tg
(ii) B+j KUb Mn+Yi gva`tg
(iii) B+j KUb tkqv+i i gva`tg

ৱবঃপি তঃকবঃউ মঃবঃক?

- (K) i (L) ii I iii ✓
(M) iii (N) i, ii I iii

124 | AvqibK `hs+Mi `eikóÑ

- (i) D`P Mj bvsK I D`P ùUbvsK ৱeikó
(ii) B+j KUb tkqv
(iii) B+j KU+bi Av`vb c`vb

ৱবঃপি তঃকবঃউ মঃবঃক?

- (K) i I ii (L) i I iii ✓
(M) ii I iii (N) iii

125 | NH₃ thsMUi `eikó`mgn n+`QÑ

- (i) ৱb Mj bvsK I ùUbvsK ৱeikó nq
(ii) Mj Z I `eY ৱe`r cñievnx
(iii) `ej f`vbWvi Iqvjm kñ³ Øviv AvKó _v+K

ৱবঃপি তঃকবঃউ মঃবঃক?

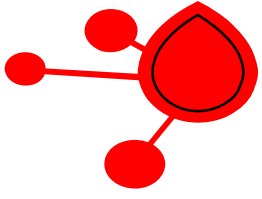
- (K) i I ii (L) i I iii ✓
(M) ii I iii (N) i, ii I iii

126 | cwb AY+ZÑ

- (i) tcvjwiiU Av+Q
(ii) `B tRvov g³ B+j KUb Av+Q
(iii) HOH eÜb tKvY 120⁰

ৱবঃপি তঃকবঃউ মঃবঃক?

- (K) i I ii ✓ (L) i I iii



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(M) ii I iii (N) i, ii I iii

127| HCl thšMñ

(i) ClcigvY AñK Zlor FYvZK

(ii) abvZK I FYvZK cvšš i mñ nq

(iii) H cigvY AñK Zlor abvZK

wbšPi tKvbiU mñVK?

(K) i I ii

(L) i I iii

(M) ii I iii

(N) i, ii I iii✓

128| HCl thšMñ

(i) tcvjvi

(ii) cvbšZ `eYxq

(iii) CH₄ G `eYxq

wbšPi tKvbiU mñVK?

(K) i

(L) ii

(M) i I ii✓

(N) i, ii I iii

129| avZmgn AóK cY Kš iñ

(i) BšjKub MnšYi dšj

(ii) BšjKub Z`všMi øviv

(iii) AvqibK thšM MVb Kš i

wbšPi tKvbiU mñVK?

(K) i I ii

(L) i I iii

(M) ii I iii✓

(N) i, ii I iii

130| 2K + H₂ → 2KH weµqv i Drcvš` nñBšWšRbñ

(i) abvZK Avqb inšmte KvR Kš i

(ii) FYvZK Avqb inšmte KvR Kš i

(iii) avZi mñ_ AvqibK eÜb MVb Kš i

wbšPi tKvbiU mñVK?

(K) i I ii

(L) i I iii

(M) ii I iii✓

(N) i, ii I iii

131| mgšhvRx thšM nš`Q- (VI)

(i) Pñb I A`vjšKvnj

(ii) A`vjšKvnj I Avqib

(iii) MšKvR I Pñb

wbšPi tKvbiU mñVK?

(K) i I ii

(L) ii I iii

(M) i, ii I iii

(N) i I iii✓

132| avZe eÜšbi `eikó` nš`Qñ

(i) we`r cñievñZv

(ii) AbgbxqZv

(iii) NvZmnZv

wbšPi tKvbiU mñVK?

(K) i I ii

(L) i I iii✓

(M) ii I iii

(N) iii

133| H₂O AY MVbKvšjñ

(i) H `Bšqi wbqg (duplet) I O AóšKi web`vm jvf Kš i

(ii) H I O ci`úi BšjKub tKqv i Kš i

(iii) H I O Gi gša` BšjKub Av`vb-c`vb NšU

wbšPi tKvbiU mñVK?

(K) i I ii✓

(L) ii I iii

(M) iii I i

(N) i, ii I iii

134| mgšhvRx eÜb MñVZ nq-

(i) 1ñU avZ Ges 1ñU AavZi gša`

(ii) BšjKub tKqv i i gša`g

(iii) 2ñU AavZe cigvYi gša`

wbšPi tKvbiU mñVK?

(K) i I ii

(L) ii I iii✓

(M) i I iii

(N) i, ii I iii

135| MñdvBU-

(i) Kvešbi GKñU ičšf`

(ii) we`r cñievñx

(iii) Gi cñZñU KveY cigvY Aci 3ñU cigvYi mñ_ mgšhvRx

eÜb MVb Kš i

wbšPi tKvbiU mñVK?

(K) i I ii

(L) ii I iii

(M) iii I i

(N) i, ii I iii✓

136| nx iKñ

(i) Kvešbi GKñU ičšf`

(ii) we`r cñievñx

(iii) Gi cñZñU KveY cigvY Aci 4ñU KveY cigvYi mñ_

mgšhvRx eÜb MVb Kš i

wbšPi tKvbiU mñVK?

(K) i I ii

(L) i I iii✓

(M) iii I i

(N) i, ii I iii

wbšPi Z`ñU co Ges 137-138 bs cški Dēi `vlt

wbñq Mñm mKj e`i AYšZ GKññK cigvY _všK| AYšZ weñfb

cigvY tgvUvñU `pfvte msh³ _všK|

137| wbšPi tKvbiU wbñq Mñm bq?

(K) mñj qvq

(L) tµwgqvg✓

(M) tRbb

(N) tiWb

138| wbñq tgšj mgnñ

(K) ññ-cigvYK

(L) ññ-cigvYK

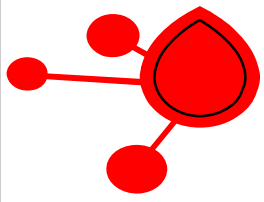
(M) GK-cigvYK✓

(N) tKvbiUB bq

wbšPi BšjKub web`vmñU jñ Ki Ges 139-140 bs cški Dēi `vlt



(N) $H = Br$

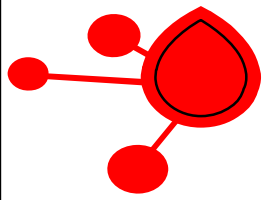


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Iô Aa'vqt †gv†ji aiYv I i'vmvqwbK MYbv

- 1| $\text{cgvY Ae}^{-\text{vq}}$ 2g $\text{nvB}^{\dagger}\text{W}^{\dagger}\text{Rb M}^{\dagger}\text{v}^{\dagger}\text{mi}$ AvqZb KZ?
(K) 2.24 L
(L) 11.2 L
(M) 22.4 L ✓
(N) 44.8 L
- 2| $\text{wb}^{\dagger}\text{Pi} \dagger\text{Kvb}^{\dagger}\text{U K}^{\dagger}\text{v}^{\dagger}\text{j} \text{mqvg}$ dm†d†Ui ms†KZ?
(K) CaPO_4
(L) $\text{Ca}(\text{PO}_4)_2$
(M) $\text{Ca}_2(\text{PO}_4)_3$
(N) $\text{Ca}_3(\text{PO}_4)_2$ ✓
- $\text{wb}^{\dagger}\text{Pi D}^{\dagger}\text{xc}^{\dagger}\text{Ki A}^{\dagger}\text{v}^{\dagger}\text{j}^{\dagger}\text{K}$ 3 I 4 bs c†ki DĖi `vIt
5 Mvg $\text{nvB}^{\dagger}\text{W}^{\dagger}\text{Rb M}^{\dagger}\text{v}^{\dagger}\text{mi}$ 75 Mvg $\dagger\text{Kwib M}^{\dagger}\text{v}^{\dagger}\text{mi}$ g†a` Pvjbv Kiv n†jv|
- 3| $\text{D}^{\dagger}\text{xc}^{\dagger}\text{K e}^{\dagger}\text{e}^{\dagger}\text{uZ} \dagger\text{Kwib}$ cigvYi msL`v KZU?
(K) 1.27×10^{24} ✓
(L) 2.54×10^{24}
(M) 6.02×10^{23}
(N) 6.36×10^{23}
- 4| $\text{D}^{\dagger}\text{xc}^{\dagger}\text{Ki} \text{w}^{\dagger}\text{e}^{\dagger}\text{mqvi Aekó} \text{v}^{\dagger}\text{K}^{\dagger}\text{N}$
(K) 1.44 $\dagger\text{gvj H}_2$ ✓
(L) 1.44 $\dagger\text{gvj Cl}_2$
(M) 2.89 $\dagger\text{gvj H}_2$
(N) 2.89 $\dagger\text{gvj Cl}_2$
- 5| $\text{A}^{\dagger}\text{v}^{\dagger}\text{gWI A}^{\dagger}\text{v}^{\dagger}\text{fv}^{\dagger}\text{M}^{\dagger}\text{W}^{\dagger}\text{v} \dagger\text{Kvb} \dagger^{\dagger}\text{ki} \text{w}^{\dagger}\text{e}^{\dagger}\text{Avbx} \text{w}^{\dagger}\text{Q}^{\dagger}\text{j}^{\dagger}\text{b}^{\dagger}$
(K) Rvgwb
(L) dvY
(M) BUwvj ✓
(N) $\text{h}^3 \text{ivó}$
- 6| $\text{i'vmvq}^{\dagger}\text{bi AY, cigvY, w}^{\dagger}\text{e}^{\dagger}\text{mqK, Drcv}^{\dagger}$ BZ`w` wnmve wBkvk Kx bv†g c`iPZ?
(K) Physical
(L) Electroplating
(M) Galvanizing
(N) Stoichiometry ✓
- 7| $\dagger\text{gvjvi fi}^{\dagger}\text{K} \dagger\text{Kvb GK}^{\dagger}\text{K cKvk}$ Kiv nq?
(K) wgvj Mvg
(L) Mvg ✓
(M) †KwR

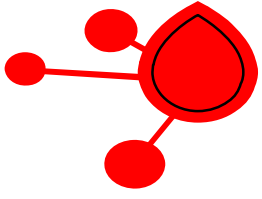
- (N) Ub
- 8| $\text{cgvY Zvcgv}^{\dagger}\text{v I P}^{\dagger}\text{c}$ 1.008g $\text{nvB}^{\dagger}\text{W}^{\dagger}\text{R}^{\dagger}\text{bi}$ AvqZb KZ?
(K) 22.4 L (L) 11.2 L ✓
(M) 44.8 L (N) 1.008 L
- 9| $\text{cgvY Zvcgv}^{\dagger}\text{v I Pvc}$ KZ?
(K) 0°C I 1 evqgUjxq Pvc
(L) 273K I 760 $\dagger\text{m}^{\dagger}\text{g}$ evqPvc
(M) 25°C I 1 evqgUjxq Pvc ✓
(N) 6.023°C I 22.4 evqgUjxq Pvc
- 10| $\text{cgvY Zvcgv}^{\dagger}\text{v I P}^{\dagger}\text{c GK} \dagger\text{gvj} \dagger\text{Kwib/A}^{\dagger}\text{v}^{\dagger}\text{gwbqv/}$
 $\text{Aw} \cdot \dagger\text{Rb/bvB}^{\dagger}\text{U}^{\dagger}\text{Rb/} \dagger\text{h} \dagger\text{Kv}^{\dagger}\text{bv M}^{\dagger}\text{v}^{\dagger}\text{mi}$ AvqZb KZ?
(K) 1 wjUvi ✓ (L) 22.4 wjUvi
(M) 6.02×10^{23}
(N) 71 wjUvi
- 11| $\text{cgvY Zvcgv}^{\dagger}\text{v I P}^{\dagger}\text{c GK} \dagger\text{gvj M}^{\dagger}\text{v}^{\dagger}\text{mi} \dagger\text{y}^{\dagger}\text{I} \text{wb}^{\dagger}\text{Pi} \dagger\text{Kvb}^{\dagger}\text{Ui}$
AvqZb m†ev`P?
(K) H_2 (L) O_2
(M) CO_2 (N) †KvbUB bq ✓
- 12| $\text{mvj}^{\dagger}\text{dD}^{\dagger}\text{ik G}^{\dagger}\text{m}^{\dagger}\text{Wi AvYieK fi}$ KZ?
(K) 98 ✓ (L) 106
(M) 98 Mvg (N) 106 Mvg
- 13| $\text{cgvY Zvcgv}^{\dagger}\text{v I P}^{\dagger}\text{c}$ 44g CO_2Gi AvqZb KZ?
(K) 11.2 wjUvi
(L) 22.4 wjUvi ✓
(M) 1 wjUvi
(N) 44.8 wjUvi
- 14| 1 $\dagger\text{gvj Aw} \cdot \dagger\text{Rb AY}^{\dagger}\text{Z Aw} \cdot \dagger\text{Rb}$ cigvYi msL`v KZ?
(K) 6.02×10^{23}
(L) 12.04×10^{23} ✓
(M) 3.01×10^{23}
(N) 0.01×10^{12}
- 15| 5g Kveb-WwB-A · vB†W KZU AY w`gwb?
(K) 6.84×10^{22} ✓
(L) 3.42×10^{22}
(M) 13.68×10^{22}
(N) 1.9×10^{23}
- 16| 16g Aw · †R†bi cigvYi msL`v KZ?
(K) 6.02×10^{22} ✓
(L) 3.01×10^{23}



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- (M) 1.24×10^{24}
(N) $\frac{1}{2} \text{KvbiUB bq}$
- 17| 1 $\text{U cwb i AYi fi KZ?}$
(K) $1.67 \times 10^{-24} \text{g}$
(L) $7.30 \times 10^{-23} \text{g}$
(M) $3.32 \times 10^{-24} \text{g}$
(N) $2.99 \times 10^{-23} \text{g} \checkmark$
- 18| $\text{cgvY Zvcgv i v I P v c 2 j Uvi tKwib M'v fmi fi KZ?}$
(K) 3.17g
(L) 6.34g $\checkmark$
(M) 12.68g
(N) $\frac{1}{2} \text{KvbiUB bq}$
- 19| $\text{cgvY Zvcgv i v I P v c 2 j Uvi w g t b AYi m s L v KZ?}$
(K) 5.37×10^{-22}
(L) 5.37×10^{32}
(M) 5.37×10^{24}
(N) $5.377 \times 10^{22} \checkmark$
- 20| 0.1 mole NaOH Gi fi KZ?
(K) 40g (L) 400g
(M) 4g $\checkmark$ (N) 0.4g
- 21| $\text{cgvY Zvcgv i v I P v c 11.2 j Uvi A v t g w b q v i fi KZ?}$
(K) 17g (L) 8.5g $\checkmark$
(M) 1.7g (N) 170g
- 22| $\text{B v b t j i GK t g v j m g v b KZ?}$
(K) 40 g (L) 46 g $\checkmark$
(M) 60 g (N) 24 g
- 23| 1 Mvg CaCO_3 G KqU AYi Av t Q?
(K) 6.02×10^{23}
(L) 6.02×10^{-23}
(M) 6.02×10^{15}
(N) $6.02 \times 10^{21} \checkmark$
- 24| 24.5 Mvg H_2SO_4 G KqU AY i e v g v b?
(K) 12.5×10^{22}
(L) $1.51 \times 10^{23} \checkmark$
(M) 1.15×10^{23}
(N) 1.198×10^{23}
- 25| $\text{cgvY Ae v q 11.2 j Uvi O}_2 \text{ M'v f m KqU AY i e v g v b?}$
(K) 6.02×10^{23}
(L) 2.05×10^{23}

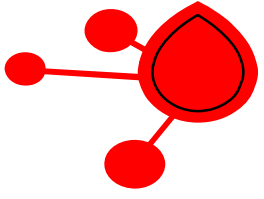
- (M) 1.15×10^{22}
(N) $3.01 \times 10^{23} \checkmark$
- 26| 0.001 t g v j b v B i U K G i m t W K Z , t j v AY v K t e?
(K) 6.023×10^{17}
(L) 6.023×10^{18}
(M) 6.02×10^{19}
(N) $6.023 \times 10^{20} \checkmark$
- 27| 49 Mvg m v j d D i i K G i m W m g v b K Z t g v j ?
(K) 1 t g v j (L) 2 t g v j
(M) $\frac{1}{2} \text{t g v j} \checkmark$ (N) $\frac{2}{3} \text{t g v j}$
- 28| $\text{cgvY Ae v q 0.01 t g v j t K w i b M'v f m i A v q Z b KZ?}$
(K) 0.224 j Uvi $\checkmark$
(L) 22.4 j Uvi
(M) 11.2 j Uvi
(N) 0.0234 j Uvi
- 29| 200 gm CaCO_3 Gi t g v j m s L v K Z ? C l
(K) 2 mole $\checkmark$
(L) 1 mole
(M) 5 mole
(N) 0.5mole
- 30| 1 t g v j m v j d D i i K G i m t W i fi KZ?
(K) 22.4 Mvg
(L) 6.02×10^{23} Mvg
(M) 98 Mvg $\checkmark$
(N) 98
- 31| 1 Mvg H_2SO_4 -G KZ AY v t K?
(K) 98
(L) 6.02×10^{23}
(M) $6.1 \times 10^{21} \checkmark$
(N) 1.6×10^{23}
- 32| t K v b e v K i U m i V K ?
(K) t m w q v t g i c Z x K S o
(L) t m t i i c Z x K A u $\checkmark$
(M) A v q i t b i c Z x K K
(N) c U w k q v t g i c Z x K P
- 33| w b t P i t K v b c Z x K i U m i V K ?
(K) w m j f v t i i c Z x K H g
(L) t m w q v t g i c Z x K N a $\checkmark$



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- (M) $cU_{11}kq_{12}gi$ $cZ_{13}K$ P
(N) $tmvbi$ $cZ_{13}K$ g
- 34| *Copper* Gi $cZ_{13}K$ Kx ?
(K) Co (L) CO
(M) Cu ✓ (N) Ag
- 35| *Lead* Gi $j_{14}Ub$ bvg Kx ?
(K) *Platinum*
(L) *Kalium*
(M) *Plumbum* ✓
(N) *Natrium*
- 36| $_{15}P^*$ ($D_{16}E_{17}RZ$ $Ae_{18}^{-}vq$) $thvR_{19}Zv$ KZ ?
(K) 3 (L) 5 ✓
(M) 1 (N) 3 | 5
- 37| $D_{16}E_{17}RZ$ $Ae_{18}^{-}vq$ $tevi_{19}bi$ $me_{20}kl$ $K_{21}c_{22}t_{23}$ $KZ_{24}U$ $B_{25}j$ $KU_{26}b$ $ie_{27}^{-}g_{28}v$?
(K) 1 (L) 2
(M) 3 ✓ (N) 4
- 38| $D_{16}E_{17}RZ$ $Ae_{18}^{-}vq$ $tevi_{19}bi$ $me_{20}kl$ $K_{21}c_{22}t_{23}$ i_{24} $te_{25}R_{26}v$ $B_{27}j$ $KU_{28}bi$ $msL_{29}^{-}v$ KZ ?
(K) 1 (L) 2
(M) 3 ✓ (N) 4
- 39| Na Gi $thvR_{19}bx$ $K_{20}x_{21}mi$ $D_{22}ci$ $ib_{23}fi$ $K_{24}i$?
(K) $me_{25}kl$ $K_{26}c_{27}t_{28}$ i_{29} $B_{30}j$ $KU_{31}bi$ $msL_{32}^{-}vi$ $D_{33}ci$ ✓
(L) $me_{34}kl$ $K_{35}c_{36}t_{37}$ i_{38} $msL_{39}^{-}vi$ $D_{40}ci$
(M) $me_{41}kl$ $K_{42}c_{43}t_{44}$ i_{45} k_{46}^3 i_{47} $D_{48}ci$
(N) $me_{49}kl$ $K_{50}c_{51}t_{52}$ i_{53} $A_{54}vZ_{55}bi$ $D_{56}ci$
- 40| $ib_{19}c_{20}q$ $M_{21}^{-}vmg_{22}ni$ $thvR_{23}Zv$ KZ ?
(K) kb_{24}^{-} ✓ (L) 1
(M) 2 (N) 3
- 41| $thvR_{19}bx$ $tg_{20}st_{21}ji$ Ab_{22}^{-} $tg_{23}st_{24}ji$ $mv_{25}t_{26}$ h^3 $n_{27}lq_{28}vi$ $mv_{29}g_{30}$ $thvR_{31}K$ Kx $e_{32}t_{33}j$?
(K) $thvR_{34}Zv$ ✓ (L) $cZ_{35}K$
(M) $thvR_{36}Mg_{37}jK$ (N) $ms_{38}t_{39}KZ$
- 42| Cl Gi $thvR_{19}bx$ $K_{20}x_{21}mi$ $D_{22}ci$ $ib_{23}fi$ $K_{24}i$?
(K) $me_{25}kl$ $K_{26}c_{27}t_{28}$ i_{29} $u_{30}gi$ $D_{31}ci$
(L) $me_{32}kl$ $K_{33}c_{34}t_{35}$ i_{36} $D_{37}c_{38}^{-}ii$ $D_{39}ci$
(M) $me_{40}kl$ $K_{41}c_{42}t_{43}$ i_{44} $te_{45}R_{46}v$ $B_{47}j$ $KU_{48}b$ $msL_{49}^{-}vi$ $D_{50}ci$ ✓
(N) $me_{51}kl$ $K_{52}c_{53}t_{54}$ i_{55} $B_{56}j$ $KU_{57}bi$ $msL_{58}^{-}vi$ $D_{59}ci$
- 43| $thvR_{19}bx$ kb_{20}^{-} $n_{21}te$?
(K) Ni (L) Na

- (M) Cl (N) Ne ✓
- 44| $tmvWqvg$ $dm_{12}t_{13}dU$ Gi $ms_{14}t_{15}KZ$ Kx ?
(K) $NaPO_4$
(L) $Na_3(PO_4)_2$
(M) $Na(PO_4)_2$
(N) Na_3PO_4 ✓
- 45| $mvjdvBU$ $Avq_{12}bi$ $Avavb$ KZ ?
(K) -1 (L) -2 ✓
(M) 2 (N) 4
- 46| $ib_{12}Pi$ $thvR_{13}U$ $Avavb$ -1 bq ?
(K) $nvB_{14}W_{15} \cdot vBW$
(L) $bvB_{16}UU$
(M) $bvBUvBU$
(N) $dm_{17}d_{18}wbqvg$ ✓
- 47| $ib_{12}Pi$ $thvR_{13}U$ $AvavbN_2$ bq ?
(K) $Kve_{14}t_{15}bU$
(L) $mvj_{16}t_{17}dU$
(M) $A_{18}v_{19}t_{20}g_{21}wbqvg$ ✓
(N) $mvjdvBU$
- 48| $Kve_{12}t_{13}bU$ $thvR_{14}Mg_{15}j_{16}K_{17}i$ $thvR_{18}bx$ $n_{19}t_{20}Q_{21}N$?
(K) 3 (L) 4
(M) 2 ✓ (N) 1
- 49| $abvZ_{12}K$ $thvR_{13}Mg_{14}j_{15}K$ $thvR_{16}U$?
(K) SO_4 (L) PO_4
(M) CO_3 ✓ (N) NH_4
- 50| $thvR_{12}U$ $thvR_{13}Mg_{14}j_{15}K$ ev gjK ?
(K) N_2O_5 (L) P_2O_5
(M) SO_5 ✓ (N) Al_2O_3
- 51| $A_{12}v_{13}t_{14}g_{15}wbqvg$ $mvj_{16}t_{17}dU$ $AY_{18}Z$ $tg_{19}vU$ $Kq_{20}U$ $cig_{21}vY$ $ie_{22}^{-}g_{23}v$?
(K) 9 (L) 10
(M) 13 (N) 15 ✓
- 52| SO_4^{-2} $gj_{12}K_{13}i$ $thvR_{14}bx$ KZ ?
(K) 2 ✓ (L) 4
(M) 3 (N) 5
- 53| $A_{12}v_{13}t_{14}g_{15}wbqvg$ $mvj_{16}t_{17}dU$ $ms_{18}t_{19}KZ$ $n_{20}t_{21}Q_{22}N$?
(K) $AlSO_4$
(L) $Al_2(SO_4)_3$ ✓
(M) $Al_3(SO_4)_3$
(N) $Al(SO_4)_3$
- 54| $thvR_{12}K$ $mvj_{13}t_{14}dU$ $ms_{15}t_{16}KZ$ $n_{17}t_{18}Q_{19}N$



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(K) Zn_2SO_4

(L) $Zn(SO_4)_3$

(M) $ZnSO_4$ ✓

(N) $Zn_2(SO_4)_3$

55 | 100g $NaNO_2$ $NaNO_3$ Na_2NO_3 $Na(NO_3)_2$

(K) $NaNO_2$

(L) $NaNO_3$ ✓

(M) Na_2NO_3

(N) $Na(NO_3)_2$

56 | 100g $NaNO_2$ $NaNO_3$ Na_2NO_3 $Na(NO_3)_2$

(K) N_5O_2

(L) $N_{10}O_4$

(M) N_2O_5 ✓

(N) BO_5

57 | 100g CO_2 CS_2 CSO_2

(K) CO_2

(L) C_2S

(M) CS_2 ✓

(N) CSO_2

58 | 100g Mg_2PO_4 $Mg_3(PO_4)_2$ $MgPO_4$ $Mg_2(PO_4)_3$

(K) Mg_2PO_4

(L) $Mg_3(PO_4)_2$ ✓

(M) $MgPO_4$

(N) $Mg_2(PO_4)_3$

59 | 100g $CaPO_4$ $Ca(PO_4)_3$ $Ca_3(PO_4)_3$ $Ca(PO_4)_2$

(K) $CaPO_4$

(L) $Ca(PO_4)_3$

(M) $Ca_3(PO_4)_3$ ✓

(N) $Ca(PO_4)_2$

60 | 100g $AlPO_4$ Al_3PO_4 $AlPO_3$ $Al(PO_4)_3$

(K) $AlPO_4$ ✓

(L) Al_3PO_4

(M) $AlPO_3$

(N) $Al(PO_4)_3$

61 | 100g $Fe_2(SO_4)_3$ $FeSO_7$ $FeSO_3$ $FeSO_4$ ✓

(K) $Fe_2(SO_4)_3$

(L) $FeSO_7$

(M) $FeSO_3$

(N) $FeSO_4$ ✓

62 | 100g $AlNO_3$ Al_2NO_3

(K) $AlNO_3$

(L) Al_2NO_3

(M) $Al(NO_3)_3$ ✓

(N) $Al_2(NO_3)_3$

63 | 100g Nb_2O_5 Nb_2O_3 Nb_2O_4 Nb_2O_6

(K) Nb_2O_5

(L) Nb_2O_3

(M) Nb_2O_4 ✓

(N) Nb_2O_6

64 | 100g GK 100g 100g 100g

(K) 100g

(L) 100g ✓

(M) 100g

(N) 100g

65 | 100g $NaOH$ $NaOH$ $NaOH$ $NaOH$

(K) $NaOH$

(L) $NaOH$ ✓

(M) $NaOH$

(N) $NaOH$

66 | 100g 53Mg 5.3Mg 0.53Mg 1.06Mg

(K) 53Mg

(L) 5.3Mg ✓

(M) 0.53Mg

(N) 1.06Mg

67 | 100g $NaOH$ $NaOH$ $NaOH$ $NaOH$

(K) $NaOH$

(L) $NaOH$ ✓

(M) $NaOH$

(N) $NaOH$

68 | 100g $NaCl$ $NaOH$ $NaOH$ $NaOH$

(K) $NaCl$

(L) $NaOH$

(M) $NaOH$

(N) $NaOH$

69 | 100g 100g 100g 100g

(K) 100g

(L) 100g ✓

(M) 100g

(N) 100g

70 | 100g 50Mg 50Mg 50Mg 50Mg

(K) 50Mg

(L) 50Mg ✓

(M) 50Mg

(N) 50Mg

71 | 100g 73Mg 73Mg 73Mg 73Mg

(K) 73Mg

(L) 73Mg ✓

(M) 73Mg

(N) 73Mg

72 | 100g KZ 100g 100g 100g

(K) 100g

(L) 100g ✓

(M) 100g

(N) 100g

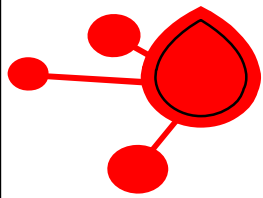
73 | 100g 100g 100g 100g

(K) 100g

(L) 100g ✓

(M) 100g

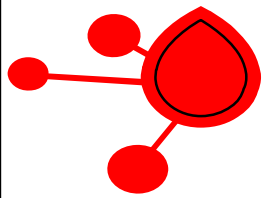
(N) 100g



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- (M) 4 H_2SO_4 (N) 10 H_2SO_4 ✓
 73| 25 ml H_2SO_4 , 100 ml H_2O added. What is the concentration of H_2SO_4 in the solution?
 (K) 1 M (L) 2.55 M ✓
 (M) 3.95 M (N) 4.11 M
 74| 500 ml Na_2CO_3 solution contains 5×10^{10} molecules of Na_2CO_3 . What is the concentration of Na_2CO_3 in the solution?
 (K) 4.15×10^{-14} M (L) 5.6×10^{-10} M
 (M) 3.8×10^{-15} M (N) 1.66×10^{-13} M ✓
 75| $\text{K}_2\text{Cr}_2\text{O}_7$ solution contains 50% $\text{K}_2\text{Cr}_2\text{O}_7$. What is the concentration of $\text{K}_2\text{Cr}_2\text{O}_7$ in the solution?
 (K) 50% (L) 45.8% ✓
 (M) 60.5% (N) 42.3%
 76| ZnSO_4 solution contains 22.5% ZnSO_4 . What is the concentration of ZnSO_4 in the solution?
 (K) 22.5% (L) 25.45% ✓
 (M) 22.3% (N) 67.72%
 77| NaOH solution contains 57.5% NaOH . What is the concentration of NaOH in the solution?
 (K) 57.5% ✓ (L) 83.2%
 (M) 42.5% (N) 25.1%
 78| HClO_4 solution contains 0.005% HClO_4 . What is the concentration of HClO_4 in the solution?
 (K) 0.005% (L) 35.3% ✓
 (M) 63.68% (N) 17%
 79| H_2O solution contains 34.07% H_2O . What is the concentration of H_2O in the solution?
 (K) 34.07% (L) 27.07%
 (M) 36.07% ✓ (N) 47.26%
 80| H_2O solution contains 22.22% H_2O . What is the concentration of H_2O in the solution?
 (K) 22.22% (L) 89.1%
 (M) 11.11% ✓ (N) 24.1%
 81| H_2O solution contains 88.89% H_2O . What is the concentration of H_2O in the solution?
 (K) 88.89% ✓ (L) 11.11%
 (M) 70.71% (N) 50%
 82| A solution contains 10% H_2O and 90% H_2SO_4 . What is the concentration of H_2O in the solution?
 (K) AB_{ab} (L) A_eB_b
 (M) A_bB_a ✓ (N) $\text{K}_b\text{L}_b\text{UB}$ bq
 83| A solution contains 10% H_2O and 90% H_2SO_4 . What is the concentration of H_2O in the solution?
 (K) AB_{ab} (L) A_eB_b
 (M) A_bB_a ✓ (N) $\text{K}_b\text{L}_b\text{UB}$ bq

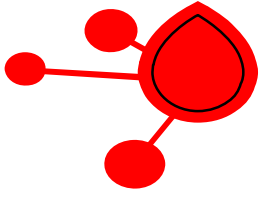
- (K) $n \times M \times 100 / A$ % (L) $n \times M \times 100 / M$ % ✓
 (M) $M \times A \times 100 / n$ % (N) $M \times A \times 100$ %
 84| A solution contains 10% H_2O and 90% H_2SO_4 . What is the concentration of H_2O in the solution?
 (K) B_b (L) C_bD_b ✓
 (M) E_bF_b (N) G_bH_b
 85| A solution contains 10% H_2O and 90% H_2SO_4 . What is the concentration of H_2O in the solution?
 (K) M_bK_b (L) C_bD_b ✓
 (M) E_bF_b (N) G_bH_b
 86| A solution contains 10% H_2O and 90% H_2SO_4 . What is the concentration of H_2O in the solution?
 (K) CH_4/NH_3 ✓ (L) C_6H_6
 (M) $\text{C}_6\text{H}_{12}\text{O}$ (N) C_2H_2
 87| A solution contains 10% H_2O and 90% H_2SO_4 . What is the concentration of H_2O in the solution?
 (K) B_b (L) C_bD_b ✓
 (M) E_bF_b (N) G_bH_b
 88| A solution contains 10% H_2O and 90% H_2SO_4 . What is the concentration of H_2O in the solution?
 (K) $-\text{CH}_2-$ (L) CH ✓
 (M) C_2H_2 (N) C_6H_6
 89| A solution contains 10% H_2O and 90% H_2SO_4 . What is the concentration of H_2O in the solution?
 (K) CH ✓ (L) C_2H_2
 (M) C_6H_6 (N) 
 90| A solution contains 10% H_2O and 90% H_2SO_4 . What is the concentration of H_2O in the solution?
 (K) C_3H_4 (L) C_2H_4
 (M) C_6H_6 ✓ (N) $\text{C}_6\text{H}_{12}\text{O}_6$
 91| A solution contains 10% H_2O and 90% H_2SO_4 . What is the concentration of H_2O in the solution?
 (K) CH (L) C_3H_8 ✓
 (M) C_2H_6 (N) CH_4
 92| A solution contains 10% H_2O and 90% H_2SO_4 . What is the concentration of H_2O in the solution?
 (K) CH (L) C_6H_6 ✓
 (M) CH_4 (N) C_2H_2
 93| A solution contains 10% H_2O and 90% H_2SO_4 . What is the concentration of H_2O in the solution?
 (K) CH_4O (L) $\text{C}_6\text{H}_{12}\text{O}_6$ ✓
 (M) $\text{C}_2\text{H}_6\text{O}$ (N) H_2CO_3
 94| A solution contains 10% H_2O and 90% H_2SO_4 . What is the concentration of H_2O in the solution?
 (K) CH_4O (L) $\text{C}_6\text{H}_{12}\text{O}_6$ ✓
 (M) $\text{C}_2\text{H}_6\text{O}$ (N) H_2CO_3



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- (K) N_2O_6 (L) NO_3
 (M) N_2O_3 ✓ (N) K_2CO_3 bq
 95| $mgxKiYi \uparrow Kvb \uparrow K \uparrow \mu qK \uparrow jLv nq?$
 (K) $evg \uparrow \uparrow K$ ✓ (L) $gvSL \uparrow b$
 (M) $Wb \uparrow \uparrow K$ (N) $c _ K K \uparrow i$
 96| $H_2 + F_2 = 2HF$ $mgxKiY n \uparrow Z \uparrow b \uparrow i \uparrow Kvb Z _ \uparrow \uparrow U cv lqv hvq$
 b?
 (K) $2g nvB \uparrow W \uparrow Rb 38g \uparrow d \uparrow i \uparrow b i mv \uparrow _ \uparrow \mu qv K \uparrow i 40g$
 $nvB \uparrow W \uparrow Rb d \uparrow i \uparrow BW Dr cb K \uparrow i |$
 (L) $1 AvqZb nvB \uparrow W \uparrow Rb M \uparrow \uparrow m 1 AvqZb \uparrow d \uparrow i \uparrow b i mv \uparrow _$
 $\uparrow \mu qv K \uparrow i 2 AvqZb nvB \uparrow W \uparrow Rb \uparrow d \uparrow i \uparrow BW Dr cb K \uparrow i |$
 (M) $\uparrow d \uparrow i \uparrow b i \uparrow thv Rbx 1 |$
 (N) $\uparrow d \uparrow i \uparrow b Le m \uparrow \mu q \uparrow g \uparrow j |$ ✓
 97| $g \uparrow \uparrow M \uparrow b \uparrow i m \uparrow qv g avZ nvB \uparrow W \uparrow K \uparrow i K G \uparrow m \uparrow W i mv \uparrow _ \uparrow \mu qv K \uparrow i Kx$
 $Dr cb K \uparrow i e?$
 (K) $Mg Cl(s) + HCl(g)$ (L) $MgH_2(s) + Cl_2(g)$
 (M) $MgCl_2(s) + H_2(g)$ ✓ (N) $MgCl(H)_2$
 98| $g \uparrow \uparrow M \uparrow b \uparrow i m \uparrow qv g b \uparrow v \uparrow U \uparrow K D \uparrow \uparrow B \uparrow b \uparrow P i \uparrow Kvb \uparrow U Dr cb nq?$
 (K) Mg, NO, O_2 (L) MgO, NO, O_2
 (M) MgO, NO_2, O_2 ✓ (N) Mg, NO_2, O_2
 99| $\uparrow Kvb \uparrow \uparrow \mu qv \uparrow U m \uparrow VK?$
 (K) $Al + CHl = AlHCl$
 (L) $Al + HCl = Al_3Cl + H_2$
 (M) $2Al + 6HCl = 2AlCl_3 + 3H_2$ ✓
 (N) $2Al + 2HCl = AlCl_3 + H_2$
 100| $\uparrow m j fvi b \uparrow v \uparrow U \uparrow K D \uparrow \uparrow B \uparrow K i \uparrow j \uparrow b \uparrow P i \uparrow Kvb \uparrow U Dr cb nq?$
 (K) $Ag(s)$ ✓ (L) $AgO(g)$
 (M) $AgO(s)$ (N) $Ag_3N(s)$
 101| $24 Mvg Mg KZ Mvg O_2 Gi mv \uparrow _ \uparrow \mu qv K \uparrow i e?$
 (K) $16 Mvg$ ✓ (L) $12 Mvg$
 (M) $32 Mvg$ (N) $42 Mvg$
 102| $8 Mvg O_2 KZ Mvg C Gi mv \uparrow _ \uparrow \mu qv K \uparrow i CO_2 Dr cb$
 $K \uparrow i?$
 (K) $2 Mvg$ (L) $12 Mvg$
 (M) $3 Mvg$ ✓ (N) $1 Mvg$
 103| $20 Mvg Mg \uparrow _ \uparrow K KZ Mvg MgO Dr cb n \uparrow e?$
 (K) $11.2 Mvg$ (L) $52 Mvg$
 (M) $33.3 Mvg$ ✓ (N) $68 Mvg$
 104| $20 Mvg NaOH Gi mv \uparrow _ \uparrow \mu qv Kivi Rb _ KZ Mvg$
 $c \uparrow qv Rb?$

- (K) $18.25 Mvg$ ✓ (L) $16.15 Mvg$
 (M) $17.75 Mvg$ (N) $35.5 Mvg$
 105| $250 cm^3 0.01M _ e \uparrow Y KZ Mvg HNO_3 _ ex fZ Av \uparrow Q?$
 (K) $2 Mvg$ (L) $0.2 Mvg$
 (M) $0.16 Mvg$ ✓ (N) $0.19 Mvg$
 106| $MgO Dr cb Kivi Rb _ 4 \uparrow g \uparrow j Mg l 10 \uparrow g \uparrow j O_2 \uparrow bqv$
 $n \uparrow j \uparrow j \uparrow g \uparrow Us \uparrow \uparrow \mu qK \uparrow Kvb \uparrow U?$
 (K) Mg ✓ (L) O_2
 (M) MgO (N) $Mg l O_2$
 107| $64 Mvg O_2 n \uparrow Z Na_2O Dr cb _ \uparrow b i R \uparrow b _ 46 Mvg Na \uparrow hvM$
 $Kivi n \uparrow j Ae k \acute{o} O_2 Gi c \uparrow i g \uparrow Y KZ?$
 (K) $51 Mvg$ (L) $32 Mvg$
 (M) $35 Mvg$ (N) $48 Mvg$ ✓
 108| $GK \uparrow i aK \uparrow \uparrow \mu qK \uparrow i g \uparrow a _ \uparrow h \uparrow \uparrow \mu qK Ae k \acute{o} mv \uparrow _ , Zv \uparrow K Kx$
 $e \uparrow j?$
 (K) $\uparrow j \uparrow g \uparrow Us \uparrow \uparrow \mu qK$ ✓ (L) $A _ \uparrow v \uparrow jvi$
 (M) $\uparrow d \uparrow i \uparrow b i s$ (N) $Stoichiometry$
 109| $me \uparrow P \uparrow q \uparrow e \uparrow i \times i \uparrow m \uparrow qv bK c _ \uparrow _ \uparrow K Kx e \uparrow j?$
 (K) $limiting reactant$ (L) $analar$ ✓
 (M) $Stoichiometry$ (N) $aqueous solution$
 110| $A _ \uparrow v \uparrow jvi (analar) c _ \uparrow _ KZUv \uparrow e \uparrow i \times?$
 (K) 75% (L) 100%
 (M) 95.5% ✓ (N) 80%
 111| $e \uparrow f \uparrow Uq \uparrow j i AY \uparrow Z KZ AY \uparrow K jvm cvb _ \uparrow _ K?$
 (K) 5 ✓ (L) 2
 (M) 4 (N) 10
 112| $cvb \uparrow i enxb CuSO_4 Gi eY \uparrow Kgb?$
 (K) Kvj (L) $mv _ \uparrow v$ ✓
 (M) jvj (N) bxj
 113| $125 Mvg Z \uparrow Z \uparrow _ \uparrow K KZ Mvg Kcvi mvj \uparrow dU Dr cb nq?$
 (K) $101.05 Mvg$ (L) $79.9 Mvg$ ✓
 (M) $12.2 Mvg$ (N) $32.0.2 Mvg$
 114| $\uparrow h ms \uparrow K \uparrow Zi m \uparrow v \uparrow h _ , \uparrow K \uparrow b v e _ i AY \uparrow Z Zvi Dcv _ vb$
 $c \uparrow i g \uparrow Y mgn ci _ \uparrow _ i i mv \uparrow _ \uparrow K f \uparrow e msh^3 Av \uparrow Q, Zv \uparrow _ \uparrow Lv \uparrow b v hvq \acute{o}$
 (K) $AvYieK ms \uparrow KZ$ (L) $Mv \uparrow bK ms \uparrow KZ$ ✓
 (M) $_ j ms \uparrow KZ$ (N) $i \uparrow m \uparrow qv bK ms \uparrow KZ$
 115| $\uparrow K \uparrow b v c _ \uparrow _ i GK \uparrow g \uparrow j n \uparrow j \uparrow \uparrow$
 (i) $\uparrow h c \uparrow i g \uparrow Y A _ \uparrow \uparrow f \uparrow M \uparrow W i msL _ vi mgvb msL _ K AY, c \uparrow i g \uparrow Y$
 $ev Avqb _ \uparrow _ K |$



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(ii) $\text{c} \text{v} \text{ig} \text{Y} \text{ie} \text{K} \text{ ev} \text{ Av} \text{ie} \text{K} \text{ fi} \text{K} \text{ M} \text{g} \text{ c} \text{K} \text{v} \text{K} \text{ Ki} \text{t} \text{j} \text{ th} \text{ c} \text{ig} \text{Y} \text{ c} \text{v} \text{I} \text{q} \text{v} \text{ h} \text{v} \text{q} \text{I}$

(iii) $\text{th} \text{ c} \text{ig} \text{Y} \text{ c} \text{g} \text{Y} \text{ Z} \text{vcg} \text{v} \text{I} \text{v} \text{ I} \text{ P} \text{v} \text{c} \text{ 22.4} \text{ j} \text{U} \text{vi} \text{ Av} \text{q} \text{Zb}$
 $\text{ie} \text{g} \text{v} \text{b}$

ৱবপি তকবলু মলক?

(K) i l ii (L) i l iii

(M) i, ii l iii ✓ (N) ii l iii

116 | $\text{c} \text{g} \text{Y} \text{ Z} \text{vcg} \text{v} \text{I} \text{v} \text{ I} \text{ P} \text{v} \text{c} \text{ 32} \text{ M} \text{v} \text{g} \text{ Av} \text{ } \text{Rb} \text{ I} \text{ 17} \text{ M} \text{v} \text{g}$
 $\text{Av} \text{g} \text{v} \text{b} \text{q} \text{v} \text{ M} \text{v} \text{f} \text{mi} \text{ Av} \text{q} \text{Zb} \text{N}$

(i) $\text{mg} \text{v} \text{b}$

(ii) $\text{KL} \text{t} \text{bv} \text{ mg} \text{v} \text{b} \text{ bq}$

(iii) $22.4 \text{ j} \text{U} \text{vi}$

ৱবপি তকবলু মলক?

(K) i (L) i l ii

(M) i l iii ✓ (N) i, ii l iii

118 | $32 \text{ M} \text{v} \text{g} \text{ Av} \text{ } \text{Rb} \text{ I} \text{ 44} \text{ M} \text{v} \text{g} \text{ CO}_2 \text{ G} \text{ AY} \text{ msL} \text{v} \text{N}$

(i) $\text{mg} \text{v} \text{b}$

(ii) 6.02×10^{23}

(iii) $\text{KL} \text{t} \text{bv} \text{ mg} \text{v} \text{b} \text{ bq}$

ৱবপি তকবলু মলক?

(K) i (L) i l ii ✓

(M) i l iii (N) i, ii l iii

119 | $\text{c} \text{g} \text{Y} \text{ Z} \text{vcg} \text{v} \text{I} \text{v} \text{ I} \text{ P} \text{v} \text{c} \text{N}$

(i) $16 \text{ M} \text{v} \text{g} \text{ O}_2 \text{ Gi} \text{ Av} \text{q} \text{Zb} \text{ 11.2} \text{ j} \text{U} \text{vi}$

(ii) $16 \text{ M} \text{v} \text{g} \text{ CO}_2 \text{ Gi} \text{ Av} \text{q} \text{Zb} \text{ 22.4} \text{ j} \text{U} \text{vi}$

(iii) $100 \text{ M} \text{v} \text{g} \text{ CaCO}_3 \text{ Gi} \text{ Av} \text{q} \text{Zb} \text{ 22.4} \text{ j} \text{U} \text{vi}$

ৱবপি তকবলু মলক?

(K) i l ii (L) i l iii ✓

(M) ii l iii (N) i, ii l iii

120 | $\text{j} \text{v} \text{U} \text{b} \text{ b} \text{v} \text{g} \text{ t} \text{K} \text{ m} \text{o} \text{ c} \text{Z} \text{X} \text{K} \text{N}$

(i) Na

(ii) Ca

(iii) Cu

ৱবপি তকবলু মলক?

(K) i l ii (L) i l iii ✓

(M) ii l iii (N) i, ii l iii

121 | $\text{c} \text{g} \text{ I} \text{ } \text{Z} \text{X} \text{q} \text{ e} \text{Y} \text{ i} \text{ c} \text{Z} \text{X} \text{K} \text{N}$

(i) Cl

(ii) Al

(iii) Ca

ৱবপি তকবলু মলক?

(K) i l ii

(L) i l iii

(M) ii l iii ✓

(N) i, ii l iii

122 | $\text{c} \text{g} \text{ I} \text{ } \text{Z} \text{Z} \text{X} \text{q} \text{ e} \text{Y} \text{ i} \text{ c} \text{Z} \text{X} \text{K} \text{N}$

(i) Cl

(ii) Zn

(iii) Br

ৱবপি তকবলু মলক?

(K) i l ii ✓

(L) i l iii

(M) ii l iii

(N) i, ii l iii

123 | $1 \text{ th} \text{v} \text{R} \text{v} \text{Zv} \text{ we} \text{I} \text{k} \text{o} \text{ t} \text{g} \text{S} \text{j}$

(i) H

(ii) Na

(iii) B

ৱবপি তকবলু মলক?

(K) i

(L) i l ii ✓

(M) i, ii l iii

(N) i l iii

124 | $\text{d} \text{m} \text{d} \text{i} \text{v} \text{m} \text{ (P) Gi}$

(i) $\text{me} \text{t} \text{kl} \text{ K} \text{Y} \text{c} \text{t} \text{I} \text{ B} \text{t} \text{j} \text{K} \text{U} \text{b} \text{ msL} \text{v} \text{ 5}$

(ii) $\text{th} \text{v} \text{R} \text{v} \text{Zv} \text{ 3.5}$

(iii) $\text{B} \text{t} \text{j} \text{K} \text{U} \text{b} \text{ we} \text{b} \text{v} \text{m}$

$1s^2 2s^2 2p^6 3s^2 3p^1 3p_y^1 3p_z^1$

ৱবপি তকবলু মলক?

(K) i

(L) i l ii

(M) i l iii

(N) i, ii l iii ✓

125 | $\text{th} \text{S} \text{M} \text{g} \text{j} \text{K} \text{N}$

(i) $\text{G} \text{K} \text{v} \text{a} \text{K} \text{ c} \text{ig} \text{Y} \text{i} \text{ mg} \text{S} \text{t} \text{q} \text{ M} \text{v} \text{Z}$

(ii) $\text{Av} \text{q} \text{t} \text{bi} \text{ b} \text{v} \text{q} \text{ Av} \text{Pi} \text{Y} \text{ K} \text{t} \text{i}$

(iii) $\text{ab} \text{v} \text{Z} \text{t} \text{K} \text{ ev} \text{ F} \text{Y} \text{v} \text{Z} \text{t} \text{K} \text{ Av} \text{av} \text{b} \text{we} \text{I} \text{k} \text{o} \text{ nq}$

ৱবপি তকবলু মলক?

(K) i

(L) i l ii

(M) i l iii

(N) i, ii l iii ✓

126 | $-2 \text{ Av} \text{av} \text{b} \text{ we} \text{I} \text{k} \text{o} \text{ th} \text{S} \text{M} \text{g} \text{j} \text{K} \text{N}$

(i) $\text{K} \text{ve} \text{t} \text{b} \text{U}$

(ii) $\text{bv} \text{BU} \text{v} \text{BU}$

(iii) $\text{dm} \text{t} \text{d} \text{w} \text{b} \text{q} \text{v} \text{g}$

ৱবপি তকবলু মলক?

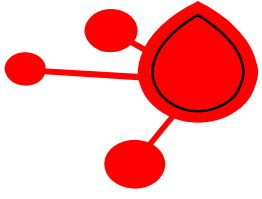
(K) i ✓

(L) i l ii

(M) i l iii

(N) i, ii l iii

127 | $2 \text{ j} \text{U} \text{v} \text{i} \text{ i} \text{ e} \text{Y} \text{ t} \text{m} \text{ig} \text{t} \text{g} \text{v} \text{j} \text{v} \text{i} \text{ n} \text{te} \text{ G} \text{t} \text{Z} \text{N}$



স্টুডেন্ট গাইড লাইন

(i) 58.5 Mvg NaCl thvM Ki+j

(ii) 212 Mvg Na₂CO₃ thvM Ki+j

(iii) 100 Mvg CaCO₃ thvM Ki+j

wb+Pi tKvbU mVK?

(K) i l ii (L) i l iii ✓

(M) ii l iii (N) i, ii l iii

128| tgvjvi `eY ejtZ eSqN

(i) 2 jUv+i 200 Mvg CaCO₃

(ii) 1 jUv+i 106 Mvg Na₂CO₃

(iii) 2 jUv+i 40 Mvg NaOH

wb+Pi tKvbU mVK?

(K) i l ii ✓ (L) i l iii

(M) ii l iii (N) i, ii l iii

129| NaOH thsMUi t+y+ÎN

(i) Na Gi kZKiv msh³ 59%

(ii) O Gi kZKiv msh³ 40%

(iii) H Gi kZKiv msh³ 25%

wb+Pi tKvbU mVK?

(K) i l ii (L) i l iii

(M) ii l iii ✓ (N) i, ii l iii

130| Z+Zi (e-fUq+j i)N

(i) AvYek ms+KZ CuSO₄.5H₂O

(ii) tKjvm MV+bi Rb+ tKjvm cvib Acivnh

(iii) tKjvm cvibi msh³ 5%

wb+Pi tKvbU mVK?

(K) i (L) i l ii ✓

(M) ii l iii (N) i, ii l iii

131| j ms+KZ-

(i) iagvÎ ths+Mi tejvq c+hvR

(ii) ths+Mi AY+Z we`gvb cigvYmg+ni AbciZ cKvk K+i

(iii) ths+M we`gvb tgs+jmg+ni kZKiv msh³ t+K j

ms+KZ wbyq Kiv hvq|

wb+Pi tKvbU mVK?

(K) i (L) i l ii

(M) ii l iii (N) i, ii l iii ✓

132| CH wb+Pi tKvb ths+Mi j ms+KZ?

(i) B+ b

(ii) A`vmmUj b

(iii) t+ebRb

wb+Pi tKvbU mVK?

(K) i, ii l iii (L) i l ii

(M) ii l iii ✓ (N) i l iii

133| HCl Drcv`+bi Rb+ 1 Mvg H₂ Gi mv+ 70 Mvg Cl₂ thvM Kiv nj; we+mqU+ZN

(i) Cl₂ j+gUs we+mqK

(ii) Drcb HCl Gi cigvY 36.5 Mvg

(iii) H₂ j+gUs we+mqK

wb+Pi tKvbU mVK?

(K) i l ii

(L) i l iii

(M) ii l iii

(N) i, ii l iii ✓

134| 249.5 Mvg e+fUq+j K DËB K+i 150 Mvg mv+ v cvDWvi cvIqv tMj; G+y+ÎN

(i) mv+ v cvDWvi CuCO₃

(ii) Drcv` i kZKiv cigvY 94%

(iii) e+fUq+j i ms+KZ CuSO₄.5H₂O

wb+Pi tKvbU mVK?

(K) i l ii

(L) i l iii

(M) ii l iii ✓

(N) i, ii l iii

135| j+gUs we+mqK

(i) we+mqvi mgq th we+mqK Aeikó +K bv

(ii) we+mqvi mgq th we+mqK Aeikó t+K hvq

(iii) Drcv` i cigvY in+me Ki+Z e'eüZ nq

wb+Pi tKvbU mVK?

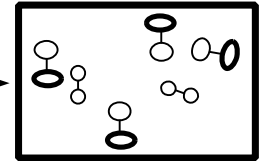
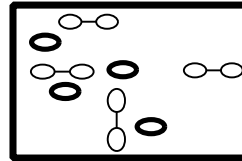
(K) i, ii l iii

(L) i l ii

(M) i l iii ✓

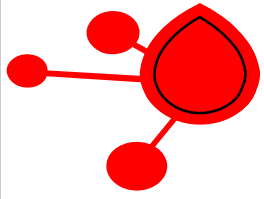
(N) ii l iii

136|



○ = অক্সিজেনের অনু
● = ধাতব ম্যাগনেসিয়াম
Dc+i i Qe+Z

○-○ = ম্যাগনেসিয়াম অক্সাইড



স্টুডেন্ট গাইড লাইন

- (i) $g^{\circ}M^{\circ}b^{\circ}mqvq$ A · vBW Drcv`
(ii) $A^{\circ} · \ddagger Rb^{\circ} \ddagger j^{\circ}g^{\circ}Us^{\circ} \ddagger e^{\circ}\mu qK$
(iii) $g^{\circ}M^{\circ}b^{\circ}mqvq \ddagger j^{\circ}g^{\circ}Us^{\circ} \ddagger e^{\circ}\mu qK$
ৱb†Pi †Kvb†U m†VK?
(K) i, ii I iii (L) i I ii
(M) i I iii✓ (N) ii I iii
137| $A^{\circ}vb^{\circ}jvi\ddot{N}$
(i) $me^{\circ}\ddagger P^{\circ}q^{\circ} \ddagger e^{\circ}i^{\circ} \times i^{\circ}vm^{\circ}q^{\circ}bK^{\circ} c^{\circ}v_{-}$
(ii) cvq 95.5% $\ddagger e^{\circ}i^{\circ} \times$
(iii) $M^{\circ}e^{\circ}lY^{\circ}vi^{\circ} mgq \ddagger e^{\circ}k^{\circ}lY^{\circ}xq^{\circ} K^{\circ}v^{\circ}R^{\circ} e^{\circ}e^{\circ}üZ^{\circ} nq$
ৱb†Pi †Kvb†U m†VK?

- (K) i (L) i I ii
(M) ii I iii (N) i, ii I iii✓
➤ $\ddagger b^{\circ}\ddagger Pi^{\circ} Z^{\circ}_{-} \ddagger wU^{\circ} co^{\circ} Ges^{\circ} 138^{\circ} I^{\circ} 140^{\circ} bs^{\circ} c^{\circ}\ddagger ki^{\circ} D^{\circ}Ei^{\circ} \ddagger v^{\circ}It$
 $GK^{\circ}U^{\circ} cv^{\circ}\ddagger I^{\circ}i^{\circ} c^{\circ}wb^{\circ}\ddagger Z^{\circ} A^{\circ} · \ddagger Rb^{\circ} cigvYi^{\circ} msL^{\circ}v^{\circ} 1.505 \times 10^{24}$
138| $cv^{\circ}\ddagger I^{\circ} KZ^{\circ} tg^{\circ}vj^{\circ} A^{\circ} · \ddagger Rb^{\circ} cigvY^{\circ} Av^{\circ}\ddagger Q^{\circ}?$
(K) 2.5✓ (L) 5
(M) 10 (N) 18

- 139| $cv^{\circ}\ddagger I^{\circ}i^{\circ} c^{\circ}wb^{\circ}i^{\circ} fi^{\circ} KZ^{\circ}?$
(K) 45g ✓ (L) 90g
(M) 180g (N) 360g
140| $cv^{\circ}\ddagger I^{\circ}i^{\circ} c^{\circ}wb^{\circ}\ddagger Z^{\circ} Dci^{\circ}_{-} Z^{\circ} n^{\circ}B^{\circ}\ddagger W^{\circ}\ddagger Rb^{\circ} cigvYi^{\circ} msL^{\circ}v^{\circ} KZ^{\circ}U^{\circ}?$
(K) 1.505×10^{24} (L) 3.01×10^{24} ✓
(M) 6.02×10^{23} (N) $\ddagger Kvb^{\circ}UB^{\circ} bq$

- $\ddagger b^{\circ}\ddagger Pi^{\circ} Z^{\circ}_{-} \ddagger jv^{\circ} c^{\circ} Ges^{\circ} 141^{\circ} I^{\circ} 142^{\circ} bs^{\circ} c^{\circ}\ddagger ki^{\circ} D^{\circ}Ei^{\circ} \ddagger v^{\circ}I^{\circ}|$
5g $\ddagger K^{\circ}vK^{\circ} (K^{\circ}v^{\circ}b^{\circ})$ 5 5g $A^{\circ} · \ddagger Rb^{\circ} \ddagger e^{\circ}\mu qv^{\circ} K^{\circ}\ddagger i^{\circ} K^{\circ}v^{\circ}Y^{\circ}-W^{\circ}b^{\circ}-A^{\circ} · vBW$
 $c^{\circ}Z^{\circ} Kiv^{\circ}ni^{\circ}|$

- 141| $K^{\circ}v^{\circ}b^{\circ} cigvYi^{\circ} msL^{\circ}v^{\circ} KZ^{\circ}?$
(K) 2.5×10^{23} ✓ (L) 6.02×10^{23}
(M) 4.01×10^{22} (N) 1.2×10^{22}
142| $\ddagger b^{\circ}\ddagger Pi^{\circ} \ddagger Kvb^{\circ}U^{\circ} Ae^{\circ}k^{\circ}ó^{\circ} \ddagger v^{\circ}K^{\circ}?$
(K) 0.26 mole $\ddagger K^{\circ}vK^{\circ}$ ✓ (L) 0.15625 mole $A^{\circ} · \ddagger Rb^{\circ}$
(M) 0.4167 moe $\ddagger K^{\circ}vK^{\circ}$ (N) $\ddagger Kvb^{\circ}UB^{\circ} bq$

মিঃগ Aa^vqt i^vqvqbK^v e^vμqv

- 1| $\ddagger f^{\circ}\ddagger b^{\circ}M^{\circ}v^{\circ}\ddagger i^{\circ} \ddagger b^{\circ}\ddagger Pi^{\circ} \ddagger Kvb^{\circ} G^{\circ}m^{\circ}W^{\circ}U^{\circ} Dci^{\circ}_{-} Z^{\circ} \ddagger v^{\circ}K^{\circ}?$
(K) $m^{\circ}v^{\circ}B^{\circ}U^{\circ}K^{\circ} G^{\circ}m^{\circ}W^{\circ}$ (L) $G^{\circ}m^{\circ}U^{\circ}K^{\circ} G^{\circ}m^{\circ}W^{\circ}$ ✓
(M) $U^{\circ}v^{\circ}I^{\circ}U^{\circ}v^{\circ}i^{\circ}K^{\circ} G^{\circ}m^{\circ}W^{\circ}$ (N) $G^{\circ}m^{\circ}K^{\circ}i^{\circ}e^{\circ}K^{\circ} G^{\circ}m^{\circ}W^{\circ}$
2| $tg^{\circ}sg^{\circ}wQ^{\circ} K^{\circ}vgo^{\circ} \ddagger \ddagger j^{\circ} \ddagger Z^{\circ}_{-} \ddagger v^{\circ}b^{\circ} \ddagger Kvb^{\circ}U^{\circ} e^{\circ}envi^{\circ} Kiv^{\circ} th^{\circ}Z^{\circ} cv^{\circ}\ddagger i^{\circ}?$
(K) $K^{\circ}j^{\circ}Pb^{\circ}$ ✓ (L) $\ddagger f^{\circ}\ddagger b^{\circ}M^{\circ}v^{\circ}i^{\circ}$

- (M) $L^{\circ}v^{\circ}e^{\circ}i^{\circ} j^{\circ}e^{\circ}Y^{\circ}$ (N) $c^{\circ}wb^{\circ}$
3| $G^{\circ}U^{\circ}vm^{\circ}W^{\circ} R^{\circ>vZ^{\circ>xq^{\circ} J^{\circ}Ia^{\circ} \ddagger me^{\circ}\ddagger b^{\circ} \ddagger Kvb^{\circ} ai^{\circ}\ddagger b^{\circ} \ddagger e^{\circ}\mu qv^{\circ} m^{\circ}a^{\circ}úb^{\circ} nq^{\circ}?$
(K) $ckgb^{\circ}$ ✓ (L) $\ddagger nb^{\circ}$
(M) $ms^{\circ}\ddagger hv^{\circ}Rb^{\circ}$ (N) $c^{\circ}i^{\circ}Z^{\circ}_{-}vb^{\circ}$

- 4| $H_2SO_4 + MgO \rightarrow \ddagger e^{\circ}\mu qvq\ddot{N}$
(i) $Zvc^{\circ} Drcb^{\circ} nq$
(ii) $B^{\circ}\ddagger j^{\circ}KUb^{\circ} \ddagger vb^{\circ}\ddagger i^{\circ} N^{\circ}\ddagger U^{\circ}$
(iii) $Aat^{\circ}\ddagger yc^{\circ} c^{\circ}to$

- ৱb†Pi †Kvb†U m†VK?**
(K) i✓ (L) ii I iii
(M) i I iii (N) i, ii I iii

- 5| $\ddagger b^{\circ}\ddagger Pi^{\circ} \ddagger Kvb^{\circ} c^{\circ}v^{\circ}_{-} \ddagger g^{\circ}sj^{\circ}mg^{\circ}\ddagger ni^{\circ} GK^{\circ}U^{\circ} \ddagger b^{\circ} \ddagger o^{\circ} kZKiv^{\circ} msh^{\circ}iZ$
 $\ddagger v^{\circ}K^{\circ}?$
(K) $th^{\circ}sh^{\circ}MK^{\circ} c^{\circ}v^{\circ}_{-}$ (L) $\ddagger e^{\circ}i^{\circ} \times c^{\circ}v^{\circ}_{-}$ ✓
(M) $L^{\circ}ib^{\circ}R^{\circ} c^{\circ}v^{\circ}_{-}$ (N) $\ddagger Re^{\circ} c^{\circ}v^{\circ}_{-}$

- 6| $\ddagger Kvb^{\circ} c^{\circ}v^{\circ}_{-} i^{\circ} \ddagger f^{\circ}sz^{\circ} c^{\circ}i^{\circ}e^{\circ}Z^{\circ}\ddagger bi^{\circ} mgq^{\circ} Gi^{\circ} \ddagger g^{\circ}sj^{\circ}mg^{\circ}\ddagger ni^{\circ} kZKiv^{\circ}$
 $msh^{\circ}iZ\ddot{N}$
(K) $c^{\circ}i^{\circ}e^{\circ}i^{\circ}ZZ^{\circ} nq$
(L) $Ac^{\circ}i^{\circ}e^{\circ}i^{\circ}ZZ^{\circ} \ddagger v^{\circ}K^{\circ}$ ✓
(M) $nvm^{\circ} cvq$
(N) $e^{\circ}i^{\circ} \times cvq$

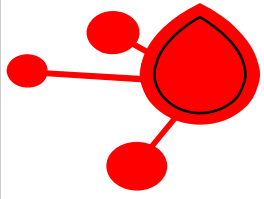
- 7| $c^{\circ}wb^{\circ}\ddagger K^{\circ} 100^{\circ}C^{\circ} Zvcgv^{\circ}i^{\circ}vq^{\circ} D^{\circ}Eß^{\circ} K^{\circ}\ddagger i^{\circ} R^{\circ>j^{\circ>xq^{\circ} e^{\circ}v^{\circ}e^{\circ}ú^{\circ} c^{\circ}i^{\circ}i^{\circ}YZ$
 $Ki^{\circ}\ddagger j^{\circ} Gi^{\circ} kZKiv^{\circ} msh^{\circ}iZ\ddot{N}$
(K) $e^{\circ}i^{\circ} \times cv^{\circ}\ddagger e^{\circ}$
(L) $nvm^{\circ} cv^{\circ}\ddagger e^{\circ}$
(M) $c^{\circ}i^{\circ}e^{\circ}i^{\circ}ZZ^{\circ} n^{\circ}\ddagger e^{\circ}$
(N) $Ac^{\circ}i^{\circ}e^{\circ}i^{\circ}ZZ^{\circ} \ddagger v^{\circ}K^{\circ}\ddagger e^{\circ}$ ✓

- 8| $\ddagger Kvb^{\circ} c^{\circ}v^{\circ}_{-} i^{\circ} i^{\circ}vm^{\circ}q^{\circ}bK^{\circ} c^{\circ}i^{\circ}e^{\circ}Z^{\circ}b^{\circ} n^{\circ}\ddagger j^{\circ} Gi^{\circ} \ddagger g^{\circ}smg^{\circ}\ddagger ni^{\circ} kZKiv^{\circ}$
 $msh^{\circ}iZ\ddot{N}$
(K) $c^{\circ}i^{\circ}e^{\circ}i^{\circ}ZZ^{\circ} nq$ ✓
(L) $Ac^{\circ}i^{\circ}e^{\circ}i^{\circ}ZZ^{\circ} \ddagger v^{\circ}K^{\circ}$
(M) $nvm^{\circ} cvq$
(N) $e^{\circ}i^{\circ} \times cvq$

- 9| $\ddagger f^{\circ}sz^{\circ} c^{\circ}i^{\circ}e^{\circ}Z^{\circ}\ddagger b^{\circ} c^{\circ}i^{\circ}e^{\circ}i^{\circ}ZZ^{\circ} c^{\circ}v^{\circ}_{-} \ddagger K^{\circ} \ddagger K^{\circ} c^{\circ}\ddagger ei^{\circ} Ae^{\circ}_{-}vq^{\circ} \ddagger d^{\circ}i^{\circ>i^{\circ}q^{\circ} Avbv^{\circ}$
 $hvq^{\circ}?$

- (K) $Avbv^{\circ} hvq^{\circ}$ ✓
(L) $Avbv^{\circ} hvq^{\circ} bv$
(M) $\ddagger d^{\circ>i^{\circ>i^{\circ}q^{\circ} Avbv^{\circ} mnR^{\circ}$
(N) $\ddagger d^{\circ>i^{\circ>i^{\circ}q^{\circ} Avbv^{\circ} K^{\circ}Vb^{\circ}$

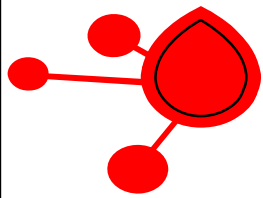
- 10| $i^{\circ}vm^{\circ}q^{\circ}bK^{\circ} c^{\circ}i^{\circ}e^{\circ}Z^{\circ}\ddagger b^{\circ} e^{\circ}Üb^{\circ} f^{\circ>v^{\circ>2v^{\circ} I^{\circ} bZb^{\circ} e^{\circ}Üb^{\circ} MV^{\circ}\ddagger bi^{\circ} mgq$
 $\ddagger K^{\circ}\ddagger mi^{\circ} c^{\circ}i^{\circ}e^{\circ}Z^{\circ}b^{\circ} nq^{\circ}?$



স্টুডেন্ট গাইড লাইন

- (K) $e\ddot{U}b\ k\ddot{u}^3\ i$
(L) $Z\ddot{v}ck\ddot{u}^3\ i\checkmark$
(M) $i\ddot{v}m\ddot{v}q\ddot{u}bK\ k\ddot{u}^3\ i$
(N) $\ddot{u}m\ddot{t}\div\ddot{t}gi$
- 11| $\ddot{t}gv\ddot{t}gi\ c\ddot{a}vb\ D\ddot{c}v\`vb\ Kx?$
(K) $c\ddot{w}b$
(L) $\ddot{W}\ddot{t}Rj$
(M) $n\ddot{v}B\ddot{W}K\ddot{v}eb\checkmark$
(N) $\ddot{y}vi$
- 12| $H_2O(s) \rightleftharpoons H_2O(l) \rightleftharpoons H_2O(g); c\ddot{r}ieZb\ddot{u}\ Kx\ ai\ddot{t}bi?$
(K) $\ddot{t}\ddot{f}\ddot{S}Z\ c\ddot{r}ieZb\checkmark$
(L) $i\ddot{v}m\ddot{v}q\ddot{u}bK\ c\ddot{r}ieZb$
(M) $i\ddot{c}v\ddot{S}iKiY\ c\ddot{r}ieZb$
(N) $m\ddot{v}aviY\ c\ddot{r}ieZb$
- 13| $\ddot{t}gv\ddot{g}\ R\ddot{v}j\ddot{v}\ddot{t}bi\ mgq\ Kx\ ai\ddot{t}bi\ c\ddot{r}ieZY\ N\ddot{t}U?$
(K) $i\ddot{v}m\ddot{v}q\ddot{u}bK\ c\ddot{r}ieZb\ nq$
(L) $\ddot{t}\ddot{f}\ddot{S}Z\ c\ddot{r}ieZb\ nq$
(M) $\ddot{t}\ddot{f}\ddot{S}Z\ i\ i\ddot{v}m\ddot{v}q\ddot{u}bK\ D\ddot{f}q\ ai\ddot{t}bi\ c\ddot{r}ieZb\ nq\checkmark$
(N) $i\ddot{c}v\ddot{S}i\ KiY\ c\ddot{r}ieZb$
- 14| $X + 2HCl \rightarrow CaCl_2 + CO_2 + Y; G\ \ddot{v}e\ddot{u}q\ddot{t}Z\ X\ i\ Y\ Kx?$
(K) $CaNO_3\ i\ NO_2$
(L) $CaCO_3\ i\ H_2O\ \checkmark$
(M) $CaO\ i\ O_2$
(N) $CaCO_3\ i\ H_2$
- 15| $CH_4(g) + 2O_2(g) \xrightarrow{\Delta} CO_2(g) + 2H_3O(g); \ddot{v}e\ddot{u}q\ddot{u}\ K\ddot{L}b\ msN\ddot{u}Z\ nq?$
(K) $c\ddot{v}K\ddot{u}ZK\ M\`v\ddot{m}\ R\ddot{v}j\ddot{v}\ddot{t}j\checkmark$
(L) $c\ddot{w}b\ Mig\ Ki\ddot{t}j$
(M) $\ddot{t}gv\ddot{g}\ R\ddot{v}j\ddot{v}\ddot{t}j$
(N) $e\ddot{v}Z\ddot{v}m\ D\ddot{E}\ddot{B}\ Ki\ddot{t}j$
- 16| $\ddot{t}K\ddot{v}b\ddot{u}\ \ddot{t}\ddot{f}\ddot{S}Z\ c\ddot{r}ieZb?$
(K) $n\ddot{v}B\ddot{t}W\ddot{t}Rb\ i\ A\ddot{u}\cdot\ddot{t}R\ddot{t}bi\ ms\ddot{t}h\ddot{v}\ddot{t}M\ c\ddot{w}b\ \hat{Z}\ddot{u}i$
(L) $Rj\ddot{x}q\ e\ddot{v}\ddot{u}\ddot{t}K\ Le\ V\ddot{v}_v\ K\ddot{t}i\ eid\ \hat{Z}\ddot{u}i\ \checkmark$
(M) $\ddot{t}gv\ddot{g}\ddot{e}\ddot{u}Z\ R\ddot{v}j\ddot{v}\ddot{t}b\ddot{v}$
(N) $\ddot{t}j\ddot{v}n\ddot{v}q\ g\ddot{u}i\ P\ddot{v}\ c\ddot{v}$
- 17| $i\ddot{v}m\ddot{v}q\ddot{u}bK\ \ddot{v}e\ddot{u}q\ddot{u}\ Z\ddot{v}\ c\ddot{r}ieZ\ddot{t}bi\ K\ddot{v}iY\ Kx?$
(K) $e\ddot{U}b\ A\ddot{c}i\ddot{e}i\ddot{e}ZZ\ _vK\ddot{v}$
(L) $kZK\ddot{v}\ msh\ddot{u}Z\ A\ddot{c}i\ddot{e}i\ddot{e}ZZ\ _vK\ddot{v}$
(M) $Z\ddot{v}\ c\ddot{t}q\ddot{v}M$

- (N) $e\ddot{U}b\ f\ddot{v}\ddot{t}v\ i\ bZb\ e\ddot{U}b\ M\ddot{v}\ddot{t}b\ k\ddot{u}^3\ i\ c\ddot{r}ieZb\checkmark$
- 18| $i\ddot{v}m\ddot{v}q\ddot{u}bK\ e\ddot{U}b\ g\ddot{t}Z\ddot{N}$
(K) $GK\ cK\ddot{v}i\ e\ddot{U}b$
(L) $GK\ cK\ddot{v}i\ k\ddot{u}^3\ \checkmark$
(M) $GK\ ai\ddot{t}bi\ A\ddot{v}K\ddot{I}Y\ ej$
(N) $GK\ ai\ddot{t}bi\ msK\ddot{u}^3\ ej$
- 19| $\ddot{v}e\ddot{u}q\ddot{u}\ \ddot{v}\`tKi\ D\ddot{c}i\ \ddot{v}f\ddot{E}\ K\ddot{t}i\ i\ddot{v}m\ddot{v}q\ddot{u}bK\ \ddot{v}e\ddot{u}q\ddot{t}K\ Kq\ f\ddot{v}\ddot{M}\ f\ddot{v}\ddot{M}\ K\ddot{v}\ h\ddot{v}q?$
(K) $2\ f\ddot{v}\ddot{t}M\checkmark$
(L) $3\ f\ddot{v}\ddot{t}M$
(M) $4\ f\ddot{v}\ddot{t}M$
(N) $5\ f\ddot{v}\ddot{t}M$
- 20| $GKg\ddot{L}x\ \ddot{v}e\ddot{u}q\ddot{u}\ \ddot{t}\ddot{y}\ddot{t}\ddot{t}\ \ddot{v}e\ddot{u}q\ddot{u}\ i\ D\ddot{r}c\ddot{v}\`i\ g\ddot{t}a\`i\ \ddot{v}b\ddot{t}Pi\ \ddot{t}K\ddot{v}\ \ddot{P}\ddot{y}\ddot{u}\ e\`envi\ K\ddot{t}i\ i\ddot{v}m\ddot{v}q\ddot{u}bK\ mg\ddot{x}KiY\ D\ddot{c}\`vcb\ K\ddot{v}\ nq?$
(K) $\rightarrow\checkmark$
(L) $\rightleftharpoons$
(M) $=$
(N) $\cong$
- 21| $\ddot{v}b\ddot{t}Pi\ \ddot{t}K\ddot{v}\ \ddot{v}e\ddot{u}q\ddot{u}\ \ddot{t}L\ddot{v}j\ddot{v}c\ddot{v}\ddot{t}\ddot{t}\ msN\ddot{u}Z\ n\ddot{t}j\ GKg\ddot{L}x\ nq?$
(K) $2H_2(g) + O_2(g) \xrightarrow{\Delta} H_2O(l)$
(L) $CH_4(g) + 2O_2(g) \xrightarrow{\Delta} CO_2(g) + 2H_3O(g)$
(M) $PCl_2(l) \xrightarrow{\Delta} PCl_3(l) + Cl_2(g)$
(N) $CaCO_3(s) \xrightarrow{\Delta} CaO(s) + CO_2(g)\checkmark$
- 22| $\ddot{t}K\ddot{v}\ \ddot{v}e\ddot{u}q\ddot{t}K\ GKg\ddot{L}x\ K\ddot{v}i\ D\ddot{c}v\ddot{q}\ Kx?$
(K) $\ddot{v}e\ddot{u}q\ddot{u}\ A\ddot{c}m\ddot{v}iY$
(L) $Z\ddot{v}c\ c\ddot{t}q\ddot{v}M$
(M) $\ddot{t}h\ddot{t}K\ddot{v}\ GK\ddot{u}\ D\ddot{r}c\ddot{v}\`b\ A\ddot{c}m\ddot{v}iY\checkmark$
(N) $P\ddot{v}c\ c\ddot{t}q\ddot{v}M$
- 23| $A\ddot{u}Re\ G\ddot{u}m\ddot{t}Wi\ D\ddot{c}\`i\ Z\ddot{t}Z\ B_vbj\ i\ \hat{R}e\ G\ddot{u}m\ddot{W}\ \ddot{v}e\ddot{u}q\ddot{u}\ K\ddot{t}i\ G\div\ddot{v}i\ D\ddot{r}cb\ K\ddot{t}i\ | G\ \ddot{v}e\ddot{u}q\ddot{u}\ GK\ddot{u}\ddot{U}\ddot{N}$
(K) $GKg\ddot{L}x\ \ddot{v}e\ddot{u}q\ddot{u}$
(L) $D\ddot{f}g\ddot{L}x\ \ddot{v}e\ddot{u}q\ddot{u}\checkmark$
(M) $m\ddot{a}\ddot{s}Lg\ddot{L}x\ \ddot{v}e\ddot{u}q\ddot{u}$
(N) $c\ddot{d}\ddot{v}rg\ddot{L}x\ \ddot{v}e\ddot{u}q\ddot{u}$
- 24| $cKZc\ddot{t}\ddot{y}\ c\ddot{v}q\ mKj\ \ddot{v}e\ddot{u}q\ddot{u}B\ Dch^3\ k\ddot{t}Z\ddot{N}$
(K) $GKg\ddot{L}x\ nq$
(L) $D\ddot{f}g\ddot{L}x\ nq\checkmark$
(M) $m\ddot{a}\ddot{s}Lg\ddot{L}x\ nq$
(N) $c\ddot{d}\ddot{v}rg\ddot{L}x\ nq$



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25| Zn^{2+} c ieZ^{+} bi Dci $f_{E}K^{+}$ i $vmqibK$ $e_{\mu qv}K$ Kq
f vM f vM Kiv hvq?

- (K) B f vM ✓
(L) Zb f vM
(M) Pv f vM
(N) cP f vM

26| Zn^{2+} Drcv x $e_{\mu qv} \Delta H$ Gi g vbN

- (K) $abvZK$
(L) $FYvZK$ ✓
(M) kb
(N) $AcieZZ$ vK

27| $N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$ GB $e_{\mu qv}KZ$

$K^{+}jvRj$ Zvc Drcb nq?

- (K) 90 $K^{+}jvRj$
(L) 92 $K^{+}jvRj$ ✓
(M) 102 $K^{+}jvRj$
(N) 180 $K^{+}jvRj$

28| $K^{+}vbi$ Dci $f_{E}K^{+}$ i $vmqibK$ $e_{\mu qv}$ $tkvYeb^{+}vm$ Kiv
nq bv?

- (K) $e_{\mu qv}$ mgq
(L) $e_{\mu qv}$ K
(M) $e_{\mu qv}$ $Z^{+}ci$ $cieZb$ ✓
(N) $B^{+}jKUb$ vbi

29| $CH_3CH_2OH + CH_3COOH \xrightarrow{H^{+}} A + H_2O$

GL v b A Kx?

- (K) $CH_2CH - CO - CH - OH$
(L) $CH_3CH_2 - CHOH - CH_2$
(M) $CH_3CH_2 - O - \overset{O}{\parallel} - CH_3$ ✓
(N) $CH_3CH_2 - OH - CH_2$

30| Zn^{2+} Drcv x $e_{\mu qv}$ $t_{y}^{+}i$ Kx N ^{+}U ?

- (K) Zn^{2+} Drcb nq✓
(L) Zn^{2+} $tkvIZ$ nq
(M) Zn^{2+} i $cieZb$ nq bv
(N) Zn^{2+} i $cieZY$ nq

31| i $vmqibK$ mgv $e_{\mu qv}$ $t_{c}^{+}Q^{+}Z$ $c_{v}^{+}i$ $tkvb$ $e_{\mu qv}$?

- (K) $GKGLx$ $e_{\mu qv}$
(L) $DfgLx$ $e_{\mu qv}$ ✓
(M) maL $e_{\mu qv}$
(N) c_{dv} $e_{\mu qv}$

32| $N_2(g) + O_2(g) \rightleftharpoons 2NO(g)$ GB $e_{\mu qv}KZ$ $K^{+}jvRj$
Zvc $tkvIZ$ nq?

- (K) 90 $K^{+}jvRj$
(L) 102 $K^{+}jvRj$
(M) 96 $K^{+}jvRj$
(N) 180 $K^{+}jvRj$ ✓

33| $B^{+}jKUb$ vbi $f_{E}K^{+}$ i $vmqibK$ $e_{\mu qv}K$ Kq
f vM f vM Kiv hvq?

- (K) B f vM ✓
(L) Zb f vM
(M) Pv f vM
(N) cP f vM

34| tiW (Redox) A $_K$?

- (K) $RviY$
(L) $eRviY$
(M) $RviY - eRviY$ ✓
(N) $RviY$ msL^v

35| $bi^{+}cy$ ev g^3 $tg^{+}ji$ $RviY$ msL^v KZ?

- (K) + 1
(L) + 2
(M) -1
(N) kb (0) ✓

36| $AavZmgtni$ $RviY$ msL^v $mvaviYZN$

- (K) $abvZK$
(L) $FYvZK$ ✓
(M) $bi^{+}cy$
(N) kb

37| O_2 G O Gi $RviY$ msL^v KZ?

- (K) kb ✓
(L) $abvZK$
(M) $FYvZK$
(N) cP

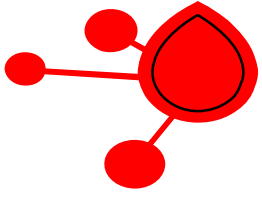
38| $tg^{+}ji$ $RviY$ msL^v $ib^{+}Pi$ $tkvb$ U mv^{+} $ma^{+}KZ$?

- (K) $Aav^{+}bi$ mv^{+}
(L) $thvRbx$ mv^{+}
(M) $B^{+}jKUb$ $eb^{+}mi$ mv^{+} ✓
(N) $RviY$ $gv^{+}bi$ mv^{+}

39| GK U $th^{+}M$ $tkv^{+}bv$ $tg^{+}ji$ $RviY$ msL^v H $th^{+}M$ e^{+} gvb

$Ab^{+}v^{+}$ $tg^{+}ji$, $K^{+}mi$ Dci bfj kxj ?

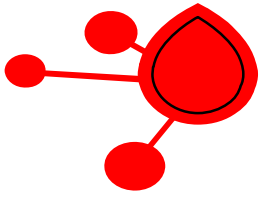
- (K) $B^{+}jKUb$ $eb^{+}vm$
(L) $thvRbx$



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- (M) $Avavb$
(N) $RviY msL^v$ ✓
- 40 | $gr\ddot{y}vi avZmg\ddot{n}i RviY msL^v KZ?$
(K) + 1
(L) + 2 ✓
(M) 1
(N) - 2
- 41 | $avZe nvBWB\ddot{W} nvB\ddot{W}R\ddot{b}i RviY msL^v KZ?$
(K) + 1
(L) + 2
(M) - 1 ✓
(N) - 2
- 42 | $mcvi A \cdot vB\ddot{W} A\ddot{W} \cdot \ddot{R}\ddot{b}i RviY msL^v KZ?$
(K) -1
(L) $-\frac{1}{2}$ ✓
(M) -2
(N) $kb^{\ddot{}}$ (0)
- 43 | $KMnO_4$ G Mn Gi $RviY msL^v KZ?$
(K) +6
(L) +7 ✓
(M) -7
(N) -6
- 44 | $K_2Cr_2O_7$ G Cr Gi $RviY msL^v KZ?$
(K) +6 ✓
(L) +7
(M) +5
(N) +4
- 44 | MnO_4^- Avq\ddot{b} MnGi $RviY msL^v KZ?$
(K) + 6
(L) + 7 ✓
(M) - 6
(N) - 7
- 46 | NO_3^- Avq\ddot{b} NGi $RviY msL^v KZ?$
(K) + 5 ✓
(L) + 6
(M) - 5
(N) - 6
- 47 | NaH I $LiAlH_4$ G $nvB\ddot{W}R\ddot{b}i RviY msL^v KZ?$
(K) + 2

- (L) + 1
(M) - 1 ✓
(N) - 2
- 48 | $B\ddot{j}KUb \ddot{v}bv\ddot{S}\ddot{t}i i gva\ddot{t}g msN\ddot{U}Z mKj \ddot{w}e\ddot{m}uq \ddot{w}b\ddot{P}i \ddot{t}Kvb \ddot{w}e\ddot{m}uq \ddot{U}i A\ddot{S}f^3?$
(K) $RviY \ddot{w}e\ddot{m}uq$
(L) $\ddot{w}eRviY \ddot{w}e\ddot{m}uq$
(M) $RviY-\ddot{w}eRviY \ddot{w}e\ddot{m}uq$ ✓
(N) $ckgb \ddot{w}e\ddot{m}uq$
- 49 | $\ddot{w}b\ddot{P}i \ddot{t}Kvb \ddot{w}e\ddot{m}uq \ddot{U} RviY-\ddot{w}eRviY \ddot{w}e\ddot{m}uq bq?$
(K) $ms\ddot{h}vRb \ddot{w}e\ddot{m}uq$
(L) $\ddot{w}e\ddot{h}vRb \ddot{w}e\ddot{m}uq$
(M) $\ddot{w}nb \ddot{w}e\ddot{m}uq$
(N) $Aat\ddot{t}y\ddot{c}b \ddot{w}e\ddot{m}uq$ ✓
- 50 | $\ddot{t}Kvb\ddot{U} RviK c^{\ddot{}}_v?$
(K) CO
(L) H_2S
(M) H_2
(N) O_2 ✓
- 51 | $\ddot{t}Kvb\ddot{U} \ddot{w}eRviK?$
(K) Cu^{2+}
(L) Fe^{2+} ✓
(M) Sn^{4+}
(N) Na^+
- 52 | $GK\ddot{U} RviY-\ddot{w}eRviY \ddot{w}e\ddot{m}uq RvbK c^{\ddot{}}_v\ddot{t}_i \ddot{t}y\ddot{t}i Kx N\ddot{t}U?$
(K) $B\ddot{j}KUb MnY K\ddot{t}i G\ddot{U} RwiZ nq$
(L) $B\ddot{j}KUb Z^{\ddot{v}}M K\ddot{t}i G\ddot{U} RwiZ nq$
(M) $B\ddot{j}KUb MnY K\ddot{t}i G\ddot{U} \ddot{w}eRwiZ nq$ ✓
(N) $B\ddot{j}KUb Z^{\ddot{v}}M K\ddot{t}i G\ddot{U} \ddot{w}eRwiZ nq$
- 53 | $GK\ddot{U} RviY-\ddot{w}eRviY \ddot{w}e\ddot{m}uq \ddot{w}eRviK c^{\ddot{}}_v\ddot{t}_i Kx N\ddot{t}U?$
(K) $B\ddot{j}KUb MnY K\ddot{t}i G\ddot{U} RwiZ nq$
(L) $B\ddot{j}KUb Z^{\ddot{v}}M K\ddot{t}i G\ddot{U} RwiZ nq$ ✓
(M) $B\ddot{j}KUb MnY K\ddot{t}i G\ddot{U} \ddot{w}eRwiZ nq$
(N) $B\ddot{j}KUb Z^{\ddot{v}}M K\ddot{t}i G\ddot{U} RviZ nq$
- 54 | $\ddot{t}Kvb\ddot{U} RviY \ddot{w}e\ddot{m}uq?$
(K) $Sn^{++} \rightarrow 2e + Sn^{++++}$ ✓
(L) $2Hg^{++} + 2e \rightarrow 2Hg$
(M) $Cl_2 + 2e \rightarrow 2Cl^-$
(N) $Fe^{3+} + e^- \rightarrow Fe^{2+}$



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55| $\text{SnCl}_2 + 2\text{HgCl}_2 = \text{SnCl}_4 + 2\text{HgCl}$ -G H_2O তে দ্রবীভূত হবে?
R₁ = Z নং?

- (K) Sn ✓
- (L) Hg
- (M) Cl
- (N) H

56| Mn^{2+} এর Z মান Fe^{3+} এর Z মানের h^3 গুণিতক Mn^{2+} এর Z মান কত? Fe^{3+} এর Z মান কত?

- (K) Fe^{3+} এর Z মান
- (L) Mn^{2+} এর Z মান ✓
- (M) Cl^- এর Z মান
- (N) H^+ এর Z মান

57| Fe^{2+} এর Z মান Fe^{3+} এর Z মানের h^3 গুণিতক Fe^{2+} এর Z মান কত? Fe^{3+} এর Z মান কত?

- (K) $2\text{FeCl}_2(aq) + \text{Cl}_2(g) \rightarrow 2\text{FeCl}_3(aq)$
- (L) $\text{PCl}_5(l) \xrightarrow{\Delta} \text{PCl}_3(l) + \text{Cl}_2(g)$
- (M) $2\text{H}_2\text{O}(l) \xrightarrow{\text{Zn}}$
- (N) $\text{Zn}(s) + \text{H}_2\text{SO}_4(aq) \rightarrow \text{ZnSO}_4(aq) + \text{H}_2(g)$ ✓

58| Fe^{2+} এর Z মান Fe^{3+} এর Z মানের h^3 গুণিতক Fe^{2+} এর Z মান কত? Fe^{3+} এর Z মান কত?

- (K) $\text{HCl}(aq) + \text{NaOH}(aq) \rightarrow \text{NaCl}(aq) + \text{H}_2\text{O}(l)$
- (L) $\text{C}(s) + \text{O}_2(g) \rightarrow \text{CO}_2(g)$ ✓
- (M) $2\text{H}_2\text{O}(l) \rightarrow 2\text{H}_2(g) + \text{O}_2(g)$
- (N) $\text{H}_2(g) + \text{Cl}_2(g) \rightarrow 2\text{HCl}(g)$

59| Fe^{2+} এর Z মান Fe^{3+} এর Z মানের h^3 গুণিতক Fe^{2+} এর Z মান কত? Fe^{3+} এর Z মান কত?

- (K) Fe^{2+} এর Z মান
- (L) Fe^{3+} এর Z মান
- (M) Cl^- এর Z মান ✓
- (N) H^+ এর Z মান

60| Fe^{2+} এর Z মান Fe^{3+} এর Z মানের h^3 গুণিতক Fe^{2+} এর Z মান কত? Fe^{3+} এর Z মান কত?

- (K) Fe^{2+} এর Z মান
- (L) Fe^{3+} এর Z মান
- (M) Cl^- এর Z মান ✓
- (N) H^+ এর Z মান

61| Fe^{2+} এর Z মান Fe^{3+} এর Z মানের h^3 গুণিতক Fe^{2+} এর Z মান কত? Fe^{3+} এর Z মান কত?

- (K) Fe^{2+} এর Z মান
- (L) Fe^{3+} এর Z মান
- (M) Cl^- এর Z মান ✓
- (N) H^+ এর Z মান

62| Fe^{2+} এর Z মান Fe^{3+} এর Z মানের h^3 গুণিতক Fe^{2+} এর Z মান কত? Fe^{3+} এর Z মান কত?

- (K) Fe^{2+} এর Z মান
- (L) Fe^{3+} এর Z মান
- (M) Cl^- এর Z মান ✓
- (N) H^+ এর Z মান

(K) Fe^{2+} এর Z মান

(L) Fe^{3+} এর Z মান

(M) Cl^- এর Z মান

(N) H^+ এর Z মান

63| Fe^{2+} এর Z মান Fe^{3+} এর Z মানের h^3 গুণিতক Fe^{2+} এর Z মান কত? Fe^{3+} এর Z মান কত?

- (K) HCl
- (L) NaCl
- (M) H_2O ✓
- (N) NaOH

64| Fe^{2+} এর Z মান Fe^{3+} এর Z মানের h^3 গুণিতক Fe^{2+} এর Z মান কত? Fe^{3+} এর Z মান কত?

- (K) $\text{Mg}(\text{OH})_2$
- (L) MgCO_3
- (M) $\text{Mg}(\text{NO}_3)_2$
- (N) MgO ✓

65| Fe^{2+} এর Z মান Fe^{3+} এর Z মানের h^3 গুণিতক Fe^{2+} এর Z মান কত? Fe^{3+} এর Z মান কত?

- (K) $\text{Na}_2\text{S}_2\text{O}_3$
- (L) SO_2
- (M) SO_3 ✓
- (N) H_2O

66| Fe^{2+} এর Z মান Fe^{3+} এর Z মানের h^3 গুণিতক Fe^{2+} এর Z মান কত? Fe^{3+} এর Z মান কত?

- (K) Fe^{2+} এর Z মান
- (L) Fe^{3+} এর Z মান
- (M) Cl^- এর Z মান ✓
- (N) H^+ এর Z মান

67| Fe^{2+} এর Z মান Fe^{3+} এর Z মানের h^3 গুণিতক Fe^{2+} এর Z মান কত? Fe^{3+} এর Z মান কত?

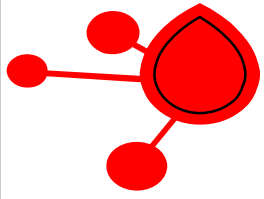
- (K) $\text{H}^+ \text{ I } \text{OH}^-$
- (L) $\text{Na}^+ \text{ I } \text{OH}^-$
- (M) $\text{Na}^+ \text{ I } \text{Cl}^-$ ✓
- (N) $\text{Cl}^- \text{ I } \text{OH}^-$

68| Fe^{2+} এর Z মান Fe^{3+} এর Z মানের h^3 গুণিতক Fe^{2+} এর Z মান কত? Fe^{3+} এর Z মান কত?

- (K) Fe^{2+} এর Z মান
- (L) Fe^{3+} এর Z মান
- (M) Cl^- এর Z মান ✓
- (N) H^+ এর Z মান

69| Fe^{2+} এর Z মান Fe^{3+} এর Z মানের h^3 গুণিতক Fe^{2+} এর Z মান কত? Fe^{3+} এর Z মান কত?

- (K) Fe^{2+} এর Z মান



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(L) Drcv`i Dci

(M) weμqvq e`eüZ `te i Dci

(N) weμqvq e`eüZ `ve†Ki Dci✓

70| wb†Pi †Kvb `ve†K AiaKvsk i vμqv bK weμqv mαúb Kiv nq?

(K) cwlb✓

(L) ývi

(M) Aα

(N) `Re `veK

71| wb†Pi †Kvb weμqvq B†j Kub Av `vb-c`vb N†U bv?

(K) $Zn(s) + CuSO_4(aq) \rightarrow ZnSO_4(aq) + Cu(s)$

(L) $2Mg(s) + O_2(g) \rightarrow 2MgO(s)$

(M) $aCl(aq) + AgNO_3(aq) \rightarrow NaNO_3(aq) +$

$AgCl(s)$ ✓

(N) $2H_2O(l) \rightarrow 2H_2(g) + O_2(g)$

72| wb†Pi †Kvb weμqvU gjZ †Ø-ciZ`vcb weμqv?

(K) `nb weμqv

(L) we†qvRb weμqv

(M) Aat†ýcy weμqv✓

(N) ms†kiY weμqv

73| ývixq †mj fvi bvB†UU `eY†K †K ejv nq?

(K) †dmjs `eY

(L) U†jb weKviK✓

(M) †mdm weKviK

(N) bvB†Uvc†mvBW `eY

74| Avqv bK †hš†Mi mv†_ h³ cwlb†K †K e†j?

(K) †Kjvm cwlb✓

(L) msh³ cwlb

(M) †mv`K cwlb

(N) †hvRK cwlb

75| C₂H₆O-†hš†Mi KqvU mgvb Av†Q?

(K) 2U✓

(L) 3U

(M) 4U

(N) 5U

76| CaCl₂.6H₂O-GB ms†K†Z cwlb i AY†Z Kx e†j?

(K) h³ cwlb

(L) MvVibK cwlb

(M) †Kjvm cwlb✓

(N) `exfZ cwlb

77| Av†gwbqvq mvqv†bU†K DĖB Ki†j †K Drcb nq?

(K) WvB A`vvgb mvqv†bU

(L) bvB†Uv A`vvgb

(M) BD†iqv✓

(N) B_v i

78| D`P Zvc I Pv†ci cfv†e †fbvBj †KvivB†Wi AmsL` AY ci`ú†i i mv†_ h³ n†q †K MvB K†i?

(K) PVC✓

(L) Denim

(M) Teflon

(N) PVA

79| wb†Pi †KvbU gviPvi i vμqv bK ms†KZ?

(K) FeO.nH₂O

(L) Fe₂O₃.nH₂O ✓

(M) Fe₃O₄.nH₂O

(N) Fe₂O₃.3H₂O

80| †jv†v†K `xNw`b evZv†m†iL` †j Gi Dci jvj†P ev`gx i†Oi Av`iY c†o| GiU †Kvb ai†bi c†ieZb?

(K) M`vmxq c†ieZb

(L) †fšZ c†ieZb

(M) i†cvš†iKiY c†ieZb

(N) i vμqv bK c†ieZb✓

81| †gšgwQ† we†li c†k†Z †Kgb?

(K) ývixq

(L) Aαxq✓

(M) †bi†ýc

(N) ckg

82| C₆H₁₂O₆+O₂→?

(K) CO₂ + H₂O

(L) CO₂ + H₂O + k†³ ✓

(M) C + H₂O

(N) CO + H₂O + k†³

83| A†·†R†bi mieivn Kg n†j Rvjvbx i Avs†kK `n†b †K †K Drcb nq?

(K) CO₂ , H₂O Ges k†³

(L) CO , H₂O Ges k†³ ✓

(M) CO₂ Ges H₂O

(N) C Ges H₂O

84| kmb c†μqv i weμqv †KvbU?

(K) C₆H₁₂O₁₁ + O₂ → CO₂ + H₂O + O₂ + k†³

(L) C₆H₂₂O₁₁ + O₂ → CO₂ + H₂O + k†³

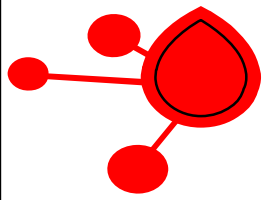
(M) C₆H₁₂O₆ + O₂ → CO₂ + H₂O + k†³ ✓

(N) C₁₇H₃₅O₄ + O₂ → CO₂ + H₂O + k†³

85| kKivRvZxq Lv` A†·†R†bi mv†\_ weμqv K†i †Kvb M`vmU Drcb K†i?



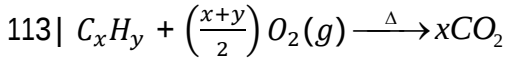
- (K) avZi yq tiva Kiv ✓
 (L) $\text{we}\mu\text{qv tiva Kiv}$
 (M) bgbxq Kiv
 (N) $\text{NvZmnZv e}\times\text{ Kiv}$
- 94 | $\text{t jvnvi } \text{R}\text{b}\text{m}\text{tK g}\text{v}\text{i Pvi n}\text{vZ t}\text{tK i}\text{yvi Rb}'' \text{M}''\text{vj fvbvB}\text{v}\text{Rs}$
 $\text{Gi K}\text{v}\text{tR w}\text{b}\text{tPi tKv}\text{b avZ}\text{U e}''\text{envi Kiv nq?}$
 (K) Al
 (L) Zn ✓
 (M) Cu
 (N) Pb
- 95 | $\text{we}\mu\text{qvi n}\text{v}\text{t i i GKk nj}\tilde{\text{N}}$
 (K) mgq^{-1}
 (L) $\text{w j Uvi}^{-1} \text{mgq}^{-1}$
 (M) $\text{tgvj} - \text{w j Uvi}^{-1} \text{mgq}^{-1}$ ✓
 (N) $\text{tgvj} - \text{w j Uvi}^{-1}$
- 96 | $\text{we}\mu\text{qvi M}\text{vZ}\text{tEM w}\text{b}\text{tPi tKv}\text{bUi Dci w}\text{b}\text{fik}\text{w j bq?}$
 (K) $\text{Zvcgv}\hat{\text{t v}}$
 (L) $\text{we}\mu\text{qtKi Nbgv}\hat{\text{t v}}$
 (M) cfve
 (N) mgq ✓
- 97 | $\text{th mKj we}\mu\text{qvq M}''\text{vmxq AYi msL}''\text{v c}\text{w}\text{ieZY nq bv tm mKj}$
 $\text{we}\mu\text{qvq mvg}''\text{ve}''\text{vi Dci Pvc c}\text{tqvM Ki}\text{tj}\tilde{\text{N}}$
 (K) $\text{mvg}''\text{ve}''\text{v Wvb w}\text{t}\text{tK m}\text{ti hv}\text{te}$
 (L) $\text{mvg}''\text{ve}''\text{v evg w}\text{t}\text{tK m}\text{ti hv}\text{te}$
 (M) $\text{we}\mu\text{qv c}\text{d}\text{vrgLx n}\text{te}$
 (N) $\text{mvg}''\text{e}''\text{v Ac}\text{w}\text{ieZZ vK}\text{te}$ ✓
- 98 | $\text{DfgLx we}\mu\text{qvi mvg}''\text{e}''\text{vq Drcv}\text{t}''\text{i c}\text{w}\text{igvY w}\text{b}\text{tPi tKv}\text{b bx}\text{vZ}$
 $\text{v}\text{v}\text{v w}\text{bqv}\text{SZ?}$
 (K) $\text{dv}\text{hv}\text{tbi bx}\text{vZ}$
 (L) $\text{mvg}''\text{ve}''\text{vi bx}\text{vZ}$
 (M) $\text{jv kv}\text{tZ}\text{w j qvi bx}\text{vZ}$ ✓
 (N) $\text{gm}\text{tbi bx}\text{vZ}$
- 99 | $\text{w}\text{b}\text{tPi tKv}\text{b we}\mu\text{qvi mvg}''\text{ve}''\text{vq Pv}\text{tci tKv}\text{b cfve tbB?}$
 (K) $2\text{NO}_2(\text{g}) \rightleftharpoons \text{N}_2\text{O}_4(\text{g})$
 (L) $\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \rightleftharpoons \text{N}_2\text{O}_4(\text{g})$
 (M) $2\text{H}_2(\text{g}) + \text{O}_2(\text{g}) \rightleftharpoons 2\text{H}_2\text{O}(\text{g})$
 (N) $\text{N}_2(\text{g}) + \text{O}_2(\text{g}) \rightleftharpoons 2\text{NO}(\text{g})$ ✓
- 100 | $\text{Pv}\text{tci cfve tbB w}\text{b}\text{tPi th we}\mu\text{qvq-}$
 (K) $\text{N}_2 + 3\text{H}_2 \rightleftharpoons 2\text{NH}_3$
 (L) $\text{N}_2 + 2\text{O}_2 \rightleftharpoons 2\text{NH}_3$



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(M) ii I iii

(N) i, ii I iii



(i) $\uparrow g \uparrow g i \text{ `nb we} \mu q \mu N \uparrow U$

(ii) $\uparrow g \uparrow g i \text{ i v m v q \mu b K c \uparrow i e Z b N \uparrow U}$

(iii) $\uparrow g \uparrow g i \text{ \uparrow \uparrow \uparrow Z I i v m v q \mu b K D f q c \uparrow i e Z Y N \uparrow U}$

wbPi $\uparrow K v b \mu U m \mu V K?$

(K) i I ii✓

(L) i I iii

(M) ii I iii

(N) i, ii I iii



(i) $\uparrow g \uparrow v \uparrow v \text{ we} \mu q K c \text{ `v \_ , Drcb c \text{ `v _ c \uparrow i e Y Z nq}$

(ii) $GKGLx \text{ Zxi \uparrow P \uparrow (} \rightarrow \text{) e \text{ `e \uparrow Z nq}$

(iii) $e \times c \uparrow \uparrow \uparrow \text{ msN \uparrow U Z nq}$

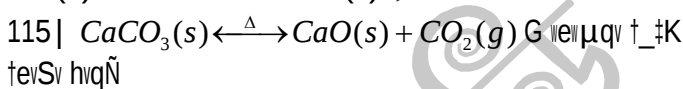
wbPi $\uparrow K v b \mu U m \mu V K?$

(K) i I ii✓

(L) i I iii

(M) ii I iii

(N) i, ii I iii



(i) $G \mu U GK \mu U D f g L x \text{ we} \mu q \mu$

(ii) $\text{we} \mu q \mu U \uparrow L v j v c \uparrow \uparrow \text{ msN \uparrow U Z n \uparrow j GKGLx n \uparrow q _ v \uparrow e}$

(iii) $G \text{ we} \mu q \mu i \text{ \uparrow \uparrow \uparrow \uparrow m \uparrow L g L x \text{ we} \mu q \mu i Z j b v q}$

$\text{we c i x Z g L x \text{ we} \mu q \mu i c i r g v Y A \uparrow b K Kg}$

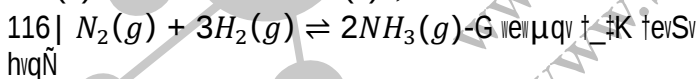
wbPi $\uparrow K v b \mu U m \mu V K?$

(K) i I ii✓

(L) i I iii

(M) ii I iii

(N) i, ii I iii



(i) $G \mu U GK \mu U Z v c D r c v \text{ `x we} \mu q \mu$

(ii) $G \text{ we} \mu q \mu \text{ msN \uparrow U \uparrow b i R b \text{ ` c \uparrow q R b x q P v c n j 200-250}$

atm Ges $c \uparrow q R b x q Z v c g v \uparrow v \text{ n j 450-550}^\circ C$

(iii) $G \text{ we} \mu q \mu q 92 \text{ \uparrow K \uparrow j v R j Z v c D r c b nq}$

wbPi $\uparrow K v b \mu U m \mu V K?$

(K) i I ii

(L) ii I iii

(M) i I iii

(N) i, ii I iii ✓



(i) $\uparrow g \uparrow \uparrow j i \text{ B \uparrow j K U b \text{ we b \text{ `v \uparrow m i m v \uparrow _ m \uparrow \uparrow K Z}$

(ii) $g^3 \text{ \uparrow g \uparrow \uparrow j i \text{ \uparrow \uparrow \uparrow \uparrow k b \text{ ` a i v nq}$

(iii) $\uparrow r \uparrow \uparrow v i \text{ a v Z m g \uparrow n i \text{ \uparrow \uparrow \uparrow + 1 nq}$

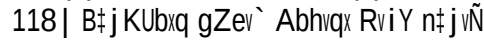
wbPi $\uparrow K v b \mu U m \mu V K?$

(K) i I ii✓

(L) ii I iii

(M) i I iii

(N) i, ii I iii



(i) $\uparrow K v b c \text{ `v _ n \uparrow Z B \uparrow j K U b A c m v i Y}$

(ii) $\uparrow K v b c i g v Y \text{ e v A v q \uparrow b B \uparrow j K U \uparrow b i M n Y}$

(iii) $\uparrow K v b A v q \uparrow b i \text{ a b v Z \uparrow K P v R e i \times K i Y}$

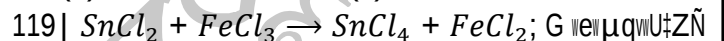
wbPi $\uparrow K v b \mu U m \mu V K?$

(K) i I ii

(L) i I iii ✓

(M) ii I iii

(N) i, ii I iii



(i) $Sn^{2+} \text{ we} \mu q \mu K$

(ii) $Sn^{2+} \text{ R v i K}$

(iii) $Fe^{3+} \text{ R v i K}$

wbPi $\uparrow K v b \mu U m \mu V K?$

(K) i I ii

(L) i I iii ✓

(M) ii I iii

(N) i, ii I iii



(i) $\uparrow K \mu i b \text{ e v F Y V Z i K A s \uparrow k i A c m v i Y}$

(ii) $n v B W \uparrow R b \text{ e v a b v Z \uparrow K A s \uparrow k i A c m v i Y}$

(iii) $A i \cdot \uparrow R \uparrow b i \text{ m s \uparrow h v M}$

wbPi $\uparrow K v b \mu U m \mu V K?$

(K) i I ii

(L) i I iii

(M) ii I iii✓

(N) i, ii I iii



(i) $G K \mu U Z v c D r c v \text{ `x we} \mu q \mu$

(ii) $G \text{ we} \mu q \mu q B \uparrow j K U b A v \text{ `v b - c \text{ `v b N \uparrow U}$

(iii) $G \mu U GK \mu U b b \text{ \uparrow i W \cdot we} \mu q \mu$

wbPi $\uparrow K v b \mu U m \mu V K?$

(K) i I ii

(L) ii I iii

(M) i I iii✓

(N) i, ii I iii



(i) $K v e Y - W v B - A \cdot v B W, c \mu b I Z v c k \mu^3 \text{ Drcb nq}$

(ii) $A i \cdot \uparrow R \uparrow b i \text{ m i e i v n Kg n \uparrow j K v e Y g \uparrow b v \cdot v B W, c \mu b I Kg Z v c k \mu^3 \text{ Drcb nq}$

(iii) $B \uparrow j K U \uparrow b i A v \text{ `v b - c \text{ `v b nq b v}$

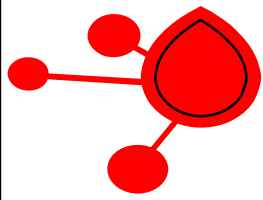
wbPi $\uparrow K v b \mu U m \mu V K?$

(K) i I ii✓

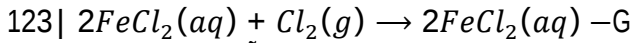
(L) ii I iii

(M) i I iii

(N) i, ii I iii



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(i) $G \rightarrow K$ $ms \rightarrow Rb$ $we \rightarrow \mu qv$

(ii) $G \rightarrow K$ $ms \rightarrow K$ LY $we \rightarrow \mu qv$

(iii) $G \rightarrow K$ $ms \rightarrow R$ vi Y $we \rightarrow \mu qv$

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(K) i l ii

(L) ii l iii

(M) i l iii✓

(N) i, ii l iii



(i) $K \rightarrow b$ $B \rightarrow j$ $KU \rightarrow bi$ $\rightarrow b \rightarrow \tilde{N}$ $N \rightarrow U$ bv

(ii) $we \rightarrow \mu qK$ $\rightarrow U$ mv vi YZ Av $qibK$ $th \rightarrow S$ m q

(iii) $Drcb$ $th \rightarrow S$ $Aat \rightarrow ycb$ in $m \rightarrow te$ Rg te Kb v Zv $\rightarrow ve$ K i

Dci bf i $K \rightarrow i$

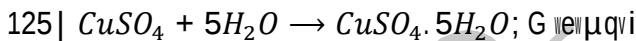
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(K) i l ii

(L) ii l iii

(M) i l iii

(N) i, ii l iii✓



$\rightarrow y \rightarrow \tilde{N}$

(i) $c \rightarrow w$ b ms th W RZ nq

(ii) K j vm $c \rightarrow w$ b M VZ nq

(iii) $c \rightarrow w$ b i we k LY $N \rightarrow U$

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(K) i l ii✓

(L) i l iii

(M) ii l iii

(N) i, ii l iii



(i) $D \rightarrow PZ$ v c P v c q Rb

(ii) $AmsL$ g b gvi $\rightarrow K$ $c \rightarrow j$ gvi $Drcb$ nq

(iii) G $we \rightarrow \mu qvq$ $B \rightarrow j$ $KU \rightarrow bi$ $\rightarrow b \rightarrow \tilde{N}$ $N \rightarrow U$

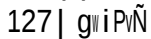
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(K) i l ii✓

(L) ii l iii

(M) i l iii

(N) i, ii l iii



(i) G i vm $qibK$ ms KZ nj $Fe_2O_3 \cdot nH_2O$

(ii) G ms KZ K $FeO(OH)$ in $m \rightarrow te$ c Kv k iv nq

(iii) G d j av Ze Av q iY yq c v β nq

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(K) i l ii

(L) ii l iii

(M) i l iii

(N) i, ii l iii✓



(i) H_2O

(ii) CO_2

(iii) CO

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(K) i l ii✓

(L) i l iii

(M) ii l iii

(N) i, ii l iii



(i) $Nbgv$ i l c i

(ii) mg q i D c i

(iii) $Zvcg$ i l c i

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(K) i l ii

(L) ii l iii

(M) i l iii✓

(N) i, ii l iii



(i) Zvc c q M K i j mg t bi $\rightarrow K$ AM mi n te

(ii) Pvc c q M K i j mg v e $\rightarrow vi$ c vi e Zb n te bv

(iii) Zvc nm K i j mg t bi $\rightarrow K$ AM mi n te

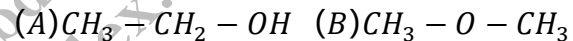
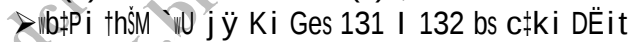
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(K) i l ii

(L) ii l iii✓

(M) i l iii

(N) i, ii l iii



(K) $78^\circ C$

(L) $-24^\circ C$ ✓

(M) $-42^\circ C$

(N) $72^\circ C$



(i) f $\rightarrow Z$ Ae $\rightarrow v$ Z i j

(ii) c w b $\rightarrow Z$ $\rightarrow e$ Y x q

(iii) $\rightarrow U$ b v s K $72^\circ C$

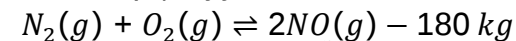
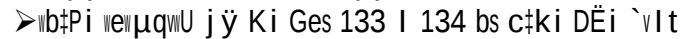
ৱেবসাইট: www.bdcomplex.blogspot.com

(K) i l ii✓

(L) ii l iii

(M) i l iii

(N) i, ii l iii



(K) Zv $\rightarrow c$ v r c v $\rightarrow x$ we $\rightarrow \mu qv$

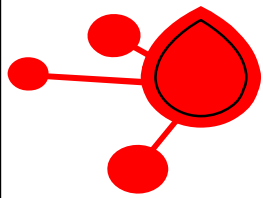
(L) Zvc n v i x we $\rightarrow \mu qv$ ✓

(M) m $\rightarrow s$ L g L x we $\rightarrow \mu qv$

(N) c $\rightarrow d$ v r g L x we $\rightarrow \mu qv$



(i) ΔH G i g y b FY Z K



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(ii) $180 \text{ K} \cdot \text{Rj} \cdot \text{Zvc} \cdot \text{tkw} \cdot \text{IZ}$

(iii) $\text{we} \cdot \mu \text{qv} \cdot \text{eY} \text{ Ges } \text{we} \cdot \mu \text{qv} \cdot \text{cv} \cdot \text{I} \cdot \text{Av} \cdot \text{Av} \cdot \text{V} \cdot \text{U} \cdot \text{v} \cdot \text{n} \cdot \text{t} \cdot \text{Z} \cdot \text{v} \cdot \text{K}$
 $\text{wb} \cdot \text{Pi} \cdot \text{tkv} \cdot \text{U} \cdot \text{m} \cdot \text{VK}?$

(K) i l ii (L) ii l iii ✓

(M) i l iii (N) i, ii l iii

➤ $\text{wb} \cdot \text{Pi} \cdot \text{th} \cdot \text{s} \cdot \text{t} \cdot \text{jvi} \cdot \text{K} \cdot \text{j} \cdot \text{y} \cdot \text{Ki} \text{ Ges } 135-136 \text{ bs } \text{c} \cdot \text{tki} \cdot \text{D} \cdot \text{Ei}$
 $\text{v} \cdot \text{lt}$

$\text{K}_2\text{O}, \text{K}_2\text{O}_2, \text{KO}_2$

135 | $\text{Aav} \cdot \text{Zi} \cdot \text{Rvi} \cdot \text{Y} \cdot \text{msL} \cdot \text{v} \cdot \text{N}$

(K) $\text{abv} \cdot \text{Z} \cdot \text{K}$

(L) $\text{FYv} \cdot \text{Z} \cdot \text{K} \checkmark$

(M) $\text{wbi} \cdot \text{c} \cdot \text{y}$

(N) $\text{kb} \cdot \text{v}$

136 | $\text{A} \cdot \text{R} \cdot \text{bi} \cdot \text{Rvi} \cdot \text{Y} \cdot \text{g} \cdot \text{v} \cdot \text{N}$

(i) $\text{K}_2\text{O} \text{ G- } 2$

(ii) $\text{K}_2\text{O}_2 \text{ G- } 1$

(iii) $\text{K}_2\text{O} \text{ G- } 1$

$\text{wb} \cdot \text{Pi} \cdot \text{tkv} \cdot \text{U} \cdot \text{m} \cdot \text{VK}?$

(K) i l ii ✓

(L) ii l iii

(M) i l iii

(N) i, ii l iii

➤ $\text{wb} \cdot \text{Pi} \cdot \text{mg} \cdot \text{KiY} \cdot \text{U} \cdot \text{j} \cdot \text{y} \cdot \text{Ki} \text{ Ges } 137-138 \text{ bs } \text{c} \cdot \text{tki} \cdot \text{D} \cdot \text{Ei} \cdot \text{v} \cdot \text{lt}$

$\text{AlCl}_3(s) + 3\text{H}_2\text{O} \rightarrow \text{Al}(\text{OH})_3(s) + 3\text{HCl}(aq)$

137 | $\text{tkv} \cdot \text{th} \cdot \text{s} \cdot \text{mi} \cdot \text{B} \cdot \text{Ask} \cdot \text{c} \cdot \text{w} \cdot \text{bi} \cdot \text{ec} \cdot \text{i} \cdot \text{Z} \cdot \text{Av} \cdot \text{v} \cdot \text{bi} \cdot \text{ek} \cdot \text{o} \cdot \text{B} \cdot \text{As} \cdot \text{tki}$

$\text{m} \cdot \text{t} \cdot \text{h} \cdot \text{3} \cdot \text{n} \cdot \text{t} \cdot \text{q} \cdot \text{b} \cdot \text{Z} \cdot \text{th} \cdot \text{s} \cdot \text{M} \cdot \text{Drcb} \cdot \text{Ki} \cdot \text{t} \cdot \text{j} \cdot \text{Z} \cdot \text{v} \cdot \text{K} \cdot \text{ej} \cdot \text{v} \cdot \text{nq} \cdot \text{N}$

(K) $\text{c} \cdot \text{w} \cdot \text{b} \cdot \text{th} \cdot \text{v} \cdot \text{Rb} \cdot \text{we} \cdot \mu \cdot \text{qv}$

(L) $\text{ckgb} \cdot \text{we} \cdot \mu \cdot \text{qv}$

(M) $\text{Av} \cdot \text{we} \cdot \text{k} \cdot \text{iY} \cdot \text{we} \cdot \mu \cdot \text{qv} \checkmark$

(N) $\text{ms} \cdot \text{th} \cdot \text{v} \cdot \text{Rb} \cdot \text{we} \cdot \mu \cdot \text{qv}$

138 | $\text{Av} \cdot \text{we} \cdot \text{k} \cdot \text{iY} \cdot \text{we} \cdot \mu \cdot \text{qv} \cdot \text{N}$

(i) $\text{G} \cdot \text{tk} \cdot \text{c} \cdot \text{w} \cdot \text{b} \cdot \text{we} \cdot \text{k} \cdot \text{iY} \cdot \text{we} \cdot \mu \cdot \text{qv} \cdot \text{e} \cdot \text{t} \cdot \text{j}$

(ii) $\text{G} \cdot \text{we} \cdot \mu \cdot \text{qv} \cdot \text{B} \cdot \text{t} \cdot \text{j} \cdot \text{KU} \cdot \text{t} \cdot \text{bi} \cdot \text{v} \cdot \text{b} \cdot \text{v} \cdot \text{s} \cdot \text{i} \cdot \text{N} \cdot \text{t} \cdot \text{U} \cdot \text{bv}$

(iii) $\text{G} \cdot \text{U} \cdot \text{GK} \cdot \text{U} \cdot \text{t} \cdot \text{i} \cdot \text{W} \cdot \text{we} \cdot \mu \cdot \text{qv}$

$\text{wb} \cdot \text{Pi} \cdot \text{tkv} \cdot \text{U} \cdot \text{m} \cdot \text{VK}?$

(K) i l ii ✓

(L) ii l iii

(M) i l iii

(N) i, ii l iii

$\text{wb} \cdot \text{Pi} \cdot \text{D} \cdot \text{I} \cdot \text{xc} \cdot \text{Ki} \cdot \text{U} \cdot \text{co} \text{ Ges } 139-141 \text{ bs} \text{O} \cdot \text{c} \cdot \text{tk}, \text{t} \cdot \text{jvi} \cdot \text{D} \cdot \text{Ei} \cdot \text{v} \cdot \text{lt}$

$X \rightarrow Y$

$\text{GL} \cdot \text{v} \cdot \text{b} \cdot \text{X} \cdot \text{GK} \cdot \text{U} \cdot \text{Zi} \cdot \text{j} \cdot \text{A} \cdot \text{v} \cdot \text{j} \cdot \text{tkv} \cdot \text{n} \cdot \text{j} \cdot \text{hvi} \cdot \text{U} \cdot \text{b} \cdot \text{v} \cdot \text{s} \cdot \text{K} \cdot 78^\circ \text{C} \cdot \text{Avi} \cdot \text{Y}$

$\text{GK} \cdot \text{U} \cdot \text{B} \cdot \text{vi} \cdot \text{h} \cdot \text{v} \cdot \text{m} \cdot \text{v} \cdot \text{iY} \cdot \text{Ae} \cdot \text{v} \cdot \text{i} \cdot \text{M} \cdot \text{v} \cdot \text{mxq} \cdot \text{Av} \cdot \text{v} \cdot \text{i} \cdot \text{X} \cdot \text{I} \cdot \text{Y} \cdot \text{GKB} \cdot \text{Av} \cdot \text{Y} \cdot \text{ek}$

$\text{ms} \cdot \text{tk} \cdot \text{Z} \cdot \text{we} \cdot \text{k} \cdot \text{o} \cdot \text{th} \cdot \text{s} \cdot \text{M} \cdot \text{I}$

139 | $\text{we} \cdot \mu \cdot \text{qv} \cdot \text{U} \cdot \text{Kx} \cdot \text{ai} \cdot \text{t} \cdot \text{bi}?$

(K) $\text{ms} \cdot \text{th} \cdot \text{v} \cdot \text{Rb}$

(L) $\text{c} \cdot \text{w} \cdot \text{i} \cdot \text{j} \cdot \text{gvi} \cdot \text{KiY}$

(M) $\text{mgv} \cdot \text{YKiY} \checkmark$

(N) $\text{Aat} \cdot \text{t} \cdot \text{y} \cdot \text{cY}$

140 | $X \cdot \text{th} \cdot \text{s} \cdot \text{M} \cdot \text{U} \cdot \text{h} \cdot \text{v} \cdot \text{CH}_3 \cdot \text{CH}_2 \cdot \text{OH} \cdot \text{n} \cdot \text{t} \cdot \text{j}, Y \cdot \text{th} \cdot \text{s} \cdot \text{M} \cdot \text{U} \cdot \text{tkv} \cdot \text{U} \cdot \text{U}?$

(K) $\text{CH}_3 \cdot \text{COOH}$

(L) $\text{CH}_3 \cdot \text{CH}_2 \cdot \text{OH}$

(M) $\text{CH}_3 \cdot \text{COOCH}_2$

(N) $\text{CH}_3 \cdot \text{O} - \text{CH}_3 \checkmark$

141 | $X \cdot \text{th} \cdot \text{s} \cdot \text{M} \cdot \text{U} \cdot \text{i} \cdot \text{N}$

(i) $\text{t} \cdot \text{f} \cdot \text{s} \cdot \text{Z} \cdot \text{Ae} \cdot \text{v} \cdot \text{M} \cdot \text{v} \cdot \text{mxq}$

(ii) $\text{U} \cdot \text{b} \cdot \text{v} \cdot \text{s} \cdot \text{K} \cdot 78^\circ \text{C}$

(iii) $\text{c} \cdot \text{w} \cdot \text{b} \cdot \text{t} \cdot \text{Z} \cdot \text{eY} \cdot \text{xq}$

$\text{wb} \cdot \text{Pi} \cdot \text{tkv} \cdot \text{U} \cdot \text{m} \cdot \text{VK}?$

(K) i l ii

(L) ii l iii ✓

(M) i l iii

(N) i, ii l iii

➤ $\text{wb} \cdot \text{Pi} \cdot \text{we} \cdot \mu \cdot \text{qv} \cdot \text{U} \cdot \text{j} \cdot \text{y} \cdot \text{Ki} \text{ Ges } 142 \text{ I } 143 \text{ bs } \text{c} \cdot \text{tk}, \text{t} \cdot \text{jvi} \cdot \text{D} \cdot \text{Ei}$

$\text{v} \cdot \text{lt}$

$\text{CH}_3 \cdot \text{CHO} + 2\text{Ag}^+(aq) + 20\text{H}^-(aq)$

$\rightarrow \text{CH}_3 \cdot \text{COOH} + 2\text{Ag}(s) + \text{H}_2\text{O}(l)$

142 | $\text{D} \cdot \text{I} \cdot \text{xc} \cdot \text{tki} \cdot \text{we} \cdot \mu \cdot \text{qv} \cdot \text{U} \cdot \text{n} \cdot \text{j} \cdot \text{N}$

(K) $\text{Aat} \cdot \text{t} \cdot \text{y} \cdot \text{cY} \cdot \text{we} \cdot \mu \cdot \text{qv}$

(L) $\text{RviY} \cdot \text{we} \cdot \text{RviY} \cdot \text{we} \cdot \mu \cdot \text{qv} \checkmark$

(M) $\text{Av} \cdot \text{we} \cdot \text{k} \cdot \text{iY} \cdot \text{we} \cdot \mu \cdot \text{qv}$

(N) $\text{ckgb} \cdot \text{we} \cdot \mu \cdot \text{qv}$

143 | $\text{U} \cdot \text{t} \cdot \text{j} \cdot \text{b} \cdot \text{we} \cdot \text{Kvi} \cdot \text{K} \cdot \text{y} \cdot \text{v} \cdot \text{i} \cdot \text{xq} \cdot \text{m} \cdot \text{j} \cdot \text{fvi} \cdot \text{bv} \cdot \text{t} \cdot \text{U} \cdot \text{U} \cdot \text{eY} \cdot \text{U} \cdot \text{N}$

(i) $\text{A} \cdot \text{v} \cdot \text{j} \cdot \text{W} \cdot \text{v} \cdot \text{B} \cdot \text{t} \cdot \text{Wi} \cdot \text{m} \cdot \text{t} \cdot \text{we} \cdot \mu \cdot \text{qv} \cdot \text{K} \cdot \text{t} \cdot \text{i}$

(ii) $\text{m} \cdot \text{j} \cdot \text{f} \cdot \text{v} \cdot \text{t} \cdot \text{i} \cdot \text{Aat} \cdot \text{t} \cdot \text{y} \cdot \text{c} \cdot \text{Drcb} \cdot \text{K} \cdot \text{t} \cdot \text{i}$

(iii) $\text{RviY} \cdot \text{we} \cdot \text{RviY} \cdot \text{we} \cdot \mu \cdot \text{qv} \cdot \text{I} \cdot \text{t} \cdot \text{q}$

$\text{wb} \cdot \text{Pi} \cdot \text{tkv} \cdot \text{U} \cdot \text{m} \cdot \text{VK}?$

(K) i l ii

(L) i l iii

(M) ii l iii

(N) i, ii l iii ✓

$\text{wb} \cdot \text{Pi} \cdot \text{we} \cdot \mu \cdot \text{qv} \cdot \text{U} \cdot \text{j} \cdot \text{y} \cdot \text{Ki} \text{ Ges } 144-145 \text{ bs } \text{c} \cdot \text{tki} \cdot \text{D} \cdot \text{Ei} \cdot \text{v} \cdot \text{lt}$

$\text{NH}_4 \cdot \text{CNO} \xrightarrow{\Delta} \text{NH}_3 - \text{CO} - \text{NH}_2$

144 | $\text{D} \cdot \text{c} \cdot \text{t} \cdot \text{i} \cdot \text{we} \cdot \mu \cdot \text{qv} \cdot \text{U} \cdot \text{ai} \cdot \text{t} \cdot \text{bi} \cdot \text{we} \cdot \mu \cdot \text{qv}?$

(K) $\text{c} \cdot \text{w} \cdot \text{i} \cdot \text{j} \cdot \text{gvi} \cdot \text{KiY} \cdot \text{we} \cdot \mu \cdot \text{qv}$

(L) $\text{c} \cdot \text{w} \cdot \text{b} \cdot \text{th} \cdot \text{v} \cdot \text{Rb} \cdot \text{we} \cdot \mu \cdot \text{qv}$

(M) $\text{mgv} \cdot \text{b} \cdot \text{KiY} \cdot \text{we} \cdot \mu \cdot \text{qv} \checkmark$

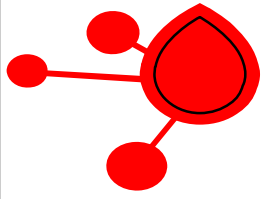
(N) $\text{Av} \cdot \text{we} \cdot \text{k} \cdot \text{iY} \cdot \text{we} \cdot \mu \cdot \text{qv}$

145 | $\text{D} \cdot \text{c} \cdot \text{t} \cdot \text{i} \cdot \text{we} \cdot \mu \cdot \text{qv} \cdot \text{t} \cdot \text{tk} \cdot \text{tev} \cdot \text{Sv} \cdot \text{h} \cdot \text{v} \cdot \text{q} \cdot \text{N}$

(i) $\text{G} \cdot \text{U} \cdot \text{GK} \cdot \text{U} \cdot \text{c} \cdot \text{w} \cdot \text{i} \cdot \text{j} \cdot \text{gvi} \cdot \text{KiY} \cdot \text{we} \cdot \mu \cdot \text{qv}$

(ii) $\text{G} \cdot \text{we} \cdot \mu \cdot \text{qv} \cdot \text{B} \cdot \text{t} \cdot \text{j} \cdot \text{KU} \cdot \text{t} \cdot \text{bi} \cdot \text{v} \cdot \text{b} \cdot \text{v} \cdot \text{s} \cdot \text{i} \cdot \text{m} \cdot \text{e} \cdot \text{bs}$

(iii) $\text{G} \cdot \text{we} \cdot \mu \cdot \text{qv} \cdot \text{GKB} \cdot \text{AYi} \cdot \text{g} \cdot \text{t} \cdot \text{a} \cdot \text{cig} \cdot \text{Ymgn} \cdot \text{cb} \cdot \text{eb} \cdot \text{v} \cdot \text{nq}$



স্টুডেন্ট গাইড লাইন

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii

(L) ii l iii ✓

(M) i l iii

(N) i, ii l iii

ৱবঃপি ডিঃকঃউ co Ges 146-148 bs cঃk, তঃjvi DEi `vlt
তঃfvi তেঃjvq AvjvDঃi b াi . vঃZ Kঃi mঃ`v iঃ0i kvU cঃo `তঃj
hঃ`Qj | nVvr Kঃi Zvi াi . vi mvgঃb া `তঃq Pjgvb UঃtKi তঃarvq Zvi
mঃ`v kvUঃZ KvjঃP `vM তঃjঃM তঃMj |

146 | Kঃjv , ov, তঃjv Kঃ?

(K) তঃKঃiঃmb

(L) তঃcঃUঃtঃj

(M) Kঃvঃb✓

(N) Kঃjঃgi Kঃvঃj

147 | Kঃjv , ov Drcb n l qvi াeঃμqঃU Kঃ াeঃμqঃ?

(K) ckgb াeঃμqঃ

(L) `nb াeঃμqঃ✓

(M) mঃshvRb াeঃμqঃ

(N) াeঃshvRb াeঃμqঃ

148 | াeঃμqঃU msNঃUZ nevi KviYÑ

(i) hঃSK MঃUঃMvঃj

(ii) chঃB Aঃ . তঃRঃbi Afve

(iii) Rvঃj াbi AঃsঃkK `nb

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii

(L) ii l iii ✓

(M) i l iii

(N) i, ii l iii

ৱবঃপি ডিঃকঃউ co Ges 149-151 cঃk, তঃjvi DEi `vlt



PriঃU তঃUঃUDঃe Na₂CO₃ ৱবঃq 1 l 2bs তঃUঃUDঃe VvঃUঃv cঃvb
Ges 3 l 4bs তঃUঃUDঃe Mig cঃvb তঃvM Kiv nq | Gici 2 l 4
তঃUঃUDঃe াfঃbMvi তঃvM Kiv nj |

তঃUঃUDঃe msNঃUZ াeঃμqঃt Na₂CO₃ + CH₃COOH →

CH₃COONa + CO₂ + H₃O

149 | তঃKvb তঃUঃUDঃe মেঃPঃtঃq তেঃk e`e` Drcb নঃ?

(K) 2bs

(L) 4bs✓

(M) 3bs

(N) 1bs

150 | তঃKvb তঃUঃUDঃe e`e` Drcb নঃ bv?

(K) 1bs✓

(L) 4bs

(M) 3bs

(N) 2bs

151 | Drcb e`e` cKZ cঃjঃÑ

(i) CO₂ Drcb n l qvi KviY ৱbMZ nq

(ii) NO₂ Drcb n l qvi KviY ৱbMZ nq

(iii) Na₂CO₃ l CH₃COOHGi াeঃμqঃi dঃj Drcb nq

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii

(L) ii l iii

(M) i l iii✓

(N) i, ii l iii

ৱবঃপি ডিঃকঃউ co Ges 152-154 bs cঃk, তঃjvi DEi `vlt

A₂ + B₂ ⇌ AB₃ + 92 kJ

152 | াeঃμqঃUঃZ Zvc cঃqঃM Kiঃj Kঃ নঃ?

(K) Drcv`b eঃx cঃte

(L) Drcv`b nvm cঃte✓

(M) াeঃμqঃi nvi nvm

(N) Zvc তঃkঃlZ নঃ

153 | াeঃμqঃUঃZ Pvc cঃqঃM Kiঃj Kঃ নঃ?

(K) Mঃvm Ziঃj cঃiYZ নঃ

(L) Drcv`b eঃx cঃte✓

(M) াeঃμqঃi nvi nvm cঃte

(N) cঃdঃr াeঃμqঃi eঃx cঃte

154 | াeঃμqঃUi mvg`e`vi Dci cfve াe`vi KঃiÑ

(i) cfveK

(ii) Zvc

(iii) াeঃμqঃKi NbgvঃIv

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii

(L) i l iii

(M) ii l iii✓

(N) i, ii l iii

ৱবঃপি ডিঃকঃউ co Ges 155-157 bs cঃk, তঃjvi DEi `vlt

Na₂CO₃ + X → NaCl + Y + H₂O -

155 | X তঃhঃM তঃKvbঃU

(K) Cl₂

(L) H₂SO₄

(M) HCl ✓

(N) NaCl

156 | Y তঃhঃM তঃKvbঃU?

(K) O₂

(L) NO₂

(M) CO

(N) CO₂✓

157 | াeঃμqঃUঃZÑ

(i) Y তঃhঃMঃU nj CO₂

(ii) `nb mঃaঃub nq

(iii) 2 তঃgvঃj HCl তঃK ckঃgZ KiঃZ 1 তঃgvঃj Na₂CO₃

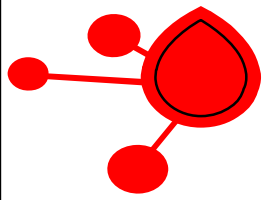
ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l iii✓

(L) i l ii

(M) ii l iii

(N) i, ii l iii



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A óg Aa'vqt i'v'vqb I k'³

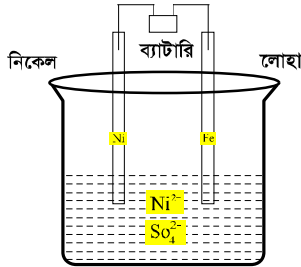
1| e'`r c'ien'bi t'K'sk'j i Dci w'f'É K'i c'iev'x KZ c'K'vi?

(K) GK

(L) `B✓

(M) `Zb

(N) P'vi



ইলেকট্রোপ্লেটিং-এর কৌশল

Dc'tii w'P't'i Av'j'v'K 2 I 3 bs c't'ki D'Éi `v'lt

2| D'xc't'Ki c'μ'v'q D't'k' K'x? t'j'v'v'i-

(K) c'ig'v'Y e'x K'iv

(L) y'q't'iva K'iv✓

(M) `p'Z'v e'x K'iv

(N) e'e'x K'iv

3| Dc'tii w'P't'i ÑO

(i) Ni y'q'c'v'ß nq

(ii) Fe A'v'v'bw Z'ior'v'i w'nt'm't'e K'v'R K't'i

(iii) B't'j'K'U't'bi A'v'v'b-c'v'b N't'U

w'b't'Pi t'K'v'b'U m'v'K?

(K) i I ii

(L) ii I iii

(M) i I iii✓

(N) i, ii I iii

4| W'b't'm't'j w'b't'Pi t'K'v'b'U R'v'K w'nt'm't'e K'v'R K't'iÑ

(K) Zn

(L) MnO₂ ✓

(M) K'v'b

(N) NH₄⁺

5| t'g's'j'm'g't'ni G't'K A'c't'ii m'v' h³ n'l'q'v' k'³ t'K'x e't'j?

(K) t'f's'Z k'³

(L) A'f's'ix'Y k'³

(M) w'b'D'v'K'q'v' k'³

(N) i'v'm'v'q'v'b'K e'Üb

6| Z'v'c D'rc'v'x w'e'μ'q'v' t'y't'i w'b't'Pi t'K'v'b'U m'v'K?

(K) C (s) + O₂ (g) + Z'v'c → CO₂ (g)

(L) NaHCO₃ (aq) + CH₃COOH (aq) + Z'v'c →

CH₃COONa + CO₂ + H₂O

(M) CaO (s) + H₂O (l) - Z'v'c → Ca(OH)₂ (aq) ✓

(N) D'rc'v't' i t'g'v'U k'³ w'e'μ'q't'Ki t'g'v'U k'³ A't'c'y'v t'e'ik n'q

7| GK M'v'm c'v'b't'Z GK'v'U a'v'Z'e L'Ü t'Q't'o w't'j Z'v'c'g'v'v' 10⁰ (m)

t'e't'o h'v'q| c'μ'q'v'U K'x'j'c K't'i?

(K) Z'v'c'v'ix

(L) Z'v'c D'rc'v'x✓

(M) m'g'Z'v'c'x'q

(N) m'g'P'v'c'x'q

8| t'K'v'b i'v'm'v'q'v'b'K w'e'μ'q'v' i'v'm'v'q'K'm'g't'ni t'g'v'U k'³ E₂ Ges

D'rc'v'm'g't'ni t'g'v'U k'³ E₁ n't'j Z'v'c'v'ix w'e'μ'q'v' R'b' t'K'v'b'U m'v'K?

(K) E₂ > E₁

(L) E₂ = E₁

(M) E₁ > E₂ ✓

(N) E₁ ≠ E₂

9| A'v's't'A'v'Y'e'K k'³ i μ'g'v'b'h'v'x t'K'v'b'U m'v'K?

(K) e'id > R'j'x'q'v'v'ú > c'v'b

(L) e'id < c'v'b < R'j'x'q'v'v'ú

(M) R'j'x'q'v'v'ú < c'v'b < e'id ✓

(N) c'v'b < e'id < R'j'x'q'v'v'ú

10| A'v's't'A'v'Y'e'K `i't'Zi m'v'K μ'g t'K'v'b'U?

(K) e'id < R'j'x'q'v'v'ú < c'v'b

(L) c'v'b < e'id < R'j'x'q'v'v'ú

(M) e'id = c'v'b = R'j'x'q'v'v'ú

(N) R'j'x'q'v'v'ú > c'v'b > e'id ✓

11| t'K'v'b A'e'v's A'v's't'A'v'Y'e'K `i'Z m'e't'P't'q K'g v't'K?

(K) K'v'b ✓

(L) Zi j

(M) e'v'ú

(N) c'v'R'g'v'

12| Z'v'c D'rc'v'x w'e'μ'q'v' K'x N't'U?

(K) Z'v'c'g'v'v'v' D'rc'b n'q

(L) Z'v'c D'rc'b n'q ✓

(M) Z'v'c t'K'v'b'U Z n'q

(N) Z'v'c'g'v'v'v' A'c'i'e'v'ZZ v't'K

13| v'f'v'e'K'f'v't'e m'K'j `n'b w'e'μ'q'v'v' B'K'j'c?

(K) Z'v'c D'rc'v'x w'e'μ'q'v' ✓

(L) Z'v'c'v'v'ix w'e'μ'q'v'

(M) c'k'g'b w'e'μ'q'v'

(N) w'v'e't'q'v'R'b w'e'μ'q'v'

14| K'v't'Vi g'j' D'c'v'v'b K'x?

(K) C ✓

(L) Na

(M) S

(N) N

15| C-Cl Ges H-Cl e'Üb k'³ h v'μ't'g KZ w'K't'j'v'Rj Z'v'c w'b'MZ K't'i?

(K) 326 I 413

(L) 362 I 431

(M) 326 I 414

(N) 326 I 341 ✓

16| L'v'e'v' t'm'W'v'i g't'a' GK t'c'v'Uv w'g'k't'q w't'j w'm't'÷t'gi Z'v'c'g'v'v'v' K'x'j'c c'v'e'ZY N'U't'e?

(K) K'g't'e ✓

(L) e'v'o't'e

(M) A'c'i'e'Z'b'x'q v'K't'e

(N) w'v'Y n't'e

17| t'j'e'v' i't'm t'K'v'b G'v'm'W w'e'g'v'b?

(K) G'm'K'i'e'K G'v'm'W

(L) U'v'i'U'v'i'K G'v'm'W

(M) m'v'B'i'U'K G'v'm'W ✓

(N) j'v'K'i'U'K G'v'm'W

18| v'f't'b'M'v't'i t'K'v'b G'v'm'W w'e'g'v'b?

(K) w'g'v'b'i'q'K G'v'm'W

(L) A'v'v'i'm'U'K G'v'm'W ✓

(M) m'v'B'i'U'K G'v'm'W

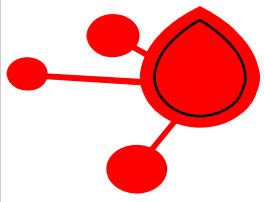
(N) j'v'K'i'U'K G'v'm'W

19| v'f't'b'M'v't'i t'h G'v'm'W v't'K Z'v'i m's't'KZ t'K'v'b'U?

(K) HCOOH

(L) CH₃COOH ✓

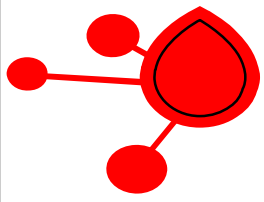
(M) CH₃-(CH₂)₄-COOH



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- (N) $\text{CH}_3-(\text{CH}_2)_6-\text{COOH}$
- 20| Lvei t_mWv I t_jei i_mi we_muq_qN
(K) Z_vc_i t_kv_IY N_tU_✓ (L) Z_vc Drcv_✓ Z nq
(M) we_muq_v Z_vc kb_✓ (N) i_{ag}v_i jeY I c_vb Drcb nq
- 21| 1 Mvg K_veb_tK_✓ `nb Ki_tj 1 K_tj_vRj Z_vc Drcb n_tj, K_veb_t
`nb Z_vc KZ?
(K) 1 KJ (L) 12 KJ ✓
(M) 100 KJ (N) 1000 KJ
- 22| t_kv_tb_v i_mvq_bK we_muq_v c_vi_eZZ Z_vc_tK K_x e_tj?
(K) we_muq_v Z_vc ✓ (L) c_kgb Z_vc
(M) `nb Z_vc (N) Z_ck_i³
- 23| i_bt_Pi t_kv_bU m_iVK?
(K) e_Üb f_vO_v Ges e_Üb M_vb D_ft_qi R_b k_i³ i c_tq_vR_b
(L) e_Üb M_vb Ki_tZ k_i³ i c_tq_vR_b
(M) e_Üb f_vO_tj k_i³ i_bMZ nq
(N) e_Üb M_vt_bi R_b k_i³ i_bMZ nq ✓
- 24| H-CGes O-H e_Üb k_i³ h_vu_tg KZ K_tj_vRj?
(K) 414 I 464 ✓ (L) 414 I 446
(M) 441 I 464 (N) 414 I 431
- 25| e_vs_jv_t k_i we_mrk_i³ Drcv_tb_i me_tP_tq eo Drm_N
(K) c_vb we_mrk_i³ c_kt_i f_i g_va_tg
(L) R_vj_vb t_cv_tb_vi d_tj D_tMZ Z_ck_i³ K_i e_venvi K_ti
U_vievB_b N_it_q ✓
(M) d_tq_j t_mt_j H₂ Gi Z_vor we_mk_iY we_muq_vi g_va_tg
(N) i_bD_iK_qv_i i_dm_b we_muq_vi g_va_tg
- 26| t_kv_bU L_ibR R_vj_vb b_q?
(K) K_qj_v (L) t_ct_Uj_vq_vg
(M) c_vK_iZK M_vm (N) t_gv_g ✓
- 27| t_kv_bU L_ibR R_vj_vb?
(K) K_iK_io (L) K_qj_v ✓
(M) f_il (N) A_i t_Rb
- 28| k_i³ i t_kv_b Drm_iU_i g_R `u_gk K_gt_q?
(K) e_vq (L) t_ms_i we_mrk_i³
(M) R_vev_k R_vj_vb ✓ (N) i_bD_iK_qv_i k_i³
- 29| R_vev_k R_vj_vb_i g_R `A_vg_vb_k KZ m_gq c_ti d_it_q h_vte?
(K) 100 e_qi ✓ (L) 200 e_qi
(M) 300 e_qi (N) 400 e_qi
- 30| G_mW e_vo_i g_j D_cv_✓ b_K X_x?
(K) C (L) S ✓
(M) H (N) O
- 31| i_bt_Pi t_kv_bU we_mrk_i³ R_vj_vb n_tZ m_io n_q?
(K) CO (L) CO₂ ✓

- (M) NO₂ (N) N₂O
- 32| R_vj_vb_i `nb we<sub>m</sub>uq<sub>v</sub>i Drcb t<sub>k</sub>v<sub>b</sub> A<sub>✓</sub> v<sub>B</sub>W<sub>U</sub> c<sub>v</sub>i<sub>t</sub>e<sub>t</sub>k<sub>i</sub> R<sub>b</sub> `Z_jb_vg_jK K_g y_✓WZK_i?
(K) CO (L) CO₂ ✓
(M) NO₂ (N) SO₂
- 33| R_vev_k R_vj_vb b_q t_kv_bU?
(K) t_ct_Uj_vq_vg (L) K_qj_v
(M) we_mrk_i³ ✓ (N) c_vK_iZK M_vm
- 34| d_tU_tK_ig_k v_j t_{av}q_vi D_cv_✓ b_K X_x K_x?
(K) CO₂, NO, CH₄ (L) CO, N₂O, CH₄ ✓
(M) CO₂, NO₂, CH₄ (N) CH₄, CO₂, N₂O₅
- 35| h_vbe_vn_b n_tZ i_bMZ t_{av}q_vg t_kv_bU_✓ v_tK b_v?
(K) CO (L) CH₄
(M) N₂O (N) NO₂ ✓
- 36| e_vq_gU_tj CO₂Gi c_vi_gY G_tZ_v t_ek_i n_vi K_viY K_x?
(K) CO₂ Gi Z_vc a_viY y_gZ_v t_ek_i
(L) CO₂ M_vm i_Rt_b n_vev_✓
(M) i_ble_vt_i D_tM_✓ i_bbab_✓
(N) CO₂Gi i_mvq_bK m_iuq_Zv AZ_✓ i_aK
- 37| R_vj_vb_i `n_tb c_vB i_bt_Pi t_kv_b M_vm_U D_tM_✓ t_i R_b A_ci_vh_v?
(K) CO (L) CO₂ ✓
(M) SO₂ (N) NO
- 38| i_bt_Pi t_kv_b M_vm_U Z_vc a_viY y_gZ_v t_ek_i?
(K) CO (L) CO₂ ✓
(M) SO₂ (N) NO
- 39| i_bbn_vDR c_fv_tei R_b i_bt_Pi t_kv_b M_vm_U A_iaK_✓ `v_qx? e_v,
i_bbn_vDR M_vm e_jv t_kv_bU_tK?
(K) CO (L) SO₂
(M) NO₂ (N) CO₂ ✓
- 40| `Photochemical Smog' G_✓ K_✓ v_tK?
(K) K_veY g_tb_v A_✓ v_BW (L) b_vBU_vm A_✓ v_Bc
(M) A_e e_üZ M_vm_q R_vj_vb_x(N) me_✓ t_jv_✓
- 41| t_kv_bU e_vq_i R_jx_qe_vt_✓ u_i m_vt_✓ h₃ n_tq m_vj_✓ d_iK G_mW_✓ Z_ii
K_ti?
(K) m_vj_✓ d_i W_B A_✓ v_BW (L) m_vj_✓ d_i U_vB A_✓ v_BW ✓
(M) K_veY-g_tb_v-A_✓ v_BW (N) b_vBU_vm A_✓ v_BW
- 42| t_kv_bU B_✓ v_tj_i Drcv_✓ b_cY_jx?
(K) t_kZ_mi R_vZ_xq k_m `v_bv_✓ t_✓K M_vR_b c_iuq_vg
(L) t_mj_✓ j_vR t_✓K Drcv_✓ b_✓
(M) K_il_Kv_tR_i g_va_tg k_m I D_tM_✓ t_✓K
(N) me_✓ t_jv_✓



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43| $Av\ddot{g}vi\ Kvi\ Mmo\ddot{z}\ \ddot{t}c\ddot{t}Uv\ddot{t}j\ i\ mv\ddot{t}_kZKiv\ KZ\ fvM\ B_vbj\ e'envi\ Kiv\ nq?$

(K) 5% (L) 15% (M) 10%✓ (N) 25%

44| $ewR\ddot{t}j\ LubR\ Rvj\ vb\ i\ mv\ddot{t}_kZKiv\ KZ\ fvM\ B_vbj\ wgrkZ\ Kiv\ e'v\ddot{z}vgj\ K|$

(K) 5% (L) 15% (M) 10% (N) 25%✓

45| $\ddot{t}Kvb\ddot{t}U\ddot{t}K\ ^\wedge Re\ Rvj\ vb\ ej\ v\ nq?$

(K) CH_3COOH (L) CH_3CH_2OH ✓

(M) C (N) CH_4

46| $\ddot{t}Kvb\ c\mu qv\ B_vbj\ c^-Z\ Kiv\ nq?$

(K) cPb (L) MvRb✓

(M) $\ddot{t}iPb$ (N) $\ddot{t}nb$

47| $\ddot{t}Kvb\ddot{t}U\ Z\ddot{t}or\ \ddot{t}e\ddot{t}kl\ ^\wedge c\ddot{t}ievnx\ bq?$

(K) GmW (L) MvdvBU✓

(M) $\ddot{y}vi\ i\ je\ddot{t}Yi\ ^\wedge eY$ (N) MjZ jeY

48| $Z\ddot{t}or\ i\ v\ddot{m}qvbK\ \ddot{t}Kv\ddot{t}i\ Z\ddot{t}or\ddot{t}v\ddot{t}i\ msL\ ^\wedge v\ KZ\ddot{t}U?$

(K) 2✓ (L) 3 (M) 4 (N) 5

49| $A\ddot{v}\ddot{t}bv\ddot{t}Wi\ \ddot{t}\ddot{y}\ddot{t}i\ \ddot{t}Kvb\ddot{t}U\ c\ddot{t}hr\ddot{t}?$

(K) $A\ddot{v}\ddot{t}bv\ddot{t}W\ \ddot{t}eRvi\ Y\ N\ddot{t}U$ (L) $A\ddot{v}\ddot{t}bv\ddot{t}W\ ab\ddot{t}Z\ddot{t}K\ Z\ddot{t}or\ddot{t}v\ddot{t}i$

(M) $A\ddot{v}\ddot{t}bv\ddot{t}W\ FY\ddot{t}Z\ddot{t}K\ Z\ddot{t}or\ddot{t}v\ddot{t}i$ (N) $A\ddot{v}\ddot{t}bv\ddot{t}W\ Rvi\ Y\ N\ddot{t}U$ ✓

50| $K\ddot{v}\ddot{t}_v\ddot{t}W\ \ddot{t}Kvb\ddot{t}U\ nq?$

(K) $e^- MnY$ ✓ (L) $e^- Z\ddot{t}vM$

(M) $H^+ MnY$ (N) $H^- Z\ddot{t}vM$

51| $AavZ\ \ddot{t}K\ddot{t}\ \ddot{t}e\ddot{t}\ ^\wedge c\ddot{t}ievnx\ \ddot{t}Kvb\ddot{t}U?$

(K) nxIK (L) MvdvBU✓

(M) GmW $\ddot{t}eY$ (N) $\ddot{y}vi\ ^\wedge eY$

52| $mKj\ \ddot{t}Kv\ddot{t}i\ Rb\ ^\wedge \ddot{t}b\ddot{t}Pi\ \ddot{t}Kvb\ddot{t}U\ c\ddot{t}hr\ddot{t}?$

(K) $A\ddot{v}\ddot{t}bv\ddot{t}W\ ab\ddot{t}Z\ddot{t}K\ Z\ddot{t}or\ddot{t}v\ddot{t}i$

(L) $K\ddot{v}\ddot{t}_v\ddot{t}W\ FY\ddot{t}Z\ddot{t}K\ Z\ddot{t}or\ddot{t}v\ddot{t}i$

(M) $K\ddot{v}\ddot{t}_v\ddot{t}W\ \ddot{t}eRvi\ Y\ N\ddot{t}U$ ✓

(N) $A\ddot{v}\ddot{t}bv\ddot{t}W\ \ddot{t}eRvi\ Y\ N\ddot{t}U$

53| $Cu^{2+}_{(aq)}/Cu; GLv\ddot{t}b\ Cu^{2+}\ \ddot{t}v\ddot{t}v\ Kx\ \ddot{t}evSvq?$

(K) Z\ddot{t}or\ddot{t}v\ddot{t}i (L) Z\ddot{t}or\ \ddot{t}e\ddot{t}kl\ ^\wedge ✓

(M) $A\ddot{v}\ddot{t}bv\ddot{t}W$ (N) $K\ddot{v}\ddot{t}_v\ddot{t}W$

54| $Al(s)/Al^{+3}(aq)Z\ddot{t}or\ddot{t}v\ddot{t}i\ i\ \ddot{t}e\ddot{t}\mu qv\ddot{t}U\ Kxi\ c?$

(K) $Al(s) \rightarrow Al^{+3}(aq) + e^-$

(L) $Al(s) \rightarrow Al^{+3}(aq) + 3e^-$

(M) $Al(s) \rightleftharpoons Al^{+3}(aq) + 3e^-$ ✓

(N) $Al^{+3}(aq) \rightleftharpoons Al(aq) + 3e^-$

55| $W\ddot{v}b\ddot{t}qj\ \ddot{t}Kv\ddot{t}i\ cv\ddot{t}i\ g\ddot{t}a\ ^\wedge ms\ddot{t}hvM\ ^\wedge vc\ddot{t}bi\ Rb\ ^\wedge \ddot{t}b\ddot{t}i\ q\ Z\ddot{t}or\ \ddot{t}e\ddot{t}kl\ ^\wedge \ddot{t}n\ddot{t}m\ddot{t}e\ \ddot{t}Kvb\ddot{t}U\ e'envi\ Kiv\ nq?$

(K) NaCl

(L) KCl ✓

(M) $CuCl_2$

(N) Sn/Sn_2

56| $W\ddot{v}j\ddot{t}qj\ \ddot{t}mj\ GK\ddot{t}U\ddot{t}$

(K) $M\ddot{v}j\ fv\ddot{t}bK\ \ddot{t}Kv\ddot{t}i$ ✓

(L) $\ddot{t}\ddot{e}\ \ddot{t}Kv\ddot{t}i$

(M) $\ddot{t}fv\ddot{t}vi\ \ddot{t}Kv\ddot{t}i$

(N) $Z\ddot{t}or\ \ddot{t}e\ddot{t}kl\ ^\wedge \ddot{t}Kv\ddot{t}i$

57| $W\ddot{v}b\ddot{t}qj\ \ddot{t}Kv\ddot{t}i\ \ddot{t}Kvb\ddot{t}U\ A\ddot{v}\ddot{t}bv\ddot{t}W\ \ddot{t}n\ddot{t}m\ddot{t}e\ e'\ddot{e}U\ddot{t}Z\ nq?$

(K) $Cu|Cu^{2+}(aq)\ avZ\ avZe\ Avqb\ Z\ddot{t}or\ddot{t}v\ddot{t}i\ |$

(L) $KveY\ ^\wedge \ddot{t}U|$

(M) $Zn|Zn^{2+}(aq)\ avZ\ avZe\ Avqb\ Z\ddot{t}or\ddot{t}v\ddot{t}i\ |$ ✓

(N) $NH_4Cl(aq)$

58| $W\ddot{v}bqj\ \ddot{t}Kv\ddot{t}i\ i\ A\ddot{v}\ddot{t}bv\ddot{t}W\ \ddot{t}Kvb\ddot{t}U?$

(K) $Cu|Cu^{2+}(aq)$ (L) $Ag|Ag^{2+}(aq)$

(M) $Zn|Zn^{2+}(aq)$ ✓ (N) $H_2, Pt|H^+(aq)$

59| $Zn|Zn^{2+}||Cu^{2+}|Cu\ddot{t}Kv\ddot{t}i\ mg\ddot{t}q\ddot{t}\ mv\ddot{t}_mv\ddot{t}_Kx\ N\ddot{t}U?$

(K) $A\ddot{v}\ddot{t}bv\ddot{t}W\ cv\ddot{t}\ddot{t}\ Zn^{2+}\ Gi\ Nbgv\ddot{t}v\ K\ddot{t}g$

(L) $K\ddot{v}\ddot{t}_v\ddot{t}W\ cv\ddot{t}\ddot{t}\ Zn^{2+}\ Gi\ Nbgv\ddot{t}v\ K\ddot{t}g$

(M) $K\ddot{v}\ddot{t}_v\ddot{t}W\ cv\ddot{t}\ddot{t}\ Cu^{2+}\ Gi\ Nbgv\ddot{t}v\ e\ddot{t}o$

(N) $K\ddot{v}\ddot{t}_v\ddot{t}W\ cv\ddot{t}\ddot{t}\ Cu^{2+}\ Gi\ Nbgv\ddot{t}v\ K\ddot{t}g$ ✓

60| $jeY\ \ddot{t}mZ\ddot{t}\ KvR\ Kx?$

(K) $\ddot{t}Kv\ddot{t}i\ ^\wedge B\ As\ddot{t}k\ K\ddot{v}Uvqb\ mieivn\ Kiv$

(L) $\ddot{t}Kv\ddot{t}i\ ^\wedge B\ As\ddot{t}k\ A\ddot{v}\ddot{t}bvqY\ mieivn\ Kiv$

(M) $Z\ddot{t}or\ cev\ddot{t}ni\ nvi\ c\ddot{t}ieZY\ Kiv$

(N) $K\ddot{v}\ddot{t}_v\ddot{t}W\ i\ A\ddot{v}\ddot{t}bv\ddot{t}W\ Avq\ddot{t}bi\ AmgZv\ ^\wedge i\ Kiv$ ✓

61| $W\ddot{v}b\ddot{t}m\ddot{t}j\ i\ A\ddot{v}\ddot{t}bv\ddot{t}W\ \ddot{t}n\ddot{t}m\ddot{t}e\ \ddot{t}b\ddot{t}Pi\ \ddot{t}Kvb\ddot{t}U\ e'envi\ Kiv\ nq?$

(K) Zn ✓

(L) Cu

(M) MnO_2

(N) NH_4Cl

62| $cPi\ jZfv\ddot{t}e\ \ddot{t}Kvb\ \ddot{t}mj\ \ddot{t}K\ e'\ddot{v}Uv\ddot{t}\ ej\ v\ nq?$

(K) $W\ddot{v}b\ \ddot{t}mj$ ✓

(L) $AvB.\ddot{t}c.Gm$

(M) $M\ddot{v}j\ fv\ddot{t}b\ \ddot{t}mj$

(N) $m\ddot{A}vqK\ \ddot{t}Kv\ddot{t}i$

63| $W\ddot{v}b\ddot{t}m\ddot{t}j\ i\ K\ddot{v}\ddot{t}_v\ddot{t}W\ \ddot{t}Kvb\ddot{t}U?$

(K) MnO_2

(L) C ✓

(M) NH_4Cl

(N) $ZnCl_2$

64| $W\ddot{v}b\ddot{t}m\ddot{t}j\ i\ K\ddot{v}\ddot{t}_v\ddot{t}W\ \ddot{t}Kvb\ c\ddot{t}\ddot{t}_i\ AveiY\ _v\ddot{t}K?$

(K) MnO_2 ✓

(L) $MnCl_2$

(M) NH_4Cl

(N) $ZnCl_2$

65| $W\ddot{v}b\ddot{t}m\ddot{t}j\ msN\ddot{t}U\ddot{t}\ \ddot{t}e\ddot{t}\mu qv\ddot{t}\ Av\ddot{t}b-c\ddot{t}\ vbKZ\ e^- Gi\ msL\ ^\wedge v\ KZ?$

(K) 2✓

(L) 3

(M) 4

(N) 5

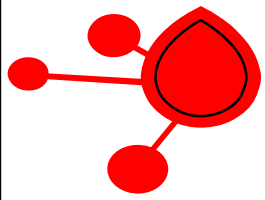
66| $W\ddot{v}b\ddot{t}m\ddot{t}j\ Rvi\ Z\ nq\ \ddot{t}Kvb\ddot{t}U?$

(K) C

(L) Zn ✓



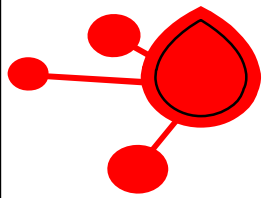
- (M) M³v fwbK tKvI
(N) t³jW mÂqK tKvI
- 78| ÔM³KvR tmY³iÔ Zlor we³kl³ tKvbU?
(K) cvZjv avZi AvIY (L) M³KvR
(M) i³✓ (N) nvZi Pvgov
- 79| M³KvR WtU³i Kxfvte i³ M³Kv³Ri ciigY tei K³i?
(K) Zlor we³kl³ in³tmte i³ e³envi K³i
(L) ZlorØvi in³tmte i³ e³envi K³i
(M) M³Kv³Ri RviY NvUq
(N) Rvi³Y D³MZ e³msL³v vbyq K³i✓
- 80| tKvb tKv³li tK³sj e³envi K³i cwb³Z Av³mb³Ki ciigY
vbyq Kiv hvq?
(K) Zlor ivmvqibK tKvI (L) t³fv³qK KvR
(M) Zlor we³klY tKvI✓ (N) Wb³tmj
- 81| Zlor ivmvqibK M³KvR tmY³i Gi t³Y³I tKvbU ug³v?
(K) A³v³bW I K³v³_vW cv³÷tK³ ^Zi³✓
(L) A³v³bW I K³v³_vW ^brcUs chi³i gva³tg ^Zi³i nq
(M) gvbe³ni i³ Zlor we³kl³ c³v³ in³tmte AvPiY K³i
(N) A³v³bW i³ A³e³ Z M³KvR AY Rvi³Z nq
- 82| cvbi Zlor we³kl³Y Ab³ me avZ e³Z³i³K Pt e³eÜZ nev
KviY Kx?
(K) Pt vgx tg³j
(L) Pt fv³jv we³r c³ievnx
(M) Pt ivmvqibK fvt³e vbi³q✓
(N) Pt Gi ciigYweK msL³v tewk
- 83| cvbi Zlor we³kl³Y K³v³_v³W Kx N³U?
(K) O₂ Drcb nq (L) H₂ M³vm Rgv nq
(M) H₂M³vm Drcb nq✓ (N) H₂O Drcb nq
- 84| cvbi Zlor we³kl³Y tKvb avZi A³v³bW I K³v³_vW e³eÜZ nq?
(K) Mg (L) Hg
(M) Pt ✓ (N) U
- 85| tKvbU mZ³ bq?
(K) cvbi Zlor we³kl³Yi gva³tg Drcb H₂ M³vm gj³vevb I
c³i³tekevÜe Rvjvbx
(L) mg³ i³ cvbi Zlor we³kl³Y tKv³ib M³vm Drcb nq
(M) tKv³ib M³vm eZgv³b d³qj t³m³j i³ me³P³q fvj Rvjvbx
in³tmte e³eÜZ nq✓
(N) tKv³ib M³vm RxeYbv³kK in³tmte e³eÜZ nq
- 86| evBb wK?
(K) weM³jZ NaCl
(L) NaCl Gi m³ou³ Rjxq³ eY✓
(M) W³jvqB³Ui Rjxq³ eY



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- (N) Cu I H_2SO_4 Gi HgK
- 87| Pb I Avjd KYV ✓ (L) U I Avjd KYV
(M) Th I Avjd KYV (N) Sr I Avjd KYV
- 88| e^- Y^{RK} Kf vte tjvnvi c^{ie} Z Kx e^- $\text{e}^{\text{ü}}$ Z nq ?
(K) XvjvB tjvnv (L) B^- üvZ ✓
(M) tCu tjvnv (N) Fe_3O_4
- 89| B^{tjK} U^{t} c^{U} U S Gi gva^{tg} tjvnv Z tKvb tKvb avZi c^{t} j c t^{I} q nq ?
(K) Zn , Cu (L) Zn , Mg ✓
(M) Mg , Al (N) Zn , Al
- 90| B^{ig} U^{K} t^{bi} $\text{Y}^{\text{ö}}$ Kx mi D^{vni} Y ?
(K) Z^{lor} e^{t} K^{I} Y (L) B^{tjK} U^{t} c^{U} U S ✓
(M) f^{vj} t^{K} b B^{I} R S (N) M^{vj} f^{vj} b B^{I} R S
- 91| R^{xev} Y^{b} K^{K} in^{t} m^{te} t^{K} b U A^{ia} K^{Zi} e^- $\text{e}^{\text{ü}}$ Z nq ?
(K) NaOH (L) Cl_2 ✓
(M) NaCl (N) ZnCl_2
- 92| e^- ZK Zvi t^{K} b U ö v Z^{ii} ?
(K) Ca (L) Al
(M) Sn (N) Cu ✓
- 93| egvb Z^{ii} Z t^{K} b avZ e^- envi Kiv nq ?
(K) Cu (L) Ca
(M) Al ✓ (N) Na
- 94| t^{K} b U α KYV ?
(K) $\frac{4}{2}\text{H}$ (L) $\frac{4}{2}\text{He}$
(M) $\frac{4}{2}\text{He}^{++}$ ✓ (N) $\frac{4}{2}\text{He}^+$
- 95| t^{c} v t^{j} v bqvg 210(Po) Z^{t} u Z f vte t f ö b^{t} P i t^{K} b U Drcb K^{t} i ?
(K) mxmv 204 (L) mxmv 205
(M) mxmv 206 ✓ (N) mxmv 207
- 96| BD^{t} i bqvg 238 t f ö b^{t} P i t^{K} b U Drcb nq ?
(K) t^{v} i q vg 232 (L) t^{v} i q vg 234 ✓
(M) t^{v} i q vg 235 (N) t^{v} i q vg 236
- 97| t^{K} b U c^{v} ig Y^{e} K P^{ij} bq ?
(K) e^- Z^{v} P^{ij} ✓ (L) j^{v} BU I q U v P^{ij}
(M) t^{nv} f I q U v P^{ij} (N) e^{W} v P^{ij}
- 98| m^{a} ü Z mb ig Z R icv t^{bi} t^{K} b c^{v} ig Y^{e} K P^{ij} Z y^{ZM} nq ?
(K) in^{t} i v mgv (L) b v m m Kv
(M) U^{I} K I (N) dK im g ✓

- 99| NaCl Gi Rj xq e^{t} Y i Z^{lor} e^{t} K I Y t^{K} b U Dc RvZ in^{t} m^{te} c^{v} I q v h v q ?
(K) Na (L) H_2
(M) Cl_2 (N) NaOH ✓
- 100| bD^{t} K qvi e^{v} m q K q ai^{t} bi ?
(K) 2 ✓ (L) 3
(M) 4 (N) 5
- 101| t^{Z} R^{t} t q Z K x ai^{t} bi e^{v} m q v ?
(K) dmb ✓ (L) dDmb
(M) dV M t g U Kb (N) U v Y g t U Kb e^{v} m q v
- 102| 15 g ijqb $^{\circ}\text{C}$ Z vcg I v U nv B^{t} W^{t} Rb GK I Z n t q b^{t} P i t^{K} b U Drcb K^{t} i ?
(K) t^{c} U q v g (L) f D t U i q v g
(M) U U q v g (N) in^{t} i q v g ✓
- 103| t^{Q} v t^{Q} v U bD^{t} K qvm h^3 n t q eo bD^{t} K qvm Z^{ii} n I q t K K e^{t} j ?
(K) bD^{t} K qvi dmb (L) bD^{t} K qvi dDmb ✓
(M) tP Bb e^{v} m q v (N) Rvi Y e Rvi Y e^{v} m q v
- 104| dmb e^{v} m q v K ai^{t} bi e^{v} m q v ?
(K) ckgb (L) Zvcnvix
(M) bD^{t} K qvi ✓ (N) ms^{t} K I Y
- 105| 1 mole BD^{t} i bqvg 235 t^{t} K bD^{t} K qvi dm^{t} bi gva^{tg} KZ K^{t} c^{v} I q v h v q ?
(K) $2.0 \times 10^{13} \text{J}$ ✓ (L) $2 \times 10^{10} \text{J}$
(M) $2.0 \times 10^{10} \text{J}$ (N) $200 \times 10^{13} \text{kJ}$
- 106| 1 U BD^{t} i bqvg 235 cigv t^{t} K bD^{t} K qvi dm^{t} bi gva^{tg} KZ K^{t} c^{v} I q v h v q ?
(K) $2 \times 10^{13} \text{kJ}$ (L) $3.3 \times 10^{-11} \text{J}$ ✓
(M) $2 \times 10^{13} \text{J}$ (N) $3.3 \times 10^{11} \text{J}$
- 107| 1 mole ig^{t} b M^{v} m t c v t j c v q KZ K^{t} c^{v} I q v h v q ?
(K) 800000J (L) 890000J ✓
(M) 90000J (N) 89100J
- 108| 1 mole BD^{t} i bqvg tgi mgc i g v Y K^{t} c^{v} I q v Rb^{t} KZ tgv ig^{t} b M^{v} m t c v t j Z n t e ?
(K) 2.2×10^7 ✓ (L) 2.2×10^8
(M) 2.2×10^{10} (N) 2.2×10^{-8}
- 109| $\text{C(s)} + \text{O}_2(\text{g}) \rightarrow \text{CO}_2(\text{g}); \Delta H = 394 \text{kJ}$ Dch^3 e^{v} m q v t y^{t} t K b D^{t} t j v m V K ?
(i) 1 tgv C 1 tgv O_2 Gi mv^{t} e^{v} m q v K^{t} 1 tgv K v eb WB A v WB Drcb K^{t} i |
(ii) G e^{v} m q v 394 K^{t} j v R Z v c t K I Z nq |
(iii) G U GK U Z v t c v r c v x e^{v} m q v |



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ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii (L) i l iii ✓

(M) ii l iii (N) i, ii l iii

110 | Lvevi t:mWv I f:bMv:i i e:μqvq-

(i) Zv:c i t:kviY N:tU

(ii) KveY-WB-A · vBW DrCb nq

(iii) t:mWqvq m:vB:tUU DrCb nq

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii ✓ (L) ii l iii

(M) i l iii (N) i, ii l iii

111 | $CH_3 - CH_3(g) + (Cl(g) \rightarrow CH_3CH_2Cl(g) +$

$HCl(g)$ Dc:iD³ e:μqvqñ

(i) 99 kJ Zvc DrCb nq

(ii) 99 kJ Zvc t:kviZ nq

(iii) ci:vZb eÜb fvO:tZ c:tqvRbxq k³ 658 kJ

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii (L) ii l iii

(M) i l iii ✓ (N) i, ii l iii

112 | d:tUv:kigK:vj t:avqvi Dcv`b, t:jv njñ

(i) KveY g:tbv A · vBW

(ii) bvBUvm A · vBW

(iii) wg:t_b

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii (L) ii l iii

(M) i l iii (N) i, ii l iii ✓

113 | CO₂ M'vmñ

(i) Gi Zvc aviY ygZv t:ek

(ii) e:kk Dðvqb:tK cf:veZ K:t i

(iii) ci_exi l:tRvb:t i y:tZi m:ó K:t i

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii ✓ (L) ii l iii

(M) i l iii (N) i, ii l iii

114 | i:vmqv:bK k³ → e`r k³; i:cviš:iUñ

(i) mec_g M'vj fvb I t:fvëv A:ve@vi K:t i

(ii) RviY-eRviY e:μqv i gva:t g N:tU

(iii) Zlor e:t:kIY t:kvi I N:tU

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii ✓ (L) i l iii

(M) ii l iii (N) i, ii l iii

115 | A`v:bW Zlorð:t iñ

(i) eRviY e:μqv m:óv nq

(ii) e`Yi K`vUvqY avZe ` , KZK B:t j KUb MnY K:t i

(iii) e`Yi A`v:bW avZe ` , B:t j b`v K:t i

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii

(L) ii

(M) iii ✓

(N) i l iii

116 | M'vj fvbK t:kvi Iñ

(i) avZe ` , tK H avZi Zlor e:t:k I` i gta` vcb K:t i Zlorðvi

Mvb Kiv nq

(ii) mvaviYZ A`v:bW I K`v`v w n:t m:e f b avZe ` , e`envi

Kiv nq

(iii) A`v:bW I K`v`v w baw:iZ nq avZi m:μqvZv ðvi

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii

(L) i l iii

(M) ii l iii

(N) i, ii l iii ✓

117 | e`r c:ievxi cKvi t` t:kviU?

(i) avZe B:t j KUbq c:ievxi I Zlor e:t:k I`

(ii) mKj avZ I MvdvBU

(iii) mKj AavZ I MvdvBU

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i ✓

(L) ii

(M) iii

(N) ii l iii

118 | ৱবঃপি তঃকবঃউ মঃবঃক?

(i) t:hme c`v`_i ga` t`q e`r PjvPj Ki:tZ cv:t i Zviv Zlor c:ievxi

(ii) t:hme c`v`_i ga` t`q e`r PjvPj Ki:tZ cv:t i bv, Zviv Zlor Ac:ievxi

(iii) t:hme c`v`_i fZi t`q e`r c:ient`Yi mgq t:kvi:c i vmq:bK c:ieZY nq bv, Zv`i:tK avZe c:ievxi ejv nq

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii

(L) i l iii

(M) ii l iii

(N) i, ii l iii ✓

119 | Cu|Cu²⁺(aq) ej:tZ tevSvqñ

(i) Kcvi afZi Rjxq `eY I e:MjZ Kcvi avZi wgy

(ii) Kcvi avZi ` , /avZe cvZ Kcvi m:vj d:tU i Rjxq `eY

wbg³⁴Z

(iii) GKU avZ/avZe Avqb Aa:tKv I

ৱবঃপি তঃকবঃউ মঃবঃক?

(K) i l ii

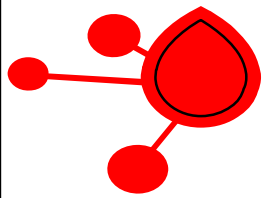
(L) ii l iii ✓

(M) iii

(N) ii

120 | Wb t:t j NH₄+ Avqbñ

(i) K`v`_v`W RviZ nq



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131| $D\ddot{x}c\ddot{K}i$ $\text{we}\mu qvq$ $\ddot{K}vbiU$ $Drcb$ $n\ddot{e}?$

(K) H_2CO_3 (L) $CaHCO_3$

(M) $Ca(OH)_2$ ✓ (N) $CaCO_3$

132| $D\ddot{x}c\ddot{K}i$ $\ddot{t}\ddot{y}\ddot{t}\ddot{I}\ddot{N}$

(i) $\text{we}\mu qvbiU$ Zvc $Drcv\ddot{x}$

(ii) $\text{we}\mu qvbiU$ $Zvcnvix$

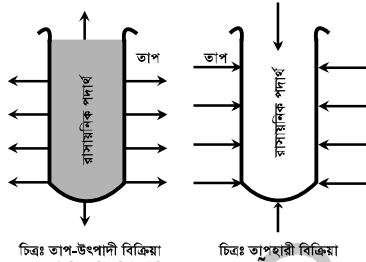
(iii) $Drcv\ddot{t}\ddot{i}$ $\ddot{I}\ddot{i}$ $k\ddot{I}^3 < \text{we}\mu qKmg\ddot{n}i$ $\ddot{I}\ddot{Z}$ $k\ddot{I}^3$

$\text{wb}\ddot{P}i$ $\ddot{t}\ddot{K}vbiU$ $m\ddot{I}VK?$

(K) i | ii (L) i | iii ✓

(M) ii | iii (N) i, ii | iii

➤ $\text{wb}\ddot{P}i$ $\ddot{P}\ddot{I}\ddot{U}$ $j\ddot{y}$ Ki Ges 133-134 bs $c\ddot{t}ki$ $D\ddot{E}i$ $\ddot{v}I$ t



133| $Lvevi$ $\ddot{t}m\ddot{W}v$ $\ddot{I}$ $\ddot{t}\ddot{j}ei$ $i\ddot{t}mi$ $\text{we}\mu qvq\ddot{N}$

(i) $KveY$ WvB $A \cdot vBW$ $Drcb$ nq

(ii) $\ddot{t}m\ddot{W}qvg$ $m\ddot{I}B\ddot{t}UU$ $Drcb$ nq

(iii) Zvc $ibMZ$ nq

$\text{wb}\ddot{P}i$ $\ddot{t}\ddot{K}vbiU$ $m\ddot{I}VK?$

(K) i | ii ✓ (L) ii | iii

(M) i | iii (N) i, ii | iii

134| $\ddot{t}\ddot{K}vbiU$ $D\ddot{x}c\ddot{K}i$ c_g $\ddot{P}\ddot{I}\ddot{t}\ddot{K}$ mg_Y $K\ddot{t}i$ $bv?$

(K) $C(s) + O_2(g) \rightarrow CO_2(g)$

(L) $CaO(s) + H_2O(l) \rightarrow Ca(OH)_2(aq)$

(M) $2KClO_3 \rightarrow 2KCl + 3O_2$ ✓

(N) $NaOH(aq) + HCl \rightarrow NaCl(aq) + H_2O(l)$

$\text{wb}\ddot{P}i$ $Z\ddot{U}$ co Ges 135-137 bs $c\ddot{t}ki$ $D\ddot{E}i$ $\ddot{v}I$ $|$

$1atm$ $Pv\ddot{t}C$ $H_2(g) + \frac{1}{2}O_2(g) \rightarrow H_2O(g)$

$\Delta H = -244kJ$ $\text{we}\mu qvq\ddot{U}\ddot{Z}$ $O = O, O - H$ $b\ddot{U}b$ $k\ddot{I}^3$ $h\ddot{v}\mu\ddot{t}g$ $498kJ\ mol^{-1}$ Ges $464kJ\ mol^{-1}$.

135| G $\text{we}\mu qvq$ $n\ddot{B}\ddot{t}W\ddot{t}Rb$ $AY\ddot{t}Z$ $\ddot{U}$ $n\ddot{B}\ddot{t}W\ddot{t}Rb$ $cigvYi$ $g\ddot{t}a$ $e\ddot{U}b$ $k\ddot{I}^3$ $KZ?$

(K) $679kJ\ mol^{-1}$ (L) $92.3kJ\ mol^{-1}$

(M) $435kJ\ mol^{-1}$ ✓ (N) $400kJ\ mol^{-1}$

136| $H_2(g) + Cl_2(g) \rightarrow 2HCl(g)$ $\text{we}\mu qvq$ ΔH Gi gvb KZ $n\ddot{t}e$ hLb $Cl - Cl$ $e\ddot{U}b$ $k\ddot{I}^3$ i gvb $244kJ\ mol^{-1}$, $H - H$ $e\ddot{U}b$

$k\ddot{I}^3$ i gvb $435kJ\ mol^{-1}$ Ges $H - Cl$ $e\ddot{U}b$ $k\ddot{I}^3$ i gvb $341kJ\ mol^{-1}$

(K) $862kJ\ mol^{-1}$ (L) $-183kJ\ mol^{-1}$ ✓

(M) $679kJ\ mol^{-1}$ (N) $-862kJ\ mol^{-1}$

137| $n\ddot{B}\ddot{t}W\ddot{t}R\ddot{t}bi$ $\ddot{n}b$ Zvc $KZ?$

(K) $244J\ mol^{-1}$ (L) $-244J\ mol^{-1}$

(M) $244 \times 10^3J\ mol^{-1}$ (N) $-244 \times 10^3J\ mol^{-1}$ ✓

$\text{wb}\ddot{P}i$ $D\ddot{x}c\ddot{K}iU$ co Ges 138-140 $c\ddot{t}k$, $\ddot{t}jvi$ $D\ddot{E}i$ $\ddot{v}I$ t

$CH_3CH_3(g) + Cl_2(g) \rightarrow CH_3 - CH_2Cl(g) + X(g)$

138| $\text{we}\mu qvq\ddot{U}\ddot{Z}$ $e\ddot{U}b$ $f\ddot{v}O\ddot{v}i$ $Rb\ddot{t}$ $c\ddot{t}qvRb\ddot{x}$ $\ddot{t}g\ddot{v}U$ $k\ddot{I}^3$ KZ

$\text{K}\ddot{t}jvRj?$

(K) 244 (L) 414

(M) 658 ✓ (N) 757

139| $D\ddot{x}c\ddot{K}i$ $\text{we}\mu qvq$ $e\ddot{U}b$ $covi$ $Rb\ddot{t}$ $c\ddot{t}qvRb\ddot{x}$ $\ddot{t}g\ddot{v}U$ $k\ddot{I}^3$ KZ

$\text{K}\ddot{t}jvRj?$

(K) 326 (L) 431

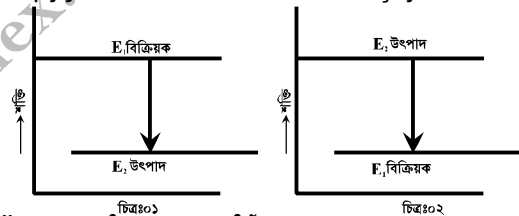
(M) 658 (N) 757 ✓

140| X $\ddot{t}h\ddot{t}Mi$ $cigvY\ddot{t}qj$ $g\ddot{t}a$ $e\ddot{U}bk\ddot{I}^3$ KZ $\text{K}\ddot{t}jvRj?$

(K) 414 (L) 431 ✓

(M) 435 (N) 646

$\text{wb}\ddot{P}i$ $\ddot{P}\ddot{I}\ddot{q}$ $j\ddot{y}$ Ki Ges 141 | 142 bs $c\ddot{t}k$, $\ddot{t}jvi$ $D\ddot{E}i$ $\ddot{v}I$ t



141| $D\ddot{x}c\ddot{K}i$ $\ddot{P}\ddot{I}-1$ Gi $\ddot{t}\ddot{y}\ddot{t}\ddot{I}\ddot{N}$

(i) $\text{we}\mu qvbiU$ Zvc $Drcv\ddot{x}$

(ii) ΔH Gi gvb $abvZ\ddot{K}$

(iii) $E_1 > E_2$

$\text{wb}\ddot{P}i$ $\ddot{t}\ddot{K}vbiU$ $m\ddot{I}VK?$

(K) i | ii (L) i | iii ✓

(M) ii | iii (N) i, ii | iii

142| $\ddot{P}\ddot{I}-2$ Gi $\ddot{t}\ddot{y}\ddot{t}\ddot{I}\ddot{N}$

(i) $\text{we}\mu qvbiU$ $Z\ddot{t}ci$ $\ddot{t}kvIY$ $N\ddot{t}U$

(ii) ΔH Gi gvb $abvZ\ddot{K}$

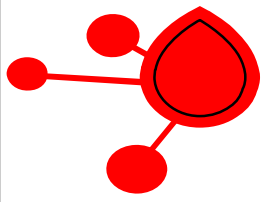
(iii) $Drcv\ddot{t}\ddot{i}$ $\ddot{t}g\ddot{v}U$ $k\ddot{I}^3 > \text{we}\mu q\ddot{t}Ki$ $g\ddot{t}Uv$ $k\ddot{I}^3$

$\text{wb}\ddot{P}i$ $\ddot{t}\ddot{K}vbiU$ $m\ddot{I}VK?$

(K) i | ii (L) i | iii

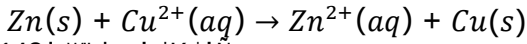
(M) ii | iii (N) i, ii | iii ✓

$\text{wb}\ddot{P}i$ $\text{we}\mu qvbiU$ co Ges 143-144 bs $c\ddot{t}ki$ $D\ddot{E}i$ $\ddot{v}I$ $|$



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W'wbbqv j tKv†l w†p³ weμqv msNnUZ nqÑ



143| W'wbbqv j tKv†lÑ

- (i) A'v†bw Zn²⁺(aq) Avqb ^Zi n†q `e†Y hvq
(ii) jeY tmZ `B cv†Îi g†a Avq†bi mgZv eRvq iv†L
(iii) A'v†bw cv†Î Zn²⁺(aq) Avq†bi AwaK" nq

w†Pi tKvbiU mivK?

- (K) i l ii (L) ii l iii
(M) ii (N) i, ii l iii✓

144| jeY tmZ†Z mvaviY tKv Zlonet†k†l"i `eY e`envi Kiv nq?

- (K) ZnCl₂ (L) CuCl₂
(M) KCl ✓ (N) H₂SO₄

beg Aa'vqt GmW-ÿvi mgZv

1| Pbvcv_†i i Dci jN mvj†dDwiK GmW thvM Ki†j w†Pi tKv thŠmU Drcb n†e?

- (K) CO₂ ✓ (L) H₂
(M) O₂ (N) SO₂

2| w†Pi tKvbiU ÿvi?

- (K) tKvgj cvbxq (L) tjei im
(M) wmiKv (N) Kicok†v†mWv✓

3| w†Pi tKvbiU i Dci wZi Rb" A'v†gwbqv M'v†mi Rjxq `eY ÿvi?

- (K) NH₄⁺ Avqb (L) OH⁻ Avqb✓
(M) NH₃ (N) H₂O

4| GK†U ARv†v avZi mv†_ bvBiUK Gm†Wi weμqv eYnxb `eY Drcb nq| Drcb `eY†U†Z†mWwqvq nvBW·vBW `eY thvM Ki†j mv`v e†Yi Aat†ÿc Drcb nq †KŠ AwaK c†g†v†mWwqvq nvBW·vBW `eY thvM Ki†j Zv-l `ex†Z n†q hvq| avZiU-

- (K) Kcvi (L) Avqib
(M) t†jW (N) †RsK✓

5| GK†U B_vb†qK GmW `e†Yi pH-Gi gvb 4, pH-Gi gvb ex Kivi Rb" G†Z thvM Ki†Z n†eÑ

- (i) A'v†gwbqv `eY
(ii) Nb nvB†W†KwiK GmW
(iii) K†Vb g†vM†b†mqvg Kve†bU

w†Pi tKvbiU mivK?

- (K) i l ii (L) i l iii ✓
(M) ii l iii (N) i, ii l iii

6| tKv avZiU e`vUwii w†Z†i \_v†K, hv `v†`i Rb" ÿZKi?

- (K) †RsK (L) Kcvi
(M) t†jW✓ (N) Avqib

7| e`vUwii cv†K Kfv†ii t†Z†i †K †K _v†K?

(K) mvj†dDwiK GmW (L) mxmv (t†jW)

(M) t†jW-WB-A·vBW (N) me_†jv✓

8| mdU wSkM G tKv GmW _v†K?

- (K) KveibK GmW✓ (L) UviUwiiK GmW
(M) B_vb†qK GmW (N) mvBiUK GmW

9| t†je ev Kg†v† tKv GmW _v†K?

- (K) KveibK GmW (L) UviUwiiK GmW
(M) B_vb†qK GmW (N) mvBiUK GmW✓

10| w†bMv†i tKv GmW _v†K?

- (K) KveibK GmW (L) UviUwiiK GmW
(M) B_vb†qK GmW✓ (N) mvBiUK GmW

11| t†ZZ†j tKv GmW _v†K?

- (K) KveibK GmW (L) UviUwiiK GmW ✓
(M) B_vb†qK GmW (N) mvBiUK GmW

12| tcc†m, `úBU, tKv†K†K†v† tKv GmW _v†K?

- (K) KveibK GmW✓ (L) UviUwiiK GmW
(M) B_vb†qK GmW (N) mvBiUK GmW

13| gvb†li cvK j†Z† tKv GmW ^Zi nq?

- (K) nvB†W†KwiK GmW (L) B_vb†qK GmW
(M) UviUwiiK GmW✓ (N) mvBiUK GmW

14| w†Pi tKv GmWw†U Lv` c†ic†Ki Rb" Avek"K?

- (K) mvj†dDwiK GmW (L) bvBiUK GmW
(M) nvB†W†KwiK GmW✓ (N) mvBiUK GmW

15| cvK jx l M†v† c`vn Peptic ulcer nq tKvbiU i Kvi†Y?

- (K) KveibK GmW (H₂CO₃)
(L) mvj†dDwiK GmW (H₂SO₄)
(M) nvB†W†KwiK GmW (HCl) ✓
(N) B_vb†qK GmW (CH₃-COOH)

16| w†bMv†i i v†v†q†b†g† K†?

- (K) d††gK GmW (L) B_vb†qK GmW✓
(M) UviUwiiK GmW (N) mvBiUK GmW

17| tKv GmW Avg†v LvB?

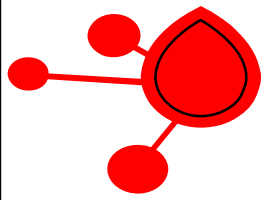
- (K) bvBiUK GmW (H₂NO₃)
(L) mvj†dDwiK GmW (H₂SO₄)
(M) nvB†W†KwiK GmW (HCl)
(N) B_vb†qK GmW (CH₃-COOH) ✓

18| tKv A†Re GmW Avg†v LvB?

- (K) H₂CO₃ ✓ (L) H₂SO₄
(M) HCl (N) CH₃-COOH

19| GmW_†jvi `v`Ñ

- (K) jeYh³ (L) †g†ó
(M) UK✓ (N) Sv†j/ZZ†



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20| Fe^{3+} by Bi^{3+} UK $\text{Gim}^{\dagger}\text{Wi}$ eY $\dagger\text{Kgb}$?

(K) jvj (L) $\text{ev}^{\dagger}\text{vg}$

(M) eYnxb ✓ (N) $\text{Kv}^{\dagger}\text{jj}$

21| $\text{Gim}^{\dagger}\text{W}$ bxj jjUgvm $\dagger\text{ccv}^{\dagger}\text{ii}$ eY $\text{Kxi}^{\dagger}\text{c}$ nq?

(K) bxj (L) jvj✓

(M) meR (N) $\text{te}^{\dagger}\text{ib}$

22| jN $\text{Gim}^{\dagger}\text{Wi}$ $\text{mv}^{\dagger}$ $\dagger\text{Kvb}$ avZ $\text{ve}^{\dagger}\text{üviY}$ mn $\text{ve}^{\dagger}\text{üqv}$ $\text{K}^{\dagger}\text{i}$?

(K) Na✓ (L) Ca

(M) Mg (N) Al

23| $\text{K}^{\dagger}\text{ijP}^{\dagger}\text{bi}$ ivmvqibK $\text{mst}^{\dagger}\text{KZ}$ $\dagger\text{KvbU}$?

(K) NaOH (L) NH_3

(M) $\text{Ca}(\text{OH})_2$ ✓ (N) CaCO_3

24| $\dagger\text{KvbU}$ $\text{ga}^{\dagger}\text{g}$ $\text{mü}^{\dagger}\text{q}$ avZ bq?

(K) $\text{A}^{\dagger}\text{vjigibqvg}$ ✓ (L) RsK

(M) $\dagger\text{jW}$ (N) Avqib

25| $\dagger\text{KvbU}$ $\text{mü}^{\dagger}\text{qZv}$ $\text{mü}^{\dagger}\text{R}$ $\text{A}^{\dagger}\text{vjigibqvgi}$ $\text{Dc}^{\dagger}\text{ii}$ $\text{Ae}^{\dagger}\text{Z}$?

(K) Zn (L) Fe

(M) Ca✓ (N) Pd

26| $\dagger\text{KvbU}$ Kg $\text{mü}^{\dagger}\text{q}$ avZ?

(K) Cu✓ (L) Zn

(M) H (N) Al

27| $\text{avZ} + \text{jN}$ $\text{Gim}^{\dagger}\text{W} \rightarrow \text{X} + \text{nvB}^{\dagger}\text{W}^{\dagger}\text{Rb}$ $\text{M}^{\dagger}\text{vm}$; X $\text{ib}^{\dagger}\text{Pi}$ $\dagger\text{KvbU}$?

(K) YviK (L) cwb

(M) Yvi (N) jeY ✓

28| $\text{Mg}(\text{s}) + 2\text{HNO}_3(\text{aq}) \rightarrow \text{Mg}(\text{NO}_3)_2(\text{s}) + \text{X}(\text{g})$ X $\text{M}^{\dagger}\text{vmU}$ Kx ?

(K) O_2 (L) N_2

(M) H_2 ✓ (N) $\text{Dc}^{\dagger}\text{ii}$ th $\dagger\text{KvbU}$ $\text{n}^{\dagger}\text{Z}$ $\text{cv}^{\dagger}\text{i}$

29| $\text{bx}^{\dagger}\text{Pi}$ $\dagger\text{Kvb}$ $\text{ve}^{\dagger}\text{üqvU}$ $\text{Am}^{\dagger}\text{e}$?

(K) $\text{Mg} + \text{HCl} \rightarrow \text{MgCl}_2 + \text{H}_2$

(L) $\text{K} + \text{H}_2\text{SO}_4 \rightarrow \text{K}_2\text{SO}_4 + \text{H}_2$

(M) $\text{Cu} + \text{H}_2\text{SO}_4 \rightarrow \text{CuSO}_4 + \text{H}_2$ ✓

(N) $\text{Na} + \text{HNO}_3 \rightarrow \text{NaNO}_3 + \text{H}_2$

30| $\text{HNO}_3 \rightarrow \text{X} + \text{H}_2\text{O} + [\text{O}]$

$\text{ve}^{\dagger}\text{üqvU}^{\dagger}\text{Z}$ X Gi eY $\text{Kxi}^{\dagger}\text{c}$?

(K) $\dagger\text{Mvjvcx}$ (L) $\text{ev}^{\dagger}\text{vgx}$ ✓

(M) eYnxb (N) meRvf

31| Mg avZ jN H_2SO_4 Gi $\text{mv}^{\dagger}$ $\text{ve}^{\dagger}\text{üqv}$ $\text{K}^{\dagger}\text{i}$ $\dagger\text{Kvb}$ $\text{M}^{\dagger}\text{vm}$ Drcb $\text{K}^{\dagger}\text{i}$?

(K) H_2 ✓ (L) O_2

(M) SO_3 (N) SO_2

32| $\text{Kve}^{\dagger}\text{bU}$ $\text{je}^{\dagger}\text{Yi}$ $\text{g}^{\dagger}\text{a}$ $\text{Gim}^{\dagger}\text{W}$ thvM $\text{Ki}^{\dagger}\text{j}$ $\text{ib}^{\dagger}\text{Pi}$ $\dagger\text{Kvb}$ $\text{M}^{\dagger}\text{vm}$ Drcb nq ?

(K) CO_2 ✓ (L) O_2

(M) N_2 (N) H_2

33| avZe $\text{Kve}^{\dagger}\text{bU} + \text{jN} \rightarrow \text{jeY} + \text{cwb} + \text{Y}$; Y Gi $\text{mst}^{\dagger}\text{KZ}$ $\dagger\text{KvbU}$?

(K) CO (L) CO_2 ✓

(M) H_2CO_3 (N) CO_3

34| Kcvi $\dagger\text{Kvb}$ $\text{Gim}^{\dagger}\text{Wi}$ $\text{mv}^{\dagger}$ $\text{ve}^{\dagger}\text{üqv}$ $\text{K}^{\dagger}\text{i}$?

(K) jN bvBiUK $\text{Gim}^{\dagger}\text{W}$ ✓ (L) jN $\text{nvB}^{\dagger}\text{W}^{\dagger}\text{KwiK}$ $\text{Gim}^{\dagger}\text{W}$

(M) KveibK $\text{Gim}^{\dagger}\text{W}$ (N) $\text{B}^{\dagger}\text{vbiqK}$ $\text{Gim}^{\dagger}\text{W}$

35| NO_2 - Gi eY $\dagger\text{Kgb}$?

(K) jvj (L) meR

(M) $\text{ev}^{\dagger}\text{vg}$ ✓ (N) bxj

36| biBiUK $\text{A}^{\dagger}\text{vB}^{\dagger}\text{Wi}$ eY K ?

(K) $\text{ev}^{\dagger}\text{vgx}$ (L) $\text{bxj}^{\dagger}\text{P}$ $\text{mv}^{\dagger}\text{v}$

(M) $\text{mv}^{\dagger}\text{v}$ (N) eYnxb ✓

37| $\text{if}^{\dagger}\text{bMvi}$ I tjei im $\text{mü}^{\dagger}\text{q}$ avZi $\text{mv}^{\dagger}$ $\text{ve}^{\dagger}\text{üqv}$ $\dagger\text{Kvb}$ $\text{M}^{\dagger}\text{vm}$ Drcb $\text{K}^{\dagger}\text{i}$?

(K) $\text{KveY-WvB-A}^{\dagger}\text{vBW}$ (L) $\text{bvB}^{\dagger}\text{Uv}^{\dagger}\text{Rb}$

(M) $\text{nvB}^{\dagger}\text{W}^{\dagger}\text{Rb}$ ✓ (N) $\text{A}^{\dagger}\text{v}^{\dagger}\text{gwbqv}$

38| Mvp $\text{HNO}_3 \rightarrow \text{NO}_2 + \text{H}_2\text{O} + [\text{?}]$ $[\text{?}]$ PüYZ $\text{Drcv}^{\dagger}\text{U}$ Kx ?

(K) Rvqgvb $\text{bvB}^{\dagger}\text{Uv}^{\dagger}\text{Rb}[\text{N}]$ (L) Rvqgvb $\text{nvB}^{\dagger}\text{W}^{\dagger}\text{Rb}[\text{H}]$

(M) Rvqgvb $\text{A}^{\dagger}\text{v}^{\dagger}\text{Rb}[\text{O}]$ ✓ (N) $\text{nvB}^{\dagger}\text{W}^{\dagger}\text{Rb}$ $\text{M}^{\dagger}\text{vm}$ (H_2)

39| avZe $\text{Kve}^{\dagger}\text{bU}$ I jN $\text{Gim}^{\dagger}\text{Wi}$ $\text{ve}^{\dagger}\text{üqv}$ AvqibK mgxKiY $\dagger\text{KvbU}$?

(K) $\text{CO}_3(\text{s}) + 2\text{H}^+(\text{aq}) \rightarrow \text{H}_2\text{O}(\text{l}) + \text{H}_2(\text{g})$

(L) $\text{CO}_3^{2-}(\text{aq}) + 2\text{H}^+(\text{aq}) \rightarrow \text{H}_2\text{O}(\text{l}) + \text{CO}_2(\text{g})$ ✓

(M) $\text{HCO}_3^-(\text{aq}) + 2\text{H}^+(\text{aq}) \rightarrow \text{H}_2\text{O}(\text{l}) + \text{CO}_2(\text{g})$

(N) $\text{OH}^-(\text{aq}) + \text{H}^+(\text{aq}) \rightarrow \text{H}_2\text{O}(\text{l})$

40| $\text{Gim}^{\dagger}\text{W} + \text{avZi}$ $\text{A}^{\dagger}\text{vBW} \rightarrow \text{jeY} + \text{cwb}$; GB $\text{ve}^{\dagger}\text{üqvU}^{\dagger}\text{N}$

(K) $\text{mst}^{\dagger}\text{hRb}$ $\text{ve}^{\dagger}\text{üqv}$ (L) $\text{ve}^{\dagger}\text{thvRb}$ $\text{ve}^{\dagger}\text{üqv}$

(M) $\text{ücv}^{\dagger}\text{Z}^{\dagger}\text{vcb}$ $\text{ve}^{\dagger}\text{üqv}$ (N) ckgb $\text{ve}^{\dagger}\text{üqv}$ ✓

41| avZe $\text{nvB}^{\dagger}\text{W}^{\dagger}\text{Rb}$ $\text{Kve}^{\dagger}\text{bU}$ $\text{g}^{\dagger}\text{a}$ jN $\text{Gim}^{\dagger}\text{W}(\text{H}_2\text{SO}_4)$ thvM $\text{Ki}^{\dagger}\text{j}$ $\dagger\text{Kvb}$ $\text{M}^{\dagger}\text{vm}$ Drcb nq ?

(K) SO_2 (L) SO_3

(M) CO_2 ✓ (N) (H_2)

42| $\text{HNO}_3 + \text{CaO} \rightarrow \text{X} + \text{H}_2\text{O}$ GB $\text{ve}^{\dagger}\text{üqv}$ X $\text{th}^{\dagger}\text{MüU}$ $\text{n}^{\dagger}\text{j}$ vN

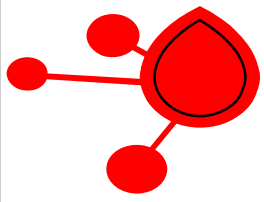
(K) NO (L) NO_2

(M) $\text{Ca}(\text{NO}_3)_2$ ✓ (N) Ca_3N_2

43| ÖAbv mvBiUK $\text{Gim}^{\dagger}\text{W}$ $\text{ü}^{\dagger}\text{v}^{\dagger}\text{ji}$ Dci $\text{i}^{\dagger}\text{ö}$ bxj jjUgvm $\text{ü}^{\dagger}\text{K}$

$\text{Kiv}^{\dagger}\text{j}$ $\dagger\text{Kvb}$ eY $\text{c}^{\dagger}\text{ieZb}$ nq bvÖ $\text{KviY}^{\dagger}\text{N}$

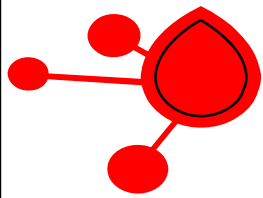
(K) Abv mvBiUK $\text{Gim}^{\dagger}\text{W}$ $\text{ü}^{\dagger}\text{v}^{\dagger}\text{j}$ $\text{nvB}^{\dagger}\text{W}^{\dagger}\text{Rb}$ Avqb tbB |✓



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- (L) $Abv \cdot mvBilUK \text{ GimW } \mu \div v \ddot{t} j \text{ nvBW} \cdot vBW \text{ Avqb } \ddot{t} bB |$
(M) $Rjxq \cdot e \ddot{t} Y \text{ mvBilUK } \text{ GimW } \text{ nvB} \ddot{t} W \ddot{t} Rb \text{ Avqb } \ddot{t} \cdot q \text{ bv} |$
(N) $Rjxq \cdot e \ddot{t} Y \text{ mvBilUK } \text{ GimW } \text{ Avs} \ddot{t} kK \text{ AvqibZ } nq |$
- 44| $Rjxq \cdot e \ddot{t} Y \text{ } \ddot{t} b \ddot{t} Pi \text{ } \ddot{t} KvbilU \text{ nvB} \ddot{t} W \ddot{t} Rb \text{ Avqb } \ddot{t} \cdot q \text{ bv} ?$
(K) $B \cdot vbiqK \text{ GimW}$ (L) $mvBilUK \text{ GimW}$
(M) $mvj \cdot dDiK \text{ GimW}$ (N) $Ki \div K \text{ } \ddot{t} mWv \checkmark$
- 45| $avZi \text{ A} \cdot vBW \ddot{t} K \text{ ev } \text{ nvB} \ddot{t} W \ddot{t} A \cdot vBW \ddot{t} K \text{ Kx } ejv \text{ nq} ?$
(K) $\ddot{y} viK \checkmark$ (L) jeY
(M) $GimW$ (N) $\ddot{y} vi$
- 46| $\ddot{t} KvbilU \text{ Rjxq } \cdot e \ddot{t} Y \text{ } \ddot{t} m \ddot{t} Y i \ddot{t} c \text{ AvqibZ } nq ?$
(K) $mvBilUK \text{ GimW}$
(L) $B \cdot vbiqK \text{ GimW}$
(M) $KvibK \text{ GimW}$
(N) $\text{nvB} \ddot{t} W \ddot{t} Rb \text{ } \ddot{t} Kvi \text{ } vBW / \text{nvB} \ddot{t} W \ddot{t} Kvi \text{ } iK \text{ GimW} \checkmark$
- 47| $bx \ddot{t} Pi \text{ } \ddot{t} KvbilU \text{ Gim} \ddot{t} Wi \text{ } \hat{e} i k \ddot{o} \text{ } mPK \text{ ag } c \cdot kb \text{ K} \ddot{t} i ?$
(K) $\text{nvBW} \cdot vBW \text{ Avqb } (OH^-)$
(L) $Rvqgvb \text{ A} \cdot \ddot{t} Rb \text{ } [O]$
(M) $Rvqgvb \text{ nvB} \ddot{t} W \ddot{t} Rb \text{ } [H]$
(N) $\text{nvB} \ddot{t} W \ddot{t} Rb \text{ Avqb } (H^+) \checkmark$
- 48| $\ddot{t} KvbilU \text{ me } j / k \cdot \ddot{t} k \cdot \ddot{t} j x \text{ GimW} ?$
(K) $mvBilUK \text{ GimW}$ (L) $KvibK \text{ GimW}$
(M) $B \cdot vbiqK \text{ GimW}$ (N) $\text{nvB} \ddot{t} W \ddot{t} Kvi \text{ } vBW \text{ GimW} \checkmark$
- 49| $\ddot{t} KvbilU \text{ me } \ddot{t} P \ddot{t} q \text{ k} \cdot \ddot{t} k \cdot \ddot{t} j x \text{ } \ddot{y} vi ?$
(K) $KOH \checkmark$ (L) $Ca(OH)_2$
(M) $Al(OH)_3$ (N) NH_4OH
- 50| $bvBilUK \text{ GimW } Rjxq \cdot e \ddot{t} Y \text{ } \ddot{t} Kvb \text{ Avqb } Drcb \text{ K} \ddot{t} i ?$
(K) N^- (L) OH^-
(M) H^+ (N) $H^+ \text{ } | \text{ } NO_3^- \checkmark$
- 51| $KvP \text{ c} \cdot i \cdot \ddot{t} viK \text{ } \ddot{t} m \ddot{t} m \ddot{t} e \text{ } \ddot{t} KvbilU \text{ e} \cdot e \ddot{t} Z \text{ nq} ?$
(K) $Ca(OH)_2$ (L) $NaOH$
(M) KOH (N) $NH_3 \checkmark$
- 52| $\ddot{t} \cdot q \ddot{t} j \text{ PbKvg } Kivi \text{ Rb} \cdot e \cdot e \ddot{t} Z \text{ nq } \ddot{t} KvbilU ?$
(K) NH_3 (L) $Ca(OH)_2 \checkmark$
(M) CaO (N) $CaCO_3$
- 53| $Uq \ddot{t} j U \text{ } \ddot{t} Kbvi \text{ } \ddot{t} m \ddot{t} m \ddot{t} e \text{ } \ddot{t} KvbilU \text{ e} \cdot \text{envi } Kiv \text{ nq} ?$
(K) PbO (L) $NaOH \checkmark$
(M) NH_3 (N) CaO
- 54| $K \cdot j \text{ Pb } \ddot{t} K \text{ Kv} \ddot{t} R \text{ c} \ddot{t} qv \text{ Rb } Rq ?$
(K) $KvP \text{ c} \cdot i \cdot \ddot{t} viK \text{ } \ddot{t} m \ddot{t} m \ddot{t} e$
(L) $Uq \ddot{t} j U \text{ } \ddot{t} Kbvi \text{ } \ddot{t} m \ddot{t} m \ddot{t} e$
(M) $c \cdot v \text{ Lv } l \text{ qvi } Pb \text{ } \ddot{t} m \ddot{t} m \ddot{t} e \checkmark$
(N) $Lv \cdot \ddot{t} c \cdot i \text{ c} \ddot{t} K \text{ } m \ddot{t} m \ddot{t} e \text{ } \ddot{t} Rb$

- 55| $jN \text{ } NH_3 \cdot e \ddot{t} Y \text{ } bxj \text{ } \ddot{t} j \text{ Ug} \ddot{t} mi \text{ eY } Kxi \ddot{t} c \text{ nq} ?$
(K) $eY \text{ Ac} \ddot{t} ei \text{ ZZ} \checkmark$ (L) jvj
(M) $eY \text{ } \ddot{t} b$ (N) meR
- 56| $\ddot{t} K \cdot \ddot{t} \div K \ddot{t} \ddot{t} mWvi \text{ } ms \ddot{t} KZ \text{ } \ddot{t} KvbilU ?$
(K) KOH (L) $Ca(OH)_2$
(M) $NaOH \checkmark$ (N) $Mg(OH)_2$
- 57| $NaOH \text{ } \ddot{t} KvbilU \ddot{t} K \text{ ckigZ } Ki \ddot{t} e ?$
(K) $NaCl \checkmark$ (L) KOH
(M) HNO_3 (N) KCl
- 58| $c \cdot v \ddot{t} Z \cdot e \ddot{t} fZ \text{ } \ddot{y} viK \ddot{t} K \text{ Kx } e \ddot{t} j ?$
(K) $\ddot{y} vi \checkmark$ (L) $GimW$
(M) jeY (N) $c \cdot v \ddot{t}$
- 59| $\ddot{t} KvbilU \text{ c} \cdot v \ddot{t} Z \text{ } \ddot{t} m \ddot{t} Y \text{ } i \ddot{t} c \cdot e \ddot{t} fZ \text{ nq} ?$
(K) $Kcvi \text{ A} \cdot vBW$ (L) $Avqib \text{ A} \cdot vBW$
(M) $\ddot{t} m \ddot{t} Wqvg \text{ A} \cdot vBW \checkmark$ (N) $Avqib \text{ nvB} \ddot{t} W \cdot vBW$
- 60| $\ddot{t} KvbilU \text{ } \ddot{y} vi \text{ bq} ?$
(K) NaO (L) $Ca(OH)_2$
(M) NH_4OH (N) $Fe(OH)_2 \checkmark$
- 61| $\ddot{t} KvbilU \text{ } \ddot{y} viK \text{ } \ddot{t} K \ddot{t} \cdot \ddot{y} vi \text{ bq} ?$
(K) $\ddot{t} m \ddot{t} Wqvg \text{ A} \cdot vBW$ (L) $K \cdot \ddot{t} j \text{ } \ddot{t} m \ddot{t} qvg \text{ A} \cdot vBW$
(M) $Kcvi \text{ A} \cdot vBW \checkmark$ (N) $c \cdot v \ddot{t} m \ddot{t} qvg \text{ nvB} \ddot{t} W \cdot vBW$
- 62| $Ca(OH)_2 \text{ Gi } Rjxq \cdot e \ddot{t} Y \text{ } \ddot{t} j \text{ Ug} \ddot{t} m \text{ } \ddot{t} c \cdot v \ddot{t} i \text{ } \ddot{t} Kvb \text{ fY } aviY \text{ Ki} \ddot{t} e ?$
(K) meR (L) $bxj \checkmark$
(M) $nj \cdot$ (N) $Kg \ddot{t} v$
- 63| $\ddot{t} Zj \text{ } | \text{ } P \ddot{t} ei \text{ } m \ddot{t} \cdot \ddot{t} e \cdot \ddot{t} m \ddot{t} qv \text{ K} \ddot{t} i \text{ } m \ddot{t} v \text{ } Drcb \text{ K} \ddot{t} i \text{ } \ddot{t} KvbilU ?$
(K) $NaOH \text{ } (\ddot{y} vi) \checkmark$ (L) $NaCl \text{ } (jeY)$
(M) $H_2SO_4 \text{ } (GimW)$ (N) $Fe(OH)_2 \text{ } (\ddot{y} vi)$
- 64| $A \cdot \ddot{t} g \cdot v \text{ } b \text{ } qvg \text{ } \ddot{t} Kvi \text{ } vBW \text{ } | \text{ } K \cdot \ddot{t} j \text{ } \ddot{t} m \ddot{t} qvg \text{ } \text{nvBW} \cdot vB \ddot{t} Wi \text{ } Gi \text{ } \ddot{t} g \text{ } K \ddot{t} Y \ddot{t} K$
 $D \ddot{t} \ddot{t} K \ddot{t} j \text{ } \ddot{t} h \text{ } M \cdot \ddot{t} m \text{ } Drcb \text{ nq } Z \ddot{t} Z \text{ } \ddot{t} fRv \text{ } jvj \text{ } \ddot{t} j \text{ Ug} \ddot{t} m \text{ } \ddot{t} c \cdot v \ddot{t} i \text{ } ai \ddot{t} j$
 $\ddot{t} j \text{ Ug} \ddot{t} mi \text{ e} \ddot{t} Yi \text{ Kx } NU \ddot{t} e ?$
(K) $eY \text{ Ac} \ddot{t} ei \text{ ZZ} \cdot \ddot{t} K \ddot{t} e$
(L) $A \cdot \ddot{t} aKZi \text{ } jvj \text{ eY } aviY \text{ Ki} \ddot{t} e$
(M) $eY \text{ } bxj \text{ } n \ddot{t} j \checkmark$
(N) $eY \text{ } \ddot{t} b \text{ } n \ddot{t} q \text{ } h \ddot{t} e$
- 65| $Ca(OH)_2 + NH_4Cl \rightarrow CaCl_2 + \cdot X' \uparrow + H_2O \cdot X' \text{ Gi } g \ddot{t} a \cdot jvj \text{ } \ddot{t} j \text{ Ug} \ddot{t} m \text{ } \ddot{t} c \cdot v \ddot{t} i \text{ } ai \ddot{t} j \text{ } \ddot{t} j \text{ Ug} \ddot{t} mi \text{ eY } \ddot{t} Ki \ddot{t} c \text{ n} \ddot{t} e ?$
(K) $bxj \text{ eY } aviY \text{ Ki} \ddot{t} e \checkmark$
(L) $eY \text{ Ac} \ddot{t} ei \text{ ZZ} \cdot \ddot{t} K \ddot{t} e$
(M) $A \cdot \ddot{t} aKZi \text{ } jvj \text{ eY } aviY \text{ Ki} \ddot{t} e$
(N) $eY \text{ } \ddot{t} b \text{ } n \ddot{t} q \text{ } h \ddot{t} e$
- 66| $\ddot{t} KvbilU \text{ } bxj \text{ } A \ddot{t} \ddot{t} \ddot{t} c \text{ } \ddot{t} \cdot q ?$
(K) $Zn(OH)_2$ (L) $Cu(OH)_2 \checkmark$



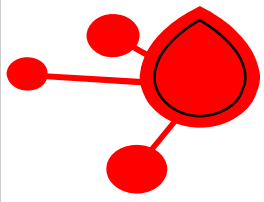
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- (M) $Fe(OH)_2$ (N) $Ca(OH)_2$
67| $K^+ j m q v g a v Z i j e t Y j N t m w W q v g n v B t W v B W t h w M K i t j$
 $K^+ j m q v g n v B t W v B W A a t i y \beta n q, G i e Y K x i c?$
(K) meR (L) $m v^+ v$
(M) $j v j t P e v^+ v g x$ (N) $n v j K v b x j$
68| $a v Z e n v B t W v B W C u(OH)_2 G i g a^+ A a Z i i^3 N a O H t h w M$
 $K i t j C u(OH)_2 K x i c e Y a v i Y K i t j?$
(K) $n v j K v b x j$ (L) $M v p b x j$
(M) $j v j t P e v^+ v g x$ (N) meR
69| $C u C l_2 + N a O H \rightarrow Y + N a C l; Y t h s M u i e Y K x i c?$
(K) $n v j K v b x j$ (L) $n v j K v m e R$
(M) $m v^+ v$ (N) $j v j t P e v^+ v g x$
70| $F e^{3+}(a q) + 3 O H^-(a q) \rightarrow F e(OH)_3(s); w e i \mu q v u t Z$
 $D r c b^+ u t K v b e t Y i?$
(K) $m v^+ v$ (L) meR
(M) $j v j t P e v^+ v g x$ (N) $n v j K v b x j$
71| $K^+ j m q v g j e t Y i m v t_+ Z x e y v t i i w e i \mu q v D r c b^+ K D i c k$
 $n v B t W v v B t W i A a t i y t c i e Y n$
(K) meR (L) $j v j t P e v^+ v g x$
(M) $m v^+ v$ (N) $n v j K v b x j$
72| $w R s K A v q b t m w W q v g n v B t W v v B t W i m v t_+ w e i \mu q v K x e t Y i$
 $A a t i y c t^+ q?$
(K) $m v^+ v$ (L) $e v^+ v g x$
(M) $n v j K v b x j$ (N) meR
73| $F e^{2+} I F e^{3+} G i m v t_+ O H^- G i w e i \mu q v K x K x e t Y i$
 $A a t i y c^+ Z i n q?$
(K) $D f t q B j v j t P e v^+ v g x$
(L) $D f t q B m e R$
(M) $F e^{2+} j v j t P e v^+ v g x I F e^{3+} m e R$
(N) $F e^{2+} m e R I F e^{3+} j v j t P e v^+ v g x$
74| $t K v b u i D c i^+ Z K v i t Y y v t i i g a^+ w^+ t q Z w o r c i e v n x Z n q?$
(K) H^+ (L) $O H^-$
(M) $N a^+$ (N) O^-
75| $N H_4 C l I C a(OH)_2-G i w g k Y t K Z v c w^+ t j t K v b M^+ v m D r c b$
 $n q?$
(K) CaO (L) N_2
(M) $C l_2$ (N) $N H_3$
76| $b x t P i t K v b a v Z i A v q b A^+ v g w b q v i^+ e t Y i m v t_+ t K v b i j c$
 $A a t i y c D r c b K i b v?$
(K) $F e^{2+}$ (L) $Z n^{2+}$
(M) $C a^{2+}$ (N) $A l^{3+}$

- 77| $m v a v i Y M v p n v B t W t K v i i K G i m W f i A b c v t Z K Z U K n v B t W t R b$
 $t K v i v B W^+ v t K?$
(K) 15% (L) 25%
(M) 35% (N) 45%
78| $t K v b u R j x q^+ e t Y m e t P t q K g c i g v Y n v B W v B W A v q b$
 $(O H^-) D r c b K i?$
(K) NaOH (L) KOH
(M) $F e(OH)_2$ (N) $Ca(OH)_2$
79| $w e i^+ x A e^+ v (100\% w e i^+ x) t K v b u M^+ v m x q A e^+ v q^+ v t K?$
(K) $H N O_3$ (L) $H_2 S O_4$
(M) HCl (N) $H_2 C O_3$
80| $R j x q^+ e t Y t K v b A v q b u F Y i Z i K P v R e n b K i?$
(K) $n v B t W t R b A v q b$ (L) $n v B W v B W A v q b$
(M) $t m w W q v g A v q b$ (N) $A^+ v g w b q v g A v q b$
81| $t K v b G i m W t K w e t h v R t b i n v Z t^+ t K i y v i R b^+ e v^+ w i g e t Y i$
 $t e v Z t j i v L v n q?$
(K) $M v p n v B t W t K v i i K G i m W$
(L) $M v p b v B u K G i m W$
(M) $M v p m v j d D i i K G i m W$
(N) $t K v b u B b q$
82| $b v B u K G i m W (H N O_3) t K t K b e v^+ v g x i s t q i t e v Z t j i v L v n q?$
(K) $w e t u v i Y t i v a K i v i R b^+$
(L) $A v q b x K i Y t i v a K i v i R b^+$
(M) $w e t q v R b t i v a K i v i R b^+$
(N) $m n t R t P b v i R b^+$
83| $M v p m v j d D i i K G i m W f i A b c v t Z c i q K Z U K m v j d D i i K$
 $G i m W^+ v t K?$
(K) 68% (L) 91%
(M) 95% (N) 98%
84| $M v p b v B u K G i m W f t i i A b c v t Z k Z K i v K Z f v m b v B u K G i m W$
 $^+ v t K?$
(K) 50% (L) 60%
(M) 70% (N) 80%
85| $0 K i^+ K i^+ G i A^+ t K v b u?$
(K) $t c v o v t b v$ (L) $w g i o$
(M) $A v N v Z$ (N) $y v i$
86| $Z K I t P v t L i R b^+ t K v b u A w a K y^+ Z K i?$
(K) $G i m W$ (L) $y v i$
(M) $A^+ v g w b q v^+ e Y$ (N) $A^+ v j t K v n j$
87| $G K t e v Z j w e i^+ x c w b t Z G K i u M^+ v m t K D^+ P P v t c^+ e x f Z K i v q$
 $c w b i p H G i g v b 7 t^+ t K K t g 5.6 n t q t M j | M^+ v m u K x?$
(K) N_2 (L) Ar



- 122| გული pH ლე ტექსტი (ეფ ალიზი³ ყვიყიტი) გზტ გკ
გულიტი pH გვბ გვტივი ჰვი?
(K) NH₄OH (L) (NH₄)₂SO₄ ✓
(M) Na₂SO₄ (N) Ca(OH)₂
- 123| ელი ცვბტი pH გი გვბ კზ?
(K) 7 (L) > 7
(M) 5.6 ✓ (N) 6.5
- 124| Na₂CO₃ ტივი
(K) ზე გლივ I `ეი ყვტიი ეე
(L) ზე გლივ I ზე ყვტიი ეე
(M) ზე ყვი I `ეი გლივტი ეე ✓
(N) `ეი ყვი I `ეი გლივტი ეე
- 125| FeCl₃ ტივი
(K) ზე გლივ I `ეი ყვტიი ეე ✓
(L) ზე გლივ I ზე ყვტიი ეე
(M) `ეი გლივ I `ეი ყვტიი ეე
(N) `ეი გლივ I `ეი ყვტიი ეე
- 126| Na₂CO₃ გი რიყი `ეი ტგბ ტე?
(K) ბიტიყი (L) აყი
(M) ყვიყი ✓ (N) დფაგა
- 127| ტივი გბტი ივივიტი მსტიკზ ტკბიტი
(K) CaSO₄·2H₂O (L) CaCO₃
(M) CaCO₃·MgCO₃ ✓
(N) K₂SO₄·Al₂(SO₄)₃·24H₂O
- 128| რცმტი ივივიტი მსტიკზ ტკბიტი
(K) CaSO₄·2H₂O ✓ (L) CaCO₃
(M) CaCO₃·MgCO₃ (N) Ca(HCO₃)₂
- 129| მვეტი მსტიკზ ტკბიტი
(K) R-COONa ✓
(L) C_nH_{2n+1}
(M) (R-COO)₂Ca
(N) K₂SO₄·Al₂(SO₄)₃·24H₂O
- 130| R ღვივ ბტიტი ტკბიტიტი კესტივი ნი?
(K) C_nH_{2n} (L) C_nH_{2n+1} ✓
(M) C_nH_{2n+2} (N) C_nH_{2n-2}
- 131| ავზმტი (Ca, Mg, Fe) ტკბი ბტი ეე `ეფზ _ვტი
ცვბ _ვიქ ლი ნი? ეფ მნტი რცბი ლივი `ი კივი ჰვი ბი?
(K) ევბკეტიუ (L) ტკვივბუ
(M) მვიტიუ (N) ტკვივბუ I მვიტიუ ✓
- 132| ავზმტი ტკბი ბტი ეე `ეფზ _ვტი ცვბ ა _ვიქ ლი
ნი?
(K) მვიტიუ ეე (L) ტკვივბუ ეე



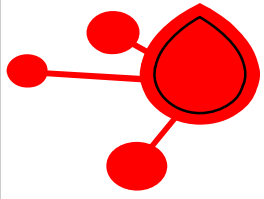
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- (M) $bV\ddot{B}U\dot{U}$ jeY (N) $eVB-Kve\ddot{b}U\checkmark$
- 133| $A\bar{v}q\dot{x}$ Li $c\dot{w}b\ddot{t}K$ $mn\ddot{t}R$ $\|Kf\ddot{v}te$ LiZv g^3 Kiv hvq?
(K) $\dot{t}m\dot{w}w$ $c\times\dot{Z}\ddot{Z}$
(L) $c\dot{v}ig\dot{u}U\dot{U}$ $c\times\dot{Z}\ddot{Z}$
(M) $A\dot{v}q\dot{b}$ $\dot{w}e\dot{b}g\dot{q}$ $\dot{t}\dot{i}\dot{R}b$ $c\times\dot{Z}\ddot{Z}$
(N) $D\ddot{E}vc$ $\dot{w}\ddot{t}q$ $dU\dot{v}\dot{b}v$ $c\times\dot{Z}\ddot{Z}\checkmark$
- 134| $\dot{t}K\dot{v}b$ $c\times\dot{Z}\ddot{Z}$ $\bar{v}q\dot{x}$ Li $c\dot{w}b\dot{i}$ LiZv $\dot{i}$ Kiv hvq bv?
(K) $\dot{t}m\dot{w}w$ $c\times\dot{Z}$
(L) $c\dot{v}ig\dot{u}U\dot{U}$ $c\times\dot{Z}$
(M) $\dot{w}dU\dot{w}K\dot{i}\dot{i}$ $\dot{w}\ddot{t}q$ $\dot{w}\ddot{Z}\dot{v}\dot{b}v\checkmark$
(N) $A\dot{v}q\dot{b}$ $\dot{w}e\dot{b}g\dot{q}$ $\dot{t}\dot{i}\dot{R}b$ $c\times\dot{Z}$
- 135| $\dot{w}D\dot{e}l\dot{t}q\dot{t}j\dot{i}$ $c\dot{w}b\ddot{t}Z$ $A\dot{v}\dot{t}m\dot{b}\dot{t}Ki$ $MnY\dot{t}h\dot{v}M\ddot{t}$ $gv\dot{I}v$ KZ?
(K) 0.01 $\dot{w}g.$ $Mv./\dot{w}jU\dot{v}\dot{i}\checkmark$ (L) 0.02 $\dot{w}g.$ $Mv./\dot{w}jU\dot{v}\dot{i}$
(M) 0.04 $\dot{w}g.$ $Mv./\dot{w}jU\dot{v}\dot{i}$ (N) 0.05 $\dot{w}g.$ $Mv./\dot{w}jU\dot{v}\dot{i}$
- 136| $cP\dot{b}k\dot{x}j$ $Mn\bar{v}j\dot{x}$ $gqj\dot{v}$ $AveR\dot{b}v$ $\dot{t}\dot{t}K$ $R\dot{v}j\dot{v}b\dot{x}$ $\dot{t}h\dot{v}M\ddot{t}$ $\dot{t}h$ $M\ddot{v}m$ $c\dot{v}lq\dot{v}$ hvq $\dot{N}$
(K) $c\dot{v}K\dot{i}ZK$ $M\ddot{v}m$ (L) $\dot{w}g\ddot{t}_b$ $M\ddot{v}m$
(M) $e\dot{v}\dot{t}q\dot{v}M\ddot{v}m\checkmark$ (N) $\dot{t}c\dot{t}U\dot{w}j$ $q\dot{v}g$ $M\ddot{v}m$
- 137| 1ppm Gi $m\dot{g}v\dot{b}$ $\dot{t}K\dot{v}b\dot{U}$?
(K) $c\dot{i}Z$ $\dot{w}jU\dot{v}\dot{i}$ $\dot{e}\dot{t}Y$ 1 $\dot{w}g\dot{v}j$ $M\dot{v}g$ $\dot{e}\checkmark$
(L) $c\dot{i}Z$ $\dot{w}jU\dot{v}\dot{i}$ $\dot{e}\dot{t}Y$ 1 $M\dot{v}g$ $\dot{e}$
(M) $c\dot{i}Z$ $\dot{w}g\dot{v}j$ $\dot{w}g\dot{v}i$ $\dot{e}\dot{t}Y$ 1 $\dot{w}g\dot{v}j$ $M\dot{v}g$ $\dot{e}$
(N) $c\dot{i}Z$ $\dot{w}g\dot{v}j$ $\dot{w}jU\dot{v}\dot{i}$ $\dot{e}\dot{t}Y$ 1 $M\dot{v}g$ $\dot{e}$
- 138| COD A $\dot{t}K\dot{v}b\dot{U}$?
(K) $i\dot{v}m\dot{v}q\dot{b}K$ $A\dot{w}\dot{t}Rb$ $P\dot{w}n\ddot{v}\checkmark$
(L) $i\dot{v}m\dot{v}q\dot{b}K$ $n\dot{v}B\dot{t}W\dot{t}Rb$ $P\dot{w}n\ddot{v}$
(M) $i\dot{v}m\dot{v}q\dot{b}K$ $b\dot{v}B\dot{t}U\dot{t}Rb$ $P\dot{w}n\ddot{v}$
(N) $\dot{w}Re$ $i\dot{v}m\dot{v}q\dot{b}K$ $A\dot{w}\dot{t}Rb\dot{i}$ $P\dot{w}n\ddot{v}$
- 139| $\dot{w}e\dot{w}Ps$ $c\dot{v}D\dot{w}\dot{t}i$ i $m\dot{s}\dot{t}KZ$ $\dot{t}K\dot{v}b\dot{U}$?
(K) $Ca(CO\dot{I})$ (L) $Ca(OC\dot{I})Cl\checkmark$
(M) $CaOCl_2$ (N) CaO_2Cl_2
- 140| $\dot{w}dU\dot{w}K\dot{i}\dot{i}$ $m\dot{s}\dot{t}KZ$ $\dot{t}K\dot{v}b\dot{U}$?
(K) $K_2SO_4.Al_2(SO_4)_3.22H_2O$
(L) $K_2SO_4.Al_2(SO_4)_3.23H_2O$
(M) $K_2SO_4.Al_2(SO_4)_3.24H_2O\checkmark$
(N) $K_2SO_4.Al_2(SO_4)_3.25H_2O$
- 141| $\dot{w}dU\dot{w}K\dot{i}\dot{i}$ $\dot{t}Z$ KZ AY $\dot{t}Kj\dot{v}m$ $c\dot{w}b$ $\dot{v}\dot{t}K$?
(K) 2 AY (L) 7 AY
(M) 10 AY (N) 24 AY $\checkmark$
- 142| $\dot{w}dU\dot{w}K\dot{i}\dot{i}$ $\dot{t}h\dot{v}\dot{t}M$ $c\dot{w}b$ $\dot{w}e\dot{i}\times Ki\dot{t}Yi$ $c\dot{w}\mu\dot{q}v\dot{i}$ $b\dot{v}g$ Kx ?
(K) $\dot{t}K\dot{w}\dot{i}\dot{t}bkb$ (L) $\dot{w}\ddot{Z}\dot{v}\dot{b}v\checkmark$
(M) $dU\dot{v}\dot{b}v$ (N) $Q\dot{v}Kb$

- 143| $c\dot{w}b\dot{i}$ $\dot{t}K\dot{v}b$ pH $g\dot{v}b\dot{U}$ $R\dot{x}\dot{t}e\dot{i}$ $Rb\ddot{t}$ $\dot{u}g\dot{t}K\bar{t}i\dot{c}$?
(K) $pH > 4.5$ (L) $pH > 9.6$
(M) $4.5 > pH > 9.6$ (N) $4.5 > pH > 9.5\checkmark$
- 144| BOD Gi A $\dot{K}x$?
(K) $\dot{w}Re$ $i\dot{v}m\dot{v}q\dot{b}K$ $n\dot{v}B\dot{t}W\dot{t}R\dot{b}\dot{i}$ $P\dot{w}n\ddot{v}$
(L) $\dot{w}Re$ $i\dot{v}m\dot{v}q\dot{b}K$ $K\dot{v}e\dot{t}b\dot{i}$ $P\dot{w}n\ddot{v}$
(M) $\dot{w}Re$ $i\dot{v}m\dot{v}q\dot{b}K$ $A\dot{w}\dot{t}R\dot{b}\dot{i}$ $P\dot{w}n\ddot{v}\checkmark$
(N) $\dot{w}Re$ $i\dot{v}m\dot{v}q\dot{b}K$ $b\dot{v}B\dot{t}U\dot{t}R\dot{b}\dot{i}$ $P\dot{w}n\ddot{v}$
- 145| $e\dot{v}q\dot{i}$ $Dc\dot{w}\ddot{t}$ $\dot{w}Z\ddot{Z}$ $c\dot{w}b\ddot{t}Z$ $Dc\dot{w}\ddot{t}$ Z mKj $\dot{w}Re$ $e\bar{t}K$ $f\dot{v}\dot{t}Z$ $\dot{t}h$ $c\dot{w}ig\dot{v}Y$ $A\dot{w}\dot{t}Rb$ $c\dot{t}q\dot{v}Rb$ $Z\dot{t}K$ $e\dot{v}j$ $nq\dot{N}$
(K) COD (L) BOD $\checkmark$
(M) pH (N) $BD\dot{b}f\dot{v}m\dot{v}j$ $B\dot{t}\dot{U}\dot{t}K\dot{U}i$
- 146| $c\dot{w}b\ddot{t}K$ $R\dot{x}eYg^3$ Kivi $m\dot{e}\dot{t}P\dot{t}q$ mnR $Dc\dot{v}q$ $\dot{t}K\dot{v}b\dot{U}$?
(K) $\dot{t}K\dot{w}\dot{i}\dot{t}bkb\checkmark$ (L) $dU\dot{v}\dot{b}v$
(M) $\dot{w}\ddot{Z}\dot{v}\dot{b}v$ (N) $Q\dot{v}Kb$
- 147| $\dot{w}e\dot{w}Ps$ $c\dot{v}D\dot{w}\dot{t}i$ $R\dot{x}eY\dot{t}K$ $R\dot{w}\dot{i}Z$ $K\dot{t}i$ $e\dot{v}$ $g\dot{v}\dot{t}i$ $\dot{t}K\dot{v}b\dot{U}i$ $m\dot{v}n\dot{v}\dot{t}h\ddot{t}$?
(K) $R\dot{v}q\dot{g}v\dot{b}$ $A\dot{w}\dot{t}Rb$ [O]
(L) $R\dot{v}q\dot{g}v\dot{b}$ $\dot{t}K\dot{w}\dot{i}\dot{b}$ [Cl] $\checkmark$
(M) $R\dot{v}q\dot{g}v\dot{b}$ $n\dot{v}B\dot{t}W\dot{t}Rb$ [H]
(N) $n\dot{v}B\dot{W}A\dot{w}\dot{t}B\dot{W}$ $A\dot{v}q\dot{b}$ [OH]
- 148| $c\dot{w}b\ddot{t}K$ KZ $\dot{w}g\dot{v}b\dot{U}$ $dU\dot{v}\dot{t}j$ $R\dot{x}eYg^3$ nq ?
(K) 15-20 $\dot{w}g\dot{v}b\dot{U}\checkmark$ (L) 20-25 $\dot{w}g\dot{v}b\dot{U}$
(M) 5-10 $\dot{w}g\dot{v}b\dot{U}$ (N) 5-15 $\dot{w}g\dot{v}b\dot{U}$
- 149| $A\dot{v}\dot{t}m\dot{b}K$ h^3 $c\dot{w}b\ddot{t}K$ $dU\dot{v}\dot{t}j\dot{N}$
(K) $c\dot{w}b$ $A\dot{v}\dot{t}m\dot{b}K$ h^3 nq (L) $c\dot{w}b$ $LiZv$ g^3 nq
(M) $A\dot{v}\dot{t}i\dot{v}$ $\dot{y}\dot{Z}K\dot{i}$ $nq\checkmark$ (N) $g\ddot{t}$ $c\dot{w}b\ddot{t}Z$ $c\dot{w}iYZ$ nq

$\dot{e}Y$	I	II	III	IV
pH	4	5	6	9

- $\dot{t}K\dot{v}b$ $\dot{B}\dot{t}\dot{U}$ $\dot{e}Y$ $m\dot{g}c\dot{w}ig\dot{v}\dot{t}Y$ $\dot{w}g\dot{v}\dot{t}j$ ckg $\dot{e}Y$ $\dot{w}Zi$ $n\dot{t}e$?
(K) $\dot{e}Y$ I I II (L) $\dot{e}Y$ II I IV $\checkmark$
(M) $\dot{e}Y$ II I III (N) $\dot{e}Y$ I I IV
- 151| $h\dot{w}\ddot{t}$ 25 $\dot{w}g\dot{v}j$ 1 $\dot{t}g\dot{v}j\dot{v}i$ HNO_3 $\dot{e}Y\dot{t}K$ 50 $\dot{w}g\dot{v}j$ 0.5 $\dot{t}g\dot{v}j\dot{v}i$ KOH $\dot{e}\dot{t}Yi$ $m\dot{v}\dot{t}$ $\dot{w}g\dot{v}\dot{t}b\dot{v}$ nq $Z\dot{t}e$ $Drcb$ $\dot{e}\dot{t}Yi$ pH KZ $n\dot{t}e\dot{N}$
(K) 5 (L) 7 $\checkmark$
(M) 9 (N) 14
- 152| $c\dot{w}iZ\ddot{t}$ $e\dot{v}U\dot{w}\dot{i}\dot{i}$ $\bar{t}c$ $Z\dot{v}c$ $\dot{w}\ddot{t}j$ -
(i) H_2SO_4 $\dot{w}e\dot{t}q\dot{v}\dot{w}RZ$ nq
(ii) SO_2 I SO_3 $Drcb$ nq
(iii) PbO_2 $\dot{w}e\dot{t}q\dot{v}\dot{w}RZ$ nq
 $\dot{w}b\dot{t}P\dot{i}$ $\dot{t}K\dot{v}b\dot{U}$ $m\dot{v}VK$?
(K) i I ii $\checkmark$ (L) i I iii



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(M) ii I iii (N) i, ii I iii
153| e⁻Uvii i c⁺÷K Kfv⁺ii fZ⁺i Dc⁻Z⁻v⁺K⁺N

- (i) jN H₂SO₄
(ii) Zn Gi A · vBW
(iii) Pb Gi A · vBW

wb⁺Pi tKvbU mVK?

- (K) i I ii (L) i I iii ✓
(M) ii I iii (N) i, ii I iii

154| jN Gm⁺Wi ^eik6" chv⁺jvPbv Ki⁺j cvIqv hvqN

- (i) cvq mKj jN GmW UK ⁻v⁺h³
(ii) avZe Kve⁺b⁺Ui mv⁺ _ e⁺μqv jeY, cwb I KveY-WvB-A · vBW ^Zi Ki
(iii) bxj wjUgvm⁺K jvj Ki

wb⁺Pi tKvbU mVK?

- (K) i I ii (L) ii I iii
(M) i I iii (N) i, ii I iii ✓

155| mvj⁺dd⁺iK GmW (H₂SO₄) N

- (i) Gi Rjxq ⁻eY bxj wjUgvm⁺K jvj Ki
(ii) avZe Kve⁺b⁺Ui mv⁺ _ e⁺μqv Ki CO₂ Drch Ki
(iii) avZe nvB⁺Wv · vB⁺Wi mv⁺ _ e⁺μqv Ki jeY I cwb Drch

wb⁺Pi tKvbU mVK?

- (K) i I ii (L) ii I iii
(M) i I iii (N) i, ii I iii ✓

156| jN cKiZi H₂SO₄N

- (i) UK ⁻v⁺h³
(ii) Zlor c⁺ienb Ki⁺Z cv⁺i
(iii) Cu Gi mv⁺ _ e⁺μqv CuSO₄ Drch Ki

wb⁺Pi tKvbU mVK?

- (K) i I ii ✓ (L) i I iii
(M) ii I iii (N) i, ii I iii

157| jN mvj⁺dd⁺iK GmW (H₂SO₄) N

- (i) Gi Rjxq ⁻eY e⁺r c⁺ienx
(ii) avZe A · vB⁺Wi mv⁺ _ e⁺μqv Ki jeY I cwb Drch Ki
(iii) avZi mv⁺ _ e⁺μqv Ki jeY I cwb Drch Ki

wb⁺Pi tKvbU mVK?

- (K) i I ii ✓ (L) ii
(M) iii (N) ii I iii

158| avZmg⁺ni mμqv⁺i μ⁺gN

- (i) Na > Mg > Ca > Pb
(ii) Na > Ca > Pb > Ag
(iii) K > Ca > Ag > H

wb⁺Pi tKvbU mVK?

- (K) i I ii (L) ii ✓
(M) iii (N) ii I iii

159| Kcv⁺i avZi (Cu) e⁺μqv K⁺iN

- (i) jN nvB⁺Wv⁺K⁺Wi K Gm⁺Wi mv⁺ _
(ii) Mvp mvj⁺dd⁺iK Gm⁺Wi mv⁺ _
(iii) jN I Mvp bvB⁺UK Gm⁺Wi mv⁺ _

wb⁺Pi tKvbU mVK?

- (K) i I ii (L) i I iii
(M) ii I iii ✓ (N) i, ii I iii

160| X(s) + H₂SO₄(aq) → Na₂SO₄(aq) + H₂O(l) + Co₂(g) Dc⁺iv³ e⁺μqv X(s) c⁻ _ n⁺Z cv⁺iN

- (i) Na₂CO₃
(ii) Na HCO₃
(iii) H₂CO₃

wb⁺Pi tKvbU mVK?

- (K) i (L) ii
(M) i I ii ✓ (N) i, ii I iii

161| X + jN GmW → jeY + cwb + KveY WvB A · vBW | X th⁺MU n⁺Z cv⁺iN

- (i) avZe Kve⁺bU
(ii) avZe nvB⁺Wv⁺Rb Kve⁺bU
(iii) avZe A · vBW

wb⁺Pi tKvbU mVK?

- (K) i I ii (L) ii I iii
(M) i I iii ✓ (N) i, ii I iii

162| GmW + X → jeY + cwb |

Dc⁺iv³ e⁺μqv X th⁺MU n⁺Z cv⁺i-

- (i) avZi A · vBW
(ii) avZi nvBW · vBW
(iii) AavZi A · vBW

wb⁺Pi tKvbU mVK?

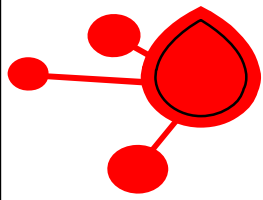
- (K) i I ii ✓ (L) ii I iii
(M) i I iii (N) i, ii I iii

163| GmW + X → jeY + cwb | GB e⁺μqv X th⁺MU n⁺Z cv⁺iN

- (i) avZi nvB⁺Wv · vBW
(ii) avZi A · vBW
(iii) avZi jeY

wb⁺Pi tKvbU mVK?

- (K) i I ii ✓ (L) ii I iii



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(M) i l iii (N) i, ii l iii
164 | Rjxq `eY nB#W#Rb tKv#BW M`m m#Yi#c Avq#BZ n#q
Drcb K#iN

- (i) $H^+ Cl^-$ l AvqY
(ii) $H^+ l OH^-$ AvqY
(iii) $H^+, Cl^- l OH^-$ AvqY

wb#Pi tKv#U m#VK?

- (K) i l ii ✓ (L) ii l iii
(M) i l iii (N) i, ii l iii

165 | ýviKmgñ

- (i) avZi A · vBW l nvBW · vBW
(ii) GmW#K ck#gZ K#i Gi `ekó`mPK ag wejß K#i
(iii) GmW#K ck#gZ K#i jeY l c#b Drcb K#i

wb#Pi tKv#U m#VK?

- (K) i l ii (L) ii l iii
(M) i l iii (N) i, ii l iii ✓

166 | weix mvj#dD#iK GmW (H₂SO₄) Ñ

- (i) Gm#Wi `ekó`cY ag c`kY K#i bv
(ii) Gi g#a` nvB#W#Rb Avqb (H⁺)_v#K bv
(iii) we`r c#ienb K#i bv

wb#Pi tKv#U m#VK?

- (K) i l ii (L) ii l iii
(M) i l iii (N) i, ii l iii ✓

167 | A`vg#bqv M`v#mi Rjxq `eYÑ

- (i) jvj #jUg#mi eY c#ieZb K#i
(ii) KvP c#i#viK #nt#te e`eüZ nq
(iii) Gm#Wi m#_ we#uqv K#i jeY l c#b Drcb K#i

wb#Pi tKv#U m#VK?

- (K) i l ii (L) i l iii
(M) ii l iii (N) i, ii l iii ✓

168 | K#÷K t#vWv-

- (i) Gi i#mvq#bK m#KZ NaOH
(ii) c#b#Z m#Yi#c `exfZ nq
(iii) %Zj l Piei m#_ we#uqv K#i m#evb Drcb K#i

wb#Pi tKv#U m#VK?

- (K) i l ii (L) i l iii
(M) ii l iii (N) i, ii l iii ✓

169 | K#jPbÑ

- (i) ývi RvZxq c`v_
(ii) Gi i#mvq#bK m#KZ CaOC₂
(iii) t`q#j PbK#g e`eüZ nq

wb#Pi tKv#U m#VK?

- (K) i l ii (L) i l iii ✓
(M) ii l iii (N) i, ii l iii

170 | KOH Gi Rjxq `eYÑ

- (i) KU `v` we#kó
(ii) Rjxq `eY `exfZ n#q H⁺ c`vb K#i
(iii) bxj #jUg#mi eY jvj K#i

wb#Pi tKv#U m#VK?

- (K) i l ii ✓ (L) i l iii
(M) ii l iii (N) i, ii l iii

171 | ýviÑ

- (i) GK#U we#kl ai#bi ýviK
(ii) c#b#Z m#Yi#c `exfZ nq
(iii) Gi GK#U D#g `óvŠ n#jv NaOH

wb#Pi tKv#U m#VK?

- (K) i l ii (L) ii l iii
(M) i l iii (N) i, ii l iii ✓

172 | ývi th#M m#v e#Yi Aat#ýkc m#ó K#iÑ

- (i) Fe avZi Avqb
(ii) Al l Ca avZi K`vUvqb
(iii) Zn²⁺ l Al³⁺ avZi A`vbvqb

wb#Pi tKv#U m#VK?

- (K) i l ii (L) i l iii
(M) ii l iii ✓ (N) i, ii l iii

173 | Mvp nvB#W#K#iK Gm#Wi tevZ#j i gL Lj#jÑ

- (i) nvjKv Kqvkv m#ó nq
(ii) Zxe SvS#jv MÜ cvlqv hvq
(iii) we`ü#iZ n#q cPÜ kã Drcb K#i l

wb#Pi tKv#U m#VK?

- (K) i l ii ✓ (L) i l iii
(M) ii l iii (N) i, ii l iii

174 | Mvp bvB#UK Gm#Wi tevZ#j i gL Lj#jÑ

- (i) nvjKv Kqvkv m#ó nq
(ii) #Mvjvcx e#Yi NO₂ M`m Drcb nq
(iii) Zxe SvS#jv MÜ tei nq

wb#Pi tKv#U m#VK?

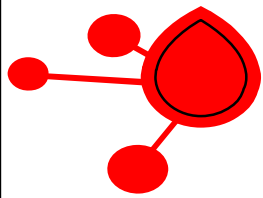
- (K) i l ii (L) i l iii ✓
(M) ii l iii (N) i, ii l iii

175 | Mvp HNO³ GmWÑ

- (i) ev`vgx e#Yi tevZ#j iLv nq
(ii) ýqK#iK c`v_



187 | $MgO + HCl \rightarrow A + H_2O$; we μ q w U ‡ Z A c ` v w Ñ



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(i) MgCl_2

(ii) Mg(OH)_2

(iii) Mg(OH)_2

উত্তর: (i) MgCl_2

(K) i, ii ✓

(L) i, ii ✓

(M) ii, iii

(N) i, ii, iii

188 | $\text{GmW} + \text{Yvi} \rightarrow \text{A} + \text{B}$; $\text{vei} \mu \text{qvi} \text{U} \text{Z} \text{N}$

(i) GmW I Yvi i $\text{eik} \text{O} \text{mPK}$ ag $\text{ie} \text{J} \text{B}$ nq

(ii) p^{H} Gi gvb $\text{c} \text{ie} \text{Zb}$ nq

(iii) jeY I $\text{c} \text{vib}$ Drcb $\text{K} \text{t} \text{i}$ |

উত্তর: (i) GmW I Yvi i $\text{eik} \text{O} \text{mPK}$ ag $\text{ie} \text{J} \text{B}$ nq

(K) i, ii

(L) i, ii, iii

(M) ii, iii

(N) i, ii, iii ✓

189 | ckgb $\text{vei} \mu \text{qvi} \text{AskMnY}$ $\text{K} \text{t} \text{i}$ N

(i) GmW I H^+ Avqb

(ii) Yvi i OH^- Avqb

(iii) GmW I Yvi i Ab^{vb} Avqb

উত্তর: (i) GmW I H^+ Avqb

(K) i, ii ✓

(L) i, ii, iii

(M) ii, iii

(N) i, ii, iii

190 | teikS cvDW $\text{t} \text{i}$ $\text{v} \text{K} \text{N}$

(i) NaHCO_3

(ii) UviUviK GmW

(iii) Na_2CO_3

উত্তর: (i) NaHCO_3

(K) i, ii ✓

(L) i, ii, iii

(M) ii, iii

(N) i, ii, iii

191 | $2\text{FeCl}_3(\text{aq}) + 3\text{Na}_2\text{CO}_3(\text{aq}) \rightarrow 6\text{X} + 3\text{CO}_2 + \text{Fe}_2\text{Cl}_3$ $\text{vei} \mu \text{qvi} \text{U} \text{Z} \text{N}$

(i) FeCl_3 GK U $\text{A} \text{xq}$ jeY

(ii) Na_2CO_3 Yvi xq jeY

(iii) X GK U ckgb $\text{th} \text{SM}$

উত্তর: (i) FeCl_3 GK U $\text{A} \text{xq}$ jeY

(K) i, ii

(L) i, ii, iii

(M) ii, iii

(N) i, ii, iii ✓

192 | mgvb ZxeZvi GmW I Yvi i $\text{vei} \mu \text{qvi} \text{Drcb}$ $\text{jeY} \text{N}$

(i) MgCl_2

(ii) $\text{A} \text{xq}$

(iii) Yvi xq

উত্তর: (i) MgCl_2

(K) ii

(L) ii, iii

(M) iii

(N) i ✓

193 | GmW eioi $\text{t} \text{Y} \text{t} \text{N}$

(i) Gi pH gvb 5.6

(ii) HNO_3 , H_2SO_4 I H_2CO_3 eioi $\text{c} \text{vib} \text{t} \text{Z}$ exfZ $\text{v} \text{t} \text{K}$

(iii) Gi $\text{d} \text{t} \text{j}$ $\text{g} \text{v} \text{U} \text{i}$ pH gvb 4 Gi $\text{t} \text{P} \text{t} \text{q}$ $\text{K} \text{t} \text{g}$ $\text{h} \text{v} \text{q}$

উত্তর: (i) Gi pH gvb 5.6

(K) i, ii

(L) ii, iii

(M) i, iii

(N) i, ii, iii ✓

194 | GmW eioi Rb^{v} $\text{v} \text{q} \text{x} \text{N}$

(i) NO_2

(ii) CO_2

(iii) SO_2

উত্তর: (i) NO_2

(K) i, ii

(L) i, iii

(M) ii, iii

(N) i, ii, iii ✓

195 | GmW eioi Z $\text{v} \text{t} \text{K} \text{N}$

(i) KveibK GmW (H_2CO_3)

(ii) $\text{mvj} \text{d} \text{D} \text{I} \text{K}$ GmW (H_2SO_4)

(iii) $\text{b} \text{v} \text{B} \text{U} \text{K}$ GmW (HNO_3)

উত্তর: (i) KveibK GmW (H_2CO_3)

(K) i, ii

(L) i, iii

(M) ii, iii

(N) i, ii, iii ✓

196 | $\text{SO}_3 + \text{H}_2\text{O} \rightarrow \text{Y}$; $\text{vei} \mu \text{qvi} \text{Y}$ $\text{th} \text{SM} \text{U} \text{N}$

(i) H_2SO_3

(ii) H_2SO_4

(iii) GmW eioi Rb^{v} $\text{v} \text{q} \text{x}$

উত্তর: (i) H_2SO_3

(K) i, ii

(L) ii, iii ✓

(M) i, iii

(N) i, ii, iii

197 | RcmvgN

(i) Gi $\text{ms} \text{t} \text{KZ}$ $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$

(ii) $\text{c} \text{vib} \text{t} \text{Z}$ $\text{A} \text{v} \text{Zg} \text{v} \text{I} \text{v} \text{q}$ $\text{eY} \text{xq}$

(iii) $\text{c} \text{vib} \text{t} \text{Z}$ $\text{Dc} \text{v} \text{Z}$ $\text{v} \text{K} \text{t} \text{j}$ $\text{c} \text{vib}$ Li nq (mveib $\text{t} \text{dbv}$ Drcb $\text{Ki} \text{Z}$ $\text{cv} \text{t} \text{i}$ bv)

উত্তর: (i) Gi $\text{ms} \text{t} \text{KZ}$ $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$

(K) i, ii

(L) ii, iii

(M) i, iii ✓

(N) i, ii, iii

198 | $\text{c} \text{vib} \text{i}$ LiZvi Rb^{v} $\text{v} \text{q} \text{x}$ Ca , Mg , Fe $\text{av} \text{Zi} \text{N}$

(i) $\text{t} \text{K} \text{v} \text{i} \text{v} \text{BW}$ jeY

(ii) $\text{mvj} \text{t} \text{dU}$ jeY

(iii) evB $\text{Kve} \text{t} \text{bu}$ jeY

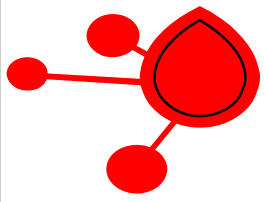
উত্তর: (i) $\text{t} \text{K} \text{v} \text{i} \text{v} \text{BW}$ jeY

(K) i, ii

(L) ii, iii

(M) i, iii ✓

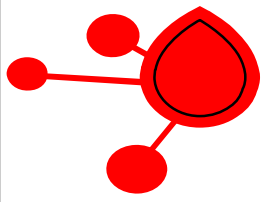
(N) i, ii, iii



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- (K) i l ii (L) i l iii
(M) ii l iii (N) i, ii l iii✓
199 | $\text{cwb}^{\dagger}\text{Z thme jeY } ^{\text{exfZ}}\text{vK}^{\dagger}\text{j cwb Li nqN}$
(i) $\text{Mg}(\text{HCO}_3)_2$
(ii) CaCl_2
(iii) Na_2SO_4
 $\text{wb}^{\dagger}\text{Pi } ^{\dagger}\text{KvbU mVK?}$
(K) i l ii✓ (L) i l iii
(M) ii l iii (N) i, ii l iii
200 | $\text{th avZi } ^{\dagger}\text{KvibW l mvj}^{\dagger}\text{dU jeY cwb}^{\dagger}\text{Z } ^{\text{exfZ}}\text{vK}^{\dagger}\text{j cwb Li nq-(mvevb } ^{\dagger}\text{dbv } ^{\dagger}\text{q v bv)}$
(i) $\text{K}^{\text{v}}\text{j}^{\text{m}}\text{qvq}$
(ii) $\text{g}^{\text{v}}\text{M}^{\dagger}\text{b}^{\text{m}}\text{qvq}$
(iii) Avqib
 $\text{wb}^{\dagger}\text{Pi } ^{\dagger}\text{KvbU mVK?}$
(K) i l ii (L) ii l iii
(M) i l iii (N) i, ii l iii✓
201 | $\text{K}^{\text{v}}\text{j}^{\text{m}}\text{qvq (Ca), g}^{\text{v}}\text{M}^{\dagger}\text{b}^{\text{m}}\text{qvq (Mg) l Avqib (Fe) Gi } ^{\dagger}\text{Kvb ai}^{\dagger}\text{bi jeY cwb}^{\dagger}\text{Z } ^{\text{exfZ}}\text{vK}^{\dagger}\text{j cwb Li nq? (mvevb } ^{\dagger}\text{dbv } ^{\dagger}\text{L v } ^{\dagger}\text{q bv)}$
(i) $\text{evB Kve}^{\dagger}\text{bU jeY}$
(ii) $\text{mvj}^{\dagger}\text{dU jeY}$
(iii) $\text{bvB}^{\dagger}\text{UU jeY}$
 $\text{wb}^{\dagger}\text{Pi } ^{\dagger}\text{KvbU mVK?}$
(K) i l ii✓ (L) ii l iii
(M) i l iii (N) i, ii l iii
202 | $\text{Li cwb}^{\dagger}\text{ZN}$
(i) $\text{Ca, Mg l Fe Gi jeY } ^{\text{exfZ}}\text{vK}^{\dagger}\text{j}$
(ii) $\text{mvevb } ^{\dagger}\text{dbv Drcb K}^{\dagger}\text{ibv}$
(iii) $\text{v}^{\dagger}\text{q}^{\dagger}\text{iU Avqb } ^{\text{exfZ}}\text{vK}^{\dagger}\text{j}$
 $\text{wb}^{\dagger}\text{Pi } ^{\dagger}\text{KvbU mVK?}$
(K) i l ii✓ (L) ii l iii
(M) i l iii (N) i, ii l iii
203 | $\text{vqx Li cwb}^{\dagger}\text{LiZv } ^{\text{ixKi}^{\dagger}\text{Yi c}^{\text{x}}\text{ZN}}$
(i) $\text{fmWv c}^{\text{x}}\text{Z}$
(ii) $\text{cvigUU c}^{\text{x}}\text{Z}$
(iii) $\text{Avqb vebgq tiRb c}^{\text{x}}\text{Z}$
 $\text{wb}^{\dagger}\text{Pi } ^{\dagger}\text{KvbU mVK?}$
(K) i l ii (L) ii l iii
(M) i l iii (N) i, ii l iii✓
204 | $\text{g}^{\text{v}}\text{cwbN}$
(i) $\text{mvev}^{\dagger}\text{bi mv}^{\dagger}\text{ } ^{\dagger}\text{dbv } ^{\dagger}\text{q}$

- (ii) $\text{e}^{\text{oi}}\text{ cwb}$
(iii) $\text{Zvc v}^{\dagger}\text{j } ^{\dagger}\text{Kvb Zjwb R}^{\dagger}\text{g bv}$
 $\text{wb}^{\dagger}\text{Pi } ^{\dagger}\text{KvbU mVK?}$
(K) i l ii (L) ii l iii
(M) i l iii (N) i, ii l iii✓
205 | $\text{Av}^{\dagger}\text{mbK } ^{\text{I}^{\dagger}\text{YN}}$
(i) $\text{cwb, 0.01 v}^{\text{g}}\text{M}^{\text{v}}\text{j}^{\text{Uvi Gi } ^{\dagger}\text{P}^{\dagger}\text{q } ^{\text{teik Av}^{\dagger}\text{mbK } ^{\text{v}^{\dagger}\text{K}}$
(ii) $\text{c}^{\dagger}\text{g nv}^{\dagger}\text{Z-cv}^{\dagger}\text{q } ^{\text{yZ m}^{\text{o}}\text{ nq}}$
(iii) $\text{gZ}^{\text{v}}\text{ l n}^{\dagger}\text{Z cv}^{\dagger}\text{i}$
 $\text{wb}^{\dagger}\text{Pi } ^{\dagger}\text{KvbU mVK?}$
(K) i l ii (L) ii l iii
(M) i l iii (N) i, ii l iii✓
206 | $\text{e}^{\text{ix}}\text{ cwbN}$
(i) $\text{eY l M}^{\text{Unxb } ^{\text{v}}\text{Q Zi j c}^{\text{v}}\text{v}}$
(ii) $\text{mvgvb}^{\text{v}}\text{ c}^{\text{igvY LibR jeY } ^{\text{exfZ}}\text{v}^{\dagger}\text{K}$
(iii) $\text{Kvb LibR jeY } ^{\text{exfZ}}\text{v}^{\dagger}\text{K bv}$
 $\text{wb}^{\dagger}\text{Pi } ^{\dagger}\text{KvbU mVK?}$
(K) i l ii✓ (L) ii l iii
(M) i l iii (N) i, ii l iii
207 | $\text{R}^{\text{tei Rb}^{\text{v}}\text{ cwb}^{\text{i}}\text{ th pH gvb cvYbvkKN}}$
(i) 0-4.5
(ii) 4.5-9.5
(iii) 9.5-14
 $\text{wb}^{\dagger}\text{Pi } ^{\dagger}\text{KvbU mVK?}$
(K) i l ii (L) ii l iii
(M) i l iii✓ (N) i, ii l iii
208 | $\text{Ca(OC l)Cl + H}_2\text{O} \rightarrow \text{X + [Y] v}^{\text{e}}\text{uq}^{\text{v}}\text{U}^{\dagger}\text{ZN}$
(i) $\text{yvi RvXq c}^{\text{v}}\text{v}$
(ii) $\text{R}^{\text{xeY R}^{\text{wiZ n}^{\dagger}\text{q g}^{\text{v}^{\text{iv}}\text{ hvq}}$
(iii) $\text{Y Rvqg}^{\text{v}}\text{b } ^{\dagger}\text{K}^{\text{vib}}$
 $\text{wb}^{\dagger}\text{Pi } ^{\dagger}\text{KvbU mVK?}$
(K) i l ii (L) i l iii✓
(M) ii l iii (N) i, ii l iii
209 | $\text{v}^{\text{e}}\text{Ps cvDWiN}$
(i) $\text{Gi m}^{\dagger}\text{KZ Ca(OC l) Cl}$
(ii) $\text{cwb}^{\dagger}\text{K LiZvg}^3\text{ Ki}^{\dagger}\text{Z e}^{\text{e}}\text{uZ nq}$
(iii) $\text{Rvqg}^{\text{v}}\text{b } ^{\dagger}\text{K}^{\text{vib}^{\dagger}\text{bi m}^{\text{v}^{\text{v}}\text{th}^{\text{v}}\text{ cwb}^{\dagger}\text{K R}^{\text{xeY g}^3\text{ K}^{\dagger}\text{i}}$
 $\text{wb}^{\dagger}\text{Pi } ^{\dagger}\text{KvbU mVK?}$
(K) i l ii (L) ii l iii
(M) i l iii✓ (N) i, ii l iii
210 | $\text{dU}^{\text{v}}\text{K}^{\text{vib}}$



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(i) $G \rightarrow 24 \text{ AY} \rightarrow K \rightarrow m \rightarrow c \rightarrow w \rightarrow b \rightarrow y \rightarrow K$

(ii) $c \rightarrow w \rightarrow b \rightarrow K \rightarrow e \rightarrow i \rightarrow x \rightarrow K \rightarrow i \rightarrow y \rightarrow e \rightarrow e \rightarrow u \rightarrow z \rightarrow n \rightarrow q$

(iii) $c \rightarrow w \rightarrow b \rightarrow i \rightarrow L \rightarrow i \rightarrow Z \rightarrow v \rightarrow i \rightarrow K \rightarrow i$

ৱবঃপি তঃকঃবঃউ মঃমঃকঃ

(K) i i ii✓

(L) ii i iii

(M) i i iii

(N) i, ii i iii

211| BOD-

(i) $g \rightarrow v \rightarrow b \rightarrow \text{Re} \rightarrow i \rightarrow v \rightarrow m \rightarrow q \rightarrow b \rightarrow K \rightarrow A \rightarrow v \rightarrow \text{Rb} \rightarrow P \rightarrow m \rightarrow v$

(ii) $c \rightarrow w \rightarrow b \rightarrow i \rightarrow e \rightarrow i \rightarrow x \rightarrow Z \rightarrow v \rightarrow i \rightarrow c \rightarrow i \rightarrow g \rightarrow v \rightarrow c \rightarrow A \rightarrow e \rightarrow v \rightarrow c \rightarrow i \rightarrow x \rightarrow y \rightarrow v$

(iii) $G \rightarrow i \rightarrow g \rightarrow v \rightarrow b \rightarrow t \rightarrow e \rightarrow k \rightarrow n \rightarrow j \rightarrow c \rightarrow w \rightarrow b \rightarrow i \rightarrow Z$

ৱবঃপি তঃকঃবঃউ মঃমঃকঃ

(K) i i ii

(L) ii i iii

(M) i i iii

(N) i, ii i iii✓

ৱবঃপি $Ab \rightarrow Q \rightarrow U \rightarrow c \rightarrow o \rightarrow 212 \rightarrow i \rightarrow 213 \rightarrow b \rightarrow s \rightarrow c \rightarrow k \rightarrow i \rightarrow D \rightarrow E \rightarrow i \rightarrow v \rightarrow i \rightarrow t$

$A \rightarrow G \rightarrow b \rightarrow G \rightarrow K \rightarrow U \rightarrow G \rightarrow m \rightarrow W \rightarrow h \rightarrow v \rightarrow g \rightarrow v \rightarrow b \rightarrow i \rightarrow c \rightarrow i \rightarrow K \rightarrow j \rightarrow x \rightarrow i \rightarrow c \rightarrow i \rightarrow P \rightarrow x \rightarrow i \rightarrow t \rightarrow K \rightarrow b \rightarrow t \rightarrow m \rightarrow Z \rightarrow n \rightarrow q \rightarrow l$

212| $A \rightarrow G \rightarrow m \rightarrow W \rightarrow U \rightarrow n \rightarrow j \rightarrow v \rightarrow i$

(K) $HCl \checkmark$

(L) H_2SO_4

(M) HNO_3

(N) CH_3-COOH

213| $A \rightarrow G \rightarrow m \rightarrow W \rightarrow U \rightarrow$

(i) $L \rightarrow v \rightarrow c \rightarrow i \rightarrow c \rightarrow i \rightarrow K \rightarrow m \rightarrow v \rightarrow q \rightarrow Z \rightarrow v \rightarrow i \rightarrow K \rightarrow i$

(ii) $A \rightarrow i \rightarrow Z \rightarrow i \rightarrow 3 \rightarrow b \rightarrow t \rightarrow m \rightarrow i \rightarrow y \rightarrow c \rightarrow i \rightarrow K \rightarrow j \rightarrow x \rightarrow i \rightarrow Z \rightarrow c \rightarrow v \rightarrow n$ (Peptic ulcer) $m \rightarrow o$

$K \rightarrow i$

(iii) $K \rightarrow v \rightarrow e \rightarrow b \rightarrow U \rightarrow j \rightarrow e \rightarrow Y \rightarrow i \rightarrow m \rightarrow v \rightarrow t \rightarrow e \rightarrow i \rightarrow m \rightarrow u \rightarrow q \rightarrow v \rightarrow K \rightarrow i \rightarrow CO_2 \rightarrow M \rightarrow v \rightarrow m \rightarrow D \rightarrow r \rightarrow c \rightarrow b \rightarrow K \rightarrow i$

ৱবঃপি তঃকঃবঃউ মঃমঃকঃ

(K) i i ii

(L) i i iii

(M) ii i iii

(N) i, ii i iii✓

ৱবঃপি $Ab \rightarrow Q \rightarrow U \rightarrow c \rightarrow o \rightarrow 214 \rightarrow i \rightarrow 215 \rightarrow b \rightarrow s \rightarrow c \rightarrow k \rightarrow i \rightarrow D \rightarrow E \rightarrow i \rightarrow v \rightarrow i \rightarrow t$

$g \rightarrow v \rightarrow i \rightarrow q \rightarrow v \rightarrow G \rightarrow K \rightarrow U \rightarrow A \rightarrow R \rightarrow v \rightarrow b \rightarrow v \rightarrow e \rightarrow Y \rightarrow b \rightarrow t \rightarrow q \rightarrow Z \rightarrow v \rightarrow i \rightarrow b \rightarrow x \rightarrow j \rightarrow u \rightarrow g \rightarrow v \rightarrow m \rightarrow t \rightarrow c \rightarrow c \rightarrow v \rightarrow i \rightarrow v \rightarrow L \rightarrow j \rightarrow t \rightarrow m$

$t \rightarrow L \rightarrow j \rightarrow t \rightarrow h \rightarrow v \rightarrow j \rightarrow u \rightarrow g \rightarrow v \rightarrow m \rightarrow t \rightarrow c \rightarrow c \rightarrow v \rightarrow i \rightarrow v \rightarrow j \rightarrow n \rightarrow t \rightarrow q \rightarrow t \rightarrow m \rightarrow Q \rightarrow j \rightarrow Z \rightarrow v \rightarrow i \rightarrow Z \rightarrow K \rightarrow i \rightarrow K \rightarrow t \rightarrow m \rightarrow W \rightarrow i \rightarrow e \rightarrow Y$

$t \rightarrow h \rightarrow v \rightarrow M \rightarrow K \rightarrow i \rightarrow v \rightarrow i \rightarrow c \rightarrow i \rightarrow D \rightarrow 3 \rightarrow i \rightarrow e \rightarrow Y \rightarrow A \rightarrow v \rightarrow j \rightarrow u \rightarrow g \rightarrow v \rightarrow m \rightarrow t \rightarrow c \rightarrow c \rightarrow v \rightarrow i \rightarrow i \rightarrow e \rightarrow Y \rightarrow c \rightarrow i \rightarrow r \rightarrow e \rightarrow Z \rightarrow Y \rightarrow K \rightarrow i \rightarrow b \rightarrow v \rightarrow l$

214| $A \rightarrow R \rightarrow v \rightarrow b \rightarrow v \rightarrow e \rightarrow Y \rightarrow x \rightarrow U \rightarrow Z \rightarrow K \rightarrow x \rightarrow Q \rightarrow j \rightarrow$

(K) $y \rightarrow v \rightarrow i$

(L) $j \rightarrow e \rightarrow Y$

(M) $c \rightarrow w \rightarrow b$

(N) $G \rightarrow i \rightarrow m \rightarrow W \rightarrow v$

215| $K \rightarrow i \rightarrow o \rightarrow K \rightarrow t \rightarrow m \rightarrow W \rightarrow i \rightarrow e \rightarrow Y \rightarrow t \rightarrow h \rightarrow v \rightarrow M \rightarrow K \rightarrow i \rightarrow v \rightarrow q \rightarrow n$

(i) $m \rightarrow s \rightarrow N \rightarrow i \rightarrow U \rightarrow Z \rightarrow e \rightarrow i \rightarrow m \rightarrow u \rightarrow q \rightarrow v \rightarrow U \rightarrow c \rightarrow k \rightarrow g \rightarrow b \rightarrow e \rightarrow i \rightarrow m \rightarrow u \rightarrow q \rightarrow v$

(ii) $D \rightarrow r \rightarrow c \rightarrow b \rightarrow t \rightarrow h \rightarrow s \rightarrow M \rightarrow i \rightarrow U \rightarrow b \rightarrow i \rightarrow t \rightarrow c \rightarrow y \rightarrow K \rightarrow c \rightarrow K \rightarrow i \rightarrow Z \rightarrow i$ (jeY)

(iii) $m \rightarrow s \rightarrow N \rightarrow i \rightarrow U \rightarrow Z \rightarrow e \rightarrow i \rightarrow m \rightarrow u \rightarrow q \rightarrow v \rightarrow U \rightarrow R \rightarrow v \rightarrow i \rightarrow Y \rightarrow e \rightarrow R \rightarrow v \rightarrow i \rightarrow Y \rightarrow e \rightarrow i \rightarrow m \rightarrow u \rightarrow q \rightarrow v$

ৱবঃপি তঃকঃবঃউ মঃমঃকঃ

(K) i i ii✓

(L) i i iii

(M) ii i iii

(N) i, ii i iii

ৱবঃপি $Ab \rightarrow Q \rightarrow U \rightarrow c \rightarrow o \rightarrow 216 \rightarrow i \rightarrow 217 \rightarrow b \rightarrow s \rightarrow c \rightarrow k \rightarrow i \rightarrow D \rightarrow E \rightarrow i \rightarrow v \rightarrow i \rightarrow t$

$j \rightarrow N \rightarrow H_2SO_4 \rightarrow G \rightarrow i \rightarrow m \rightarrow v \rightarrow t \rightarrow X \rightarrow i \rightarrow Y \rightarrow a \rightarrow v \rightarrow Z \rightarrow v \rightarrow i \rightarrow e \rightarrow i \rightarrow m \rightarrow u \rightarrow q \rightarrow v \rightarrow b \rightarrow i \rightarrow c \rightarrow t$

i. $X + H_2SO_4 \rightarrow XSO_4 + H_2$

ii. $X + H_2SO_4 \rightarrow K \rightarrow v \rightarrow b \rightarrow e \rightarrow i \rightarrow m \rightarrow u \rightarrow q \rightarrow v \rightarrow n \rightarrow q \rightarrow b \rightarrow v$

216| $Y \rightarrow a \rightarrow v \rightarrow Z \rightarrow i \rightarrow U \rightarrow t \rightarrow K \rightarrow v \rightarrow b \rightarrow U \rightarrow$

(K) $Cu \checkmark$

(L) Na

(M) Ca

(N) Mg

217| $D \rightarrow i \rightarrow x \rightarrow c \rightarrow K \rightarrow i \rightarrow i \rightarrow i \rightarrow G \rightarrow i \rightarrow t \rightarrow y \rightarrow t \rightarrow i \rightarrow n$

(i) $X \rightarrow G \rightarrow K \rightarrow i \rightarrow U \rightarrow m \rightarrow u \rightarrow q \rightarrow a \rightarrow v \rightarrow Z$

(ii) (i) $b \rightarrow s \rightarrow e \rightarrow i \rightarrow m \rightarrow u \rightarrow q \rightarrow v \rightarrow U \rightarrow c \rightarrow i \rightarrow Z \rightarrow v \rightarrow c \rightarrow b \rightarrow e \rightarrow i \rightarrow m \rightarrow u \rightarrow q \rightarrow v$

(iii) $Y \rightarrow G \rightarrow i \rightarrow A \rightarrow e \rightarrow v \rightarrow b \rightarrow m \rightarrow u \rightarrow q \rightarrow Z \rightarrow v \rightarrow i \rightarrow m \rightarrow i \rightarrow R \rightarrow n \rightarrow v \rightarrow B \rightarrow w \rightarrow t \rightarrow R \rightarrow b \rightarrow i \rightarrow D \rightarrow c \rightarrow i$

ৱবঃপি তঃকঃবঃউ মঃমঃকঃ

(K) i i ii✓

(L) i i iii

(M) ii i iii

(N) i, ii i iii

ৱবঃপি $Ab \rightarrow Q \rightarrow U \rightarrow c \rightarrow o \rightarrow 218 \rightarrow i \rightarrow 219 \rightarrow b \rightarrow s \rightarrow c \rightarrow k \rightarrow i \rightarrow D \rightarrow E \rightarrow i \rightarrow v \rightarrow i \rightarrow t$

$G \rightarrow K \rightarrow i \rightarrow U \rightarrow t \rightarrow U \rightarrow d \rightarrow e \rightarrow 3-5 \text{ cm}^3 \rightarrow j \rightarrow N \rightarrow n \rightarrow v \rightarrow B \rightarrow w \rightarrow t \rightarrow K \rightarrow w \rightarrow i \rightarrow K \rightarrow G \rightarrow i \rightarrow m \rightarrow W \rightarrow b \rightarrow t \rightarrow q \rightarrow G \rightarrow t \rightarrow Z \rightarrow G \rightarrow K$

$U \rightarrow K \rightarrow i \rightarrow v \rightarrow g \rightarrow v \rightarrow m \rightarrow b \rightarrow i \rightarrow m \rightarrow q \rightarrow v \rightarrow j \rightarrow e \rightarrow b \rightarrow t \rightarrow h \rightarrow v \rightarrow M \rightarrow K \rightarrow i \rightarrow v \rightarrow n \rightarrow j \rightarrow v \rightarrow l \rightarrow G \rightarrow K \rightarrow i \rightarrow U \rightarrow M \rightarrow v \rightarrow m \rightarrow X \rightarrow D \rightarrow r \rightarrow c \rightarrow b \rightarrow n \rightarrow q \rightarrow l$

218| $X \rightarrow M \rightarrow v \rightarrow m \rightarrow U \rightarrow i \rightarrow b \rightarrow v \rightarrow g \rightarrow K \rightarrow$

(K) $t \rightarrow K \rightarrow w \rightarrow i \rightarrow b$

(L) $n \rightarrow v \rightarrow D \rightarrow w \rightarrow t \rightarrow R \rightarrow b \rightarrow \checkmark$

(M) $A \rightarrow v \rightarrow t \rightarrow R \rightarrow b$

(N) $n \rightarrow v \rightarrow B \rightarrow w \rightarrow t \rightarrow R \rightarrow b \rightarrow t \rightarrow K \rightarrow v \rightarrow i \rightarrow v \rightarrow B \rightarrow W$

219| $t \rightarrow U \rightarrow d \rightarrow e \rightarrow i \rightarrow g \rightarrow t \rightarrow L \rightarrow Z \rightarrow v \rightarrow D \rightarrow r \rightarrow c \rightarrow b \rightarrow M \rightarrow v \rightarrow t \rightarrow m \rightarrow G \rightarrow K \rightarrow i \rightarrow U \rightarrow R \rightarrow j \rightarrow s \rightarrow K \rightarrow w \rightarrow i \rightarrow a \rightarrow i \rightarrow j \rightarrow K \rightarrow x$

$N \rightarrow U \rightarrow t \rightarrow e \rightarrow$

(K) $b \rightarrow t \rightarrow f \rightarrow h \rightarrow v \rightarrow e$

(L) $c \rightarrow P \rightarrow U \rightarrow e \rightarrow t \rightarrow u \rightarrow v \rightarrow i \rightarrow Y \rightarrow N \rightarrow U \rightarrow t \rightarrow e$

(M) $c \rightarrow K \rightarrow i \rightarrow M \rightarrow v \rightarrow m \rightarrow U \rightarrow R \rightarrow j \rightarrow D \rightarrow v \rightarrow t \rightarrow e \rightarrow \checkmark$

(N) $b \rightarrow x \rightarrow j \rightarrow e \rightarrow Y \rightarrow i \rightarrow k \rightarrow L \rightarrow v \rightarrow D \rightarrow r \rightarrow c \rightarrow b \rightarrow K \rightarrow i \rightarrow t \rightarrow e$

ৱবঃপি $mg \rightarrow x \rightarrow K \rightarrow i \rightarrow Y \rightarrow o \rightarrow q \rightarrow j \rightarrow y \rightarrow K \rightarrow i \rightarrow v \rightarrow G \rightarrow e \rightarrow s \rightarrow 220 \rightarrow i \rightarrow 221 \rightarrow b \rightarrow s \rightarrow c \rightarrow k \rightarrow i \rightarrow D \rightarrow E \rightarrow i \rightarrow v \rightarrow i \rightarrow t$

$2HNO_3 \rightarrow (ga \rightarrow g \rightarrow M \rightarrow v \rightarrow p) \rightarrow X + H_2O + 3[O]$

$2HNO_3 \rightarrow (M \rightarrow v \rightarrow p) \rightarrow Z + H_2O + [O]$

220| $X \rightarrow t \rightarrow h \rightarrow s \rightarrow M \rightarrow i \rightarrow U \rightarrow b \rightarrow t \rightarrow P \rightarrow i \rightarrow t \rightarrow K \rightarrow v \rightarrow b \rightarrow U \rightarrow$

(K) $NO \checkmark$

(L) NO_2

(M) N_2O_5

(N) NH_3

221| $Z \rightarrow t \rightarrow h \rightarrow s \rightarrow M \rightarrow i \rightarrow e \rightarrow Y \rightarrow K \rightarrow i \rightarrow c \rightarrow$

(K) $t \rightarrow M \rightarrow v \rightarrow j \rightarrow v \rightarrow c \rightarrow x$

(L) $e \rightarrow v \rightarrow v \rightarrow g \rightarrow x \rightarrow \checkmark$

(M) $i \rightarrow 3 \rightarrow j \rightarrow v \rightarrow j$

(N) $a \rightarrow m \rightarrow i$

ৱবঃপি $Ab \rightarrow Q \rightarrow U \rightarrow c \rightarrow o \rightarrow 222 \rightarrow i \rightarrow 223 \rightarrow b \rightarrow s \rightarrow c \rightarrow k \rightarrow i \rightarrow D \rightarrow E \rightarrow i \rightarrow v \rightarrow i \rightarrow t$

$A + Cu \rightarrow B + NO_2 + H_2O$

$M \rightarrow v \rightarrow p \rightarrow e \rightarrow v \rightarrow v \rightarrow g \rightarrow x \rightarrow e \rightarrow Y$

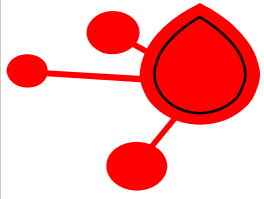
$A + Cu \rightarrow B + NO + H_2O$

$ga \rightarrow g \rightarrow M \rightarrow v \rightarrow p \rightarrow e \rightarrow Y \rightarrow n \rightarrow x \rightarrow b$

222| $D \rightarrow i \rightarrow x \rightarrow c \rightarrow K \rightarrow i \rightarrow B \rightarrow t \rightarrow h \rightarrow s \rightarrow M \rightarrow i \rightarrow U \rightarrow t \rightarrow K \rightarrow v \rightarrow b \rightarrow U \rightarrow$

(K) $CuCl_2$

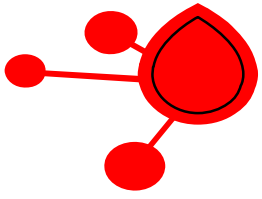
(L) CuO



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(M) $CuSO_4$ (N) $Cu(NO_3)_2$ ✓
 223| $D\ddot{I}xc\ddot{K}i A \text{ th}\ddot{S}M\ddot{U}\ddot{N}$
 (i) HNO_3
 (ii) $GK\ddot{U} RviYagx \text{ G}\ddot{m}W$
 (iii) $ev\ddot{v}gx \text{ e}\ddot{f}Yi \text{ tevZ}\ddot{j} \text{ msi}\ddot{Y}Y \text{ Kiv} \text{ nq}$
 $\text{wb}\ddot{P}i \text{ tKvb}\ddot{U} \text{ m}\ddot{V}K?$
 (K) i I ii (L) i I iii
 (M) ii I iii (N) i, ii I iii ✓
 $\text{wb}\ddot{P}i \text{ we}\ddot{m}\ddot{q}\ddot{v}\ddot{U} \text{ j}\ddot{Y} \text{ Ki Ges 224 I 225 bs c}\ddot{k}i \text{ D}\ddot{E}i \text{ `vIt}$
 $X(s) + Y(aq) \rightarrow Na_2SO_4(aq) + H_2O(l) + CO_2(g)$
 224| $D\ddot{I}xc\ddot{K} Y \text{ thvM}\ddot{U} \text{ n}\ddot{j} \text{ v}\ddot{N}$
 (K) N_2CO_3 (L) $NaHCO_3$
 (M) H_2SO_4 ✓ (N) H_2CO_2
 225| $X \text{ th}\ddot{S}M\ddot{U} \text{ n}\ddot{Z} \text{ cv}\ddot{t}i\ddot{N}$
 (i) N_2CO_3
 (ii) $NaHCO_3$
 (iii) H_2SO_4
 $\text{wb}\ddot{P}i \text{ tKvb}\ddot{U} \text{ m}\ddot{V}K?$
 (K) i I ii ✓ (L) ii I iii
 (M) i I iii (N) i, ii I iii
 $\text{wb}\ddot{P}i \text{ we}\ddot{m}\ddot{q}\ddot{v}\ddot{U} \text{ j}\ddot{Y} \text{ Ki Ges 226-227 bs c}\ddot{k}i \text{ D}\ddot{E}i \text{ `vIt}$
 $HNO_3 + CaO \rightarrow \text{'X'} + H_2O$
 226| $Dc\ddot{t}iv^3 \text{ we}\ddot{m}\ddot{q}\ddot{v} X \text{ Drcv}\ddot{U} Kx?$
 (K) N_2O (L) $Ca(NO_3)_2$ ✓
 (M) NO_2 (N) $CaHNO_3$
 227| $Dc\ddot{t}iv^3 \text{ we}\ddot{m}\ddot{q}\ddot{v}\ddot{U}$
 (K) $ciZ\ddot{v}cb \text{ we}\ddot{m}\ddot{q}\ddot{v}$ (L) $ckgb \text{ we}\ddot{m}\ddot{q}\ddot{v}$ ✓
 (M) $ci\ddot{j}griKiY \text{ we}\ddot{m}\ddot{q}\ddot{v}$ (N) $ms\ddot{t}hvRb \text{ we}\ddot{m}\ddot{q}\ddot{v}$
 $\text{wb}\ddot{P}i \text{ Ab}\ddot{t}^Q\ddot{U} \text{ c}\ddot{t}o \text{ 228 I 229 bs c}\ddot{k}i \text{ D}\ddot{E}i \text{ `vIt}$
 $Av\ddot{N}\ddot{G}K\ddot{U} \text{ t}\ddot{U} \text{ v}\ddot{U}D\ddot{t}e \text{ A}\ddot{v}\ddot{t}g\ddot{v}bq\ddot{v} \text{ tKvi}\ddot{B}W \text{ I jN}\ddot{Y}v\ddot{h}^3 \text{ Kivq}$
 $SvS\ddot{v}\ddot{j}v \text{ M}\ddot{U}h^3 \text{ eYnx} \text{ M}\ddot{v}m \text{ Drcb} \text{ nj | G}\ddot{U} \text{ cv}\ddot{b}\ddot{t}Z \text{ Le `eYxq|}$
 228| $SvS\ddot{v}\ddot{j}v \text{ M}\ddot{U}h^3 \text{ M}\ddot{v}m\ddot{U} Kx?$
 (K) NH_3 ✓ (L) PH_3
 (M) CO_2 (N) SO_2
 229| $Drcb \text{ M}\ddot{v}m\ddot{U}\ddot{N}$
 (i) $Rjxq \text{ `e}\ddot{f}Y \text{ Y}\ddot{v}iagx$
 (ii) $Gi \text{ `eY} \text{ Kiv} \text{ ci}\ddot{t}o\ddot{v}i \text{ Ki}\ddot{t}Z \text{ e}\ddot{e}\ddot{U}Z \text{ nq}$
 (iii) $\ddot{t}fRv \text{ bxj } \ddot{j}Ug\ddot{v}m\ddot{t}K \text{ jvj} \text{ K}\ddot{t}i$
 $\text{wb}\ddot{P}i \text{ tKvb}\ddot{U} \text{ m}\ddot{V}K?$
 (K) i I ii ✓ (L) i I iii
 (M) ii I iii (N) i, ii I iii
 $\text{wb}\ddot{P}i \text{ mgxKiY}\ddot{U} \text{ j}\ddot{Y} \text{ Ki Ges 230-231 bs c}\ddot{k}i \text{ D}\ddot{E}i \text{ `vIt}$

$ZnCl_2(aq) + 2NaOH(aq) \rightarrow X + NaCl$
 230| $X \text{ th}\ddot{S}M\ddot{U} \text{ n}\ddot{j} \text{ v}\ddot{N}$
 (K) H_2O (L) $Zn(OH)_2$ ✓
 (M) $Al(OH)_3$ (N) Na_2ZnO_2
 231| $D\ddot{I}xc\ddot{K}i \text{ we}\ddot{m}\ddot{q}\ddot{v} \text{ Av}\ddot{t}iv \text{ AlaK} \text{ ci}\ddot{g}vY \text{ NaOH} \text{ thvM} \text{ Ki}\ddot{t}j$
 $\text{`e}\ddot{f}Yi \text{ eY} \text{ Kx} \text{ n}\ddot{t}e?$
 (K) $eYnx$ ✓ (L) $mv\ddot{v}$
 (M) bxj (N) jvj
 $\text{wb}\ddot{P}i \text{ Ab}\ddot{t}^Q\ddot{U} \text{ c}\ddot{t}o \text{ 232 I 233 bs c}\ddot{k}i \text{ D}\ddot{E}i \text{ `vIt}$
 $GK\ddot{U} \text{ AR}\ddot{v}b \text{ avZi} \text{ m}\ddot{t}\ddot{t} \text{ b}\ddot{v}B\ddot{U}K \text{ G}\ddot{m}\ddot{t}Wi \text{ we}\ddot{m}\ddot{q}\ddot{v} \text{ eYnx} \text{ `eY} \text{ Drcb}$
 $nq | Drcb \text{ `e}\ddot{f}Yi \text{ mv}\ddot{t} \text{ t}\ddot{m}\ddot{v}Wq\ddot{v} \text{ nvB}\ddot{t}W \text{ `vBW} \text{ thvM} \text{ Ki}\ddot{t}j \text{ mv}\ddot{v} \text{ e}\ddot{f}Yi$
 $Aat\ddot{t}\ddot{Y}c \text{ `Zi} \text{ nq | A}\ddot{v}Zi \text{ i}^3 \text{ ci}\ddot{g}vY \text{ t}\ddot{m}\ddot{v}Wq\ddot{v} \text{ nvB}\ddot{t}W \text{ `vBW} \text{ thvM} \text{ Kiv}$
 $n\ddot{t}j \text{ cbivq} \text{ eYnx} \text{ `eY} \text{ cv}\ddot{I}q \text{ hvq|}$
 232| $AR}\ddot{v}b \text{ avZi}\ddot{U}\ddot{N}$
 (K) $Kcvi$ (L) $Avqib$
 (M) $K\ddot{v}j \text{ m}\ddot{q}\ddot{v}$ (N) Rsk ✓
 233| $D\ddot{I}xc\ddot{K}i\ddot{N}$
 (i) $jN \text{ G}\ddot{m}W \text{ I avZi} \text{ we}\ddot{m}\ddot{q}\ddot{v} \text{ avZe} \text{ jeY} \text{ Drcb} \text{ nq}$
 (ii) $avZe \text{ jeY} \text{ I Y}\ddot{v}\ddot{t}i \text{ we}\ddot{m}\ddot{q}\ddot{v} \text{ A}\ddot{v}eYxq \text{ avZe} \text{ nvB}\ddot{t}W \text{ `vB}\ddot{t}Wi$
 $Aat\ddot{t}\ddot{Y}c \text{ cv}\ddot{I}q \text{ hvq}$
 (iii) $me\ddot{t}K\ddot{I} \text{ av}\ddot{t}c \text{ `eYxq} \text{ R}\ddot{U}j \text{ th}\ddot{S}M \text{ Drcb} \text{ nq|}$
 $\text{wb}\ddot{P}i \text{ tKvb}\ddot{U} \text{ m}\ddot{V}K?$
 (K) i I ii (L) ii I iii
 (M) i I iii (N) i, ii I iii ✓
 $\text{wb}\ddot{P}i \text{ mgxKiY}\ddot{U} \text{ j}\ddot{Y} \text{ Ki Ges 234-235 bs c}\ddot{k}i \text{ D}\ddot{E}i \text{ `vIt}$
 $CuCl_2(aq) + 2NaOH(aq) \rightarrow X + NaCl(aq)$
 234| $X \text{ th}\ddot{S}M\ddot{U} Kx?$
 (K) $Ca(OH)_2$ ✓ (L) CO_2
 (M) NH_3 (N) H_2O
 235| $X \text{ th}\ddot{S}M\ddot{U}i \text{ eY} \text{ K}\ddot{t}ic?$
 (K) $mv\ddot{v}$ (L) $ev\ddot{v}gx$
 (M) $nvjKv \text{ bxj}$ ✓ (N) $Kv\ddot{t}jv$
 $\text{wb}\ddot{P}i \text{ Ab}\ddot{t}^Q\ddot{U} \text{ c}\ddot{t}o \text{ 236 I 237 bs c}\ddot{k}i \text{ D}\ddot{E}i \text{ `vIt}$
 $Y \text{ GK}\ddot{U} \text{ th}\ddot{S}\ddot{M}i \text{ `eY} \text{ hv} \text{ Lv}\ddot{v} \text{ ci}\ddot{t}o\ddot{v}K \text{ m}\ddot{v}nv\ddot{h} \text{ K}\ddot{t}i | G}\ddot{t}Z \text{ BD}\ddot{v}f\ddot{v}m\ddot{v}j$
 $B\ddot{U}\ddot{t}K\ddot{U}i \text{ g}\ddot{v}kZ \text{ Ki}\ddot{t}j \text{ Zv} \text{ jvj} \text{ eY} \text{ av}\ddot{Y} \text{ K}\ddot{t}i \text{ K}\ddot{S} \text{ Y} \text{ th}\ddot{S}\ddot{M}i \text{ `e}\ddot{f}Y \text{ pH}$
 $g\ddot{U}\ddot{v}\ddot{t}i \text{ B}\ddot{t}jK\ddot{t}Uv \text{ We}\ddot{t}j \text{ pH}=11 \text{ cv}\ddot{I}q \text{ hvq|} \text{ Y} \text{ th}\ddot{S}\ddot{M}i \text{ G}\ddot{v}Uv\ddot{m}W$
 $\text{wn}\ddot{t}e \text{ e}\ddot{e}\ddot{U}Z \text{ nq|}$
 236| $D\ddot{I}xc\ddot{K}i \text{ Y} \text{ th}\ddot{S}\ddot{M}i \text{ K}\ddot{t}ic?$
 (K) $mej \text{ G}\ddot{m}W$ (L) $`ej \text{ G}\ddot{m}W$
 (M) $`ej \text{ Y}\ddot{v}i$ ✓ (N) $mej \text{ Y}\ddot{v}i$
 237| $D\ddot{I}xc\ddot{K}i \text{ X} \text{ th}\ddot{S}\ddot{M}\ddot{U}\ddot{N}$
 (i) HCl



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(ii) HNO_3

(iii) Y হ্রস্বমি মব্ চক্গ বেμqv Kti jeY I cwb
wbPi tKvbiU mivK?

(K) i I ii (L) i I iii ✓
(M) ii I iii (N) i, ii I iii

wbPi Abt"Q"U cto 238 I 239 bs ctki Dēi vlt
BDibfvmvj wbtkK Kvji PvU

μgK bs	pH	eY
1	0-3	jvj
2	3-7	nj`
3	7	meR
4	7-11	bxj
5	11-14	te,wb

μgK bs 1 Ges μgK bs 4 mivtiRi BiU eY ci ui μqv Kti
jeY I cwb Zi Kti

238| BDibfvmvj wbtkK ej GmWi eY Ki c eY t Lq?

(K) jvj (L) meR
(M) bxj (N) nj ✓

239| Drcb jeYiUñ

(i) ckg
(ii) Aqx / GmWK
(iii) yvixq

wbPi tKvbiU mivK?

(K) i (L) i I ii
(M) ii ✓ (N) i I iii

wbPi Abt"Q"U cto 240 I 241 bs ctki Dēi vlt
miKvi Avdmvi Rvgj mvntei tctU e"vi Rb Wv3viri KtQ tMj
Wv3vi ejtjb th Zvi Peptic Ulcer ntqQ| ZtZ tctU c"vn
nt"Q| ZvB Zib Dcktgi Rb GKU UvetjU Pti tLZ eitjb|
UvetjU UwbqgZ tmeb Zib m ntq DvB|

240| UvetjU U Kx RvXq c"v_?

(K) A (L) yvi ✓
(M) jeY (N) bictcy c"v_

241| tmebKZ UvetjU U-

(i) GvUimW RvXq c"v_
(ii) Av jvj j UgvmtK bxj Kti
(iii) ckbg μqv msNiuZ Kti

wbPi tKvbiU mivK?

(K) i I ii (L) i I iii
(M) ii I iii (N) i, ii I iii ✓

wbPi Abt"Q"U cto 242 I 243 bs ctki Dēi vlt

wbvi Avq ZvK vZi Wv3viri KvQ wbtq Mtq ejtjb wbgqZ vZ
evm bv Kivq wgbvi vZ Kvjv vM ctoQ I vZ yq nt"Q| GtZ
Wv3vi ZvK CloseUp bvgK tctv wbtq wbgqZ vZ gvRtZ cvgk
wtjb|

242| bxPi tKvbiU KvY wgbvi vZi yq nt"Qj?

(K) GmW ✓ (L) yvi
(M) jeY (N) gviPv

243| wgbvi vZ evm Kivi tctv N

(i) yvi RvXq c"v_
(ii) GmW RvXq c"v_
(iii) ckbg μqv gva'tg vZK i yv Kti

wbPi tKvbiU mivK?

(K) i I ii (L) i I iii ✓
(M) ii I iii (N) i, ii I iii

wbPi Abt"Q"U cto 244 I 245 bs ctki Dēi vlt

X I Y U M'vnxq c"v_ eRvtZi mgq X M'v Drcb nq,
AvMqMii A, rvtZi mgq Y M'v U Drcb nq Ges wqvR KvUvi
mgq I Y M'v Drcb nq | X I Y M'v U GmW eió Rb" vqx |

244| D'xcKi Y M'v tKvbiU?

(K) NO_2 (L) SO_2 ✓
(M) CO (N) H_2SO_4

245| D'xcKi X M'v U N

(i) NO_2
(ii) CO_2
(iii) cwb i mv_ μqv Kti HNO_3 Drcb Kti

wbPi tKvbiU mivK?

(K) i I ii (L) i I iii ✓
(M) ii I iii (N) i, ii I iii

wbPi Abt"Q"U cto 246 I 247 bs ctki Dēi vlt

Rvjvj mvne mvvti k'í GjvKvi ctk GKU ctki wbgqZ gvQ
PvI Ktib| nvr GK' b eió KvY A'bk, t'jv gvQ gti t'f' m I v |

246| D'xcKi eió KvY ctki cwb i pH KZ nte?

(K) 7 (L) > 7
(M) < 7 (N) ≤ 4 ✓

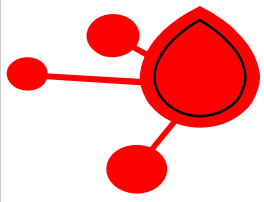
247| Rvjvj mvntei gvQ, t'jv gti hvIqvi KvYñ

(i) eió cwbZ GmWi Dc"vZ
(ii) ctki cwb i pH Ktg hvIq
(iii) ctki cwb i pH teo hvIq

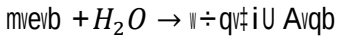
wbPi tKvbiU mivK?

(K) i I ii ✓ (L) i I iii
(M) ii I iii (N) i, ii I iii

wbPi μqvU j y Ki Ges 248-249 bs ctki Dēi vlt



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248 | $\text{div}qv\text{t}iU \text{Avqb} \text{tKvb}iU?$

- (K) R-COOH (L) R-COO⁻ ✓
(M) CH₃CO⁻ (N) C_nH_{2n+1}

249 | $mvevb \text{Kve}tbi \text{msL}^v \text{KZ} \text{ntZ} \text{cv}t\text{t}i?$

- (K) 5-10 (L) 10-12
(M) 12-18 ✓ (N) 24 Gi E^aY

$\text{wb}tPi \text{Ab}t^q \text{U} \text{cto} 250 \text{I} 251 \text{bs} \text{ct}ki \text{DE}i \text{vlt}$

$\text{cwb} \text{we}i \times \text{Ki}tYi \text{Kv}tR \text{wb}tq \text{mRZ} \text{GK}iU \text{ms}^v \text{GK}iU \text{Rjvk}tqi \text{BOD}$
 $\text{I} \text{COD} \text{cwigvY} \text{K}ti \text{m} \times v \text{S} \text{wbj} \text{th}, \text{H}^v \text{t}bi \text{cwb} \text{wIZ} \text{Zviv} \text{cwb}$
 $e^e \text{env}t\text{t}i \text{cte} \text{tK}i \text{wb}t \text{bk}tbi \text{civgk} \text{w} \text{jj}$

250 | $\text{tK}i \text{wb}t \text{bk}tbi \text{e}^e \text{envi} \text{Kiv} \text{nq} \text{N}$

- (K) $\text{we}i \text{Ps} \text{cvDW}i \text{v}$ (L) $\text{Ki} \div \text{K} \text{tmvW}$
(M) $\text{dU}i \text{K}i$ (N) Rcmvg

251 | $\text{cix} \text{y} \text{vq} \text{BOD} \text{I} \text{COD} \text{Gi} \text{g} \text{yb} \text{K}i \text{c} \text{Qj} \text{etj} \text{aviY} \text{Ki}?$

- (K) A^bK Kg (L) Kg
(M) $\text{te}i \text{K}$ ✓ (N) $\text{aviY} \text{Kiv} \text{m} \text{p} \text{eci} \text{bq}$

$\text{wb}tPi \text{Ab}t^q \text{U} \text{cto} 252 \text{I} 254 \text{bs} \text{ct}ki \text{DE}i \text{vlt}$

$\text{w}k \text{GjvK}i \text{GK}iU \text{Rjvk}tqj \text{cwb}tZ \text{pH} \text{gU} \text{v}t\text{t}i \text{m} \text{v} \text{v} \text{t} \text{t}^v \text{Lv} \text{tMj}$
 $\text{Gi} \text{pH} \text{Gi} \text{g} \text{yb} 4 \text{GB} \text{cwb}tK \text{Rxe} \text{eme} \text{tmi} \text{A}^h \text{vM} \text{tN} \text{vY} \text{Kiv}$
 nq

252 | $\text{D}i \text{xc} \text{K} \text{t} \text{K} 2 \text{I} 3 \text{bs} \text{ct}ki \text{DE}i \text{vlt}$

- (K) $\text{GimW} \text{Y}$ ✓
(L) $\text{y} \text{vixq} \text{Y}$
(M) $\text{Zvc} \text{Y}$
(N) $\text{Av} \text{m} \text{bK} \text{Y}$

253 | $\text{Rxe} \text{eme} \text{tmi} \text{Rb}^v \text{pH} \text{Gi} \text{m} \text{ave}^v \text{g} \text{yb} \text{KZ}?$

- (K) 0-4.5 (L) 4.5-9.5 ✓
(M) 0-7 (N) 7-14

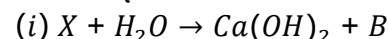
254 | $\text{R} \text{te}i \text{cvYb}i \text{K} \text{pH} \text{g} \text{yb} \text{N}$

- (i) 0-4.5
(ii) 4.5-9.5
(iii) 9.5-14

$\text{wb}tPi \text{tKvb}iU \text{m} \text{VK}?$

- (K) i (L) iii
(M) i I iii ✓ (N) i, ii I iii

$\text{wb}tPi \text{Ab}t^q \text{U} \text{cto} 255 \text{I} 256 \text{bs} \text{ct}ki \text{DE}i \text{vlt}$



255 | $\text{D}i \text{xc} \text{K} \text{Ki} B \text{tKvb}iU?$

- (K) $\text{Rq} \text{g} \text{yb} \text{tK}i \text{b} \text{v}$ ✓
(L) $\text{Rq} \text{g} \text{yb} \text{nvB} \text{W} \text{tRb}$

(M) $\text{Rq} \text{g} \text{yb} \text{A} \text{t} \text{Rb}$

(N) $\text{A} \text{t} \text{Rb} \text{cigY}$

256 | $\text{D}i \text{xc} \text{K} \text{Ki} X \text{th} \text{SM}i \text{U} \text{N}$

(i) $\text{GK}iU \text{we}i \text{AK}$

(ii) $\text{GimW} \text{e} \text{oi} \text{K}i \text{Y}$

(iii) $\text{cwb} \text{we}i \times \text{Ki}tY \text{e}^e \text{e} \text{Z} \text{nq}$

$\text{wb}tPi \text{tKvb}iU \text{m} \text{VK}?$

- (K) i I ii (L) i I iii ✓
(M) ii I iii (N) i, ii I iii

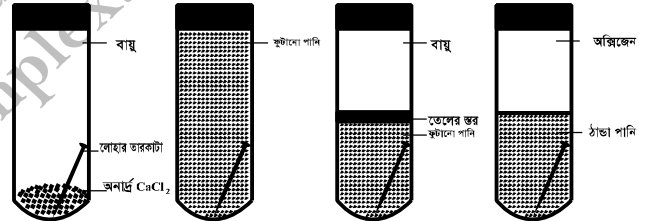
kg Aa^vqt L^bR m^au^v a^vZzAa^vZz

1 | $\text{tU} \text{etj} \text{tKvb} \text{tK}i \text{KW}iU \text{m} \text{aviY} \text{Z} \text{a} \text{Zi} \text{e} \text{ik} \text{c} \text{K} \text{v} \text{K} \text{Ki}?$

MjbsK	U ^b bsK	NbZ
(K) 1539	2887	7.86 ✓
(L) -219	183	.002
(M) -113	45	0.79
(N) 117	444	1.96

$\text{D}i \text{xc} \text{K} \text{t} \text{K} 2 \text{I} 3 \text{bs} \text{ct}ki \text{DE}i \text{vlt}$

$\text{GK} \text{t} \text{K} \text{y} \text{v} \text{g} \text{g} \text{v} \text{P}i \text{Abm} \text{U} \text{v} \text{Ki} \text{Qj} \text{Zviv} \text{evg} \text{t} \text{K} \text{m} \text{g} \text{v} \text{t} \text{q}$
 $\text{P} \text{v} \text{v} \text{U} \text{tU} \text{v} \text{UD} \text{te} \text{P} \text{v} \text{v} \text{U} \text{tj} \text{v} \text{v} \text{v} \text{t} \text{ct} \text{K} \text{vLj} \text{Ges} \text{wb}tPi \text{P}i \text{v} \text{bh} \text{vq} \text{x}$
 $e^e \text{v} \text{v} \text{bj}$



2 | $\text{tKvb} \text{tU} \text{v} \text{UD} \text{e} \text{U} \text{Z} \text{me} \text{t} \text{P} \text{t} \text{q} \text{te}i \text{K} \text{g} \text{v} \text{P}i \text{a} \text{ite}?$

- (K) c_g (L) $\text{w} \text{Z} \text{xq}$
(M) $\text{ZZ} \text{xq}$ (N) $\text{PZ} \text{v}$ ✓

3 | $\text{cix} \text{y} \text{v} \text{U}i \text{w} \text{f} \text{E} \text{Z} \text{th} \text{m} \times v \text{smgn} \text{MnY} \text{Kiv} \text{hvq} \text{N}$

- (i) $\text{g} \text{v} \text{P}i \text{a} \text{v} \text{v} \text{Rb}^v \text{A} \text{t} \text{Rb} \text{A} \text{v} \text{K}^v \text{K}$
(ii) $\text{jeY} \text{c} \text{f} \text{veK} \text{m} \text{t} \text{m} \text{te} \text{K} \text{v} \text{R} \text{Ki} \text{t} \text{Q}$
(iii) $\text{t} \text{Kej} \text{A} \text{t} \text{Rb} \text{D} \text{c} \text{v} \text{Z} \text{v} \text{K} \text{t} \text{B} \text{g} \text{v} \text{P}i \text{a} \text{t} \text{v} \text{bv}$

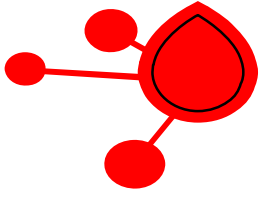
$\text{wb}tPi \text{tKvb}iU \text{m} \text{VK}?$

- (K) i I ii (L) ii I iii
(M) i I iii ✓ (N) i, ii I iii

4 | $\text{m} \text{v} \text{b} \text{t} \text{m} \text{v} \text{v} \text{t} \text{Kvb} \text{bg} \text{v} \text{U} \text{m} \text{te} \text{P} \text{p}?$

- (K) 18 $\text{K}^v \text{t} \text{U} \text{v}$ ✓ (L) 21 $\text{K}^v \text{t} \text{U} \text{v}$
(M) 22 $\text{K}^v \text{t} \text{U} \text{v}$ (N) 24 $\text{K}^v \text{t} \text{U} \text{v}$

5 | $\text{jN} \text{Ki} \text{tY} \text{cwb}tZ \text{tdv} \text{U} \text{vq} \text{tdv} \text{U} \text{vq} \text{m} \text{v} \text{jd} \text{D} \text{v} \text{K} \text{GimW} \text{thvM} \text{Kivi}$
 $\text{K} \text{v} \text{Y} \text{m} \text{v} \text{jd} \text{D} \text{v} \text{K} \text{GimW} \text{N}$



স্টুডেন্ট গাইড লাইন

(i) $Gi \text{ } nB\ddot{W}kb \text{ } Zvc \text{ } AZ\ddot{w}aK$

(ii) $GK\ddot{U} \text{ } \ddot{U}\ddot{Y}viKxq \text{ } GimW$

(iii) $\ddot{y}qKviK \text{ } c\ddot{v}_$

$\ddot{w}b\ddot{P}i \text{ } \ddot{t}KvbiU \text{ } m\ddot{V}K?$

(K) i ✓

(L) i I ii

(M) ii I iii

(N) i, ii I iii

6 | $SO_3 \text{ } \ddot{t}K \text{ } 98\% \text{ } m\ddot{v}j\ddot{w}dD\ddot{w}iK \text{ } Gim\ddot{W} \text{ } \ddot{t}kvIY \text{ } K\ddot{t}i \text{ } c\ddot{w}b \text{ } \ddot{t}hv\ddot{t}M \text{ } c\ddot{t}qvRbgZ \text{ } jN \text{ } Kiv \text{ } nq, \text{ } KviY \text{ } m\ddot{v}j\ddot{w}dD\ddot{w}iK \text{ } GimW\ddot{N}$

(i) $Rjxqev\ddot{t}u\ddot{t}i \text{ } m\ddot{v}_ \text{ } Nb \text{ } Kqvkv \text{ } m\ddot{r}o \text{ } K\ddot{t}i$

(ii) $c\ddot{w}b \text{ } \ddot{t}hv\ddot{t}M \text{ } c\ddot{P}i \text{ } Zvc \text{ } \ddot{w}bMZ \text{ } K\ddot{t}i$

(iii) $GK\ddot{U} \text{ } \ddot{w}bi\ddot{z} \text{ } K \text{ } c\ddot{v}_$

$\ddot{w}b\ddot{P}i \text{ } \ddot{t}KvbiU \text{ } m\ddot{V}K?$

(K) i ✓

(L) i I ii

(M) ii I iii

(N) i, ii I iii

7 | $m\ddot{v}\ddot{v}g\ddot{w}U\ddot{t}Kl\ddot{I}jb \text{ } (AlGi \text{ } L\ddot{w}bR) \text{ } \ddot{t}Kv_vq \text{ } c\ddot{v}Iqv \text{ } hvq?$

(K) $\ddot{w}b\ddot{R}ci$

(L) $\ddot{t}b\ddot{t}\ddot{t}Kvbi \text{ } \ddot{w}eRqci \text{ } \checkmark$

(M) $K \cdot \ddot{e}vRvi$

(N) $U\ddot{v}\ddot{z}vB\ddot{t}j \text{ } i \text{ } gaci$

8 | $\ddot{t}Kl\ddot{I}jb \text{ } \ddot{e}v \text{ } m\ddot{v}\ddot{v} \text{ } g\ddot{w}U \text{ } \ddot{t}Kvb \text{ } \ddot{a}vZ\ddot{t}K \text{ } mg\ddot{x}?$

(K) Fe

(L) Al ✓

(M) Ca

(N) Zn

9 | $\ddot{t}KvbiU\ddot{t}K \text{ } P\ddot{v}qbv \text{ } \ddot{t}K \text{ } \ddot{e}j\ddot{v} \text{ } nq?$

(K) $\ddot{e} \cdot \ddot{v}BU$

(L) $\ddot{t}Kl\ddot{I}jb \text{ } \checkmark$

(M) $\ddot{w}mbrevi$

(N) $K\ddot{A}j\ddot{v}g\ddot{v}Bb$

10 | $f\text{-}Z\ddot{t}K \text{ } \ddot{c}a\ddot{v}b \text{ } D\ddot{c}v\ddot{v}b \text{ } \ddot{t}g\ddot{t}j \text{ } \ddot{t}KvbiU?$

(K) $\ddot{w}m\ddot{t}j \text{ } Ki \text{ } (Si)$

(L) $A\ddot{v}j\ddot{g}i\ddot{b}q\ddot{v}g \text{ } (Al)$

(M) $A\ddot{w} \cdot \ddot{t}Rb \text{ } (O_2) \text{ } \checkmark$

(N) $A\ddot{v}qjb \text{ } (Fe)$

11 | $fZ\ddot{t}K \text{ } c\ddot{v}c\ddot{v}Zvi \text{ } \ddot{t}Kvb \text{ } \mu g \text{ } m\ddot{V}K?$

(K) $A\ddot{w} \cdot \ddot{t}Rb \text{ } > \ddot{w}m\ddot{t}j \text{ } Kb \text{ } > A\ddot{v}j\ddot{g}i\ddot{b}q\ddot{v}g \text{ } > A\ddot{v}qib \text{ } >$

$K\ddot{v}j\ddot{w}mq\ddot{v}g \text{ } \checkmark$

(L) $\ddot{w}m\ddot{t}j \text{ } Kb \text{ } > A\ddot{v}j\ddot{g}i\ddot{b}q\ddot{v}g \text{ } > A\ddot{v}qib \text{ } > A\ddot{w} \cdot \ddot{t}Rb \text{ } > K\ddot{v}j\ddot{w}mq\ddot{v}g$

(M) $A\ddot{v}j\ddot{g}i\ddot{b}q\ddot{v}g \text{ } > A\ddot{v}qib \text{ } > A\ddot{w} \cdot \ddot{t}Rb \text{ } > \ddot{w}m\ddot{t}j \text{ } Kb \text{ } > A\ddot{w} \cdot \ddot{t}Rb$

(N) $A\ddot{v}qib \text{ } > A\ddot{v}j\ddot{g}i\ddot{b}q\ddot{v}g \text{ } > \ddot{w}m\ddot{t}j \text{ } Kb \text{ } > K\ddot{v}j\ddot{w}mq\ddot{v}g \text{ } > A\ddot{w} \cdot \ddot{t}Rb$

12 | $f\text{-}Z\ddot{t}K \text{ } A\ddot{w} \cdot \ddot{t}Rb \text{ } \ddot{c}i \text{ } \ddot{t}Kvb \text{ } \ddot{t}g\ddot{t}j \text{ } \ddot{U} \text{ } m\ddot{e}\ddot{t}P\ddot{t}q \text{ } \ddot{t}e\ddot{w}k \text{ } _v\ddot{t}K?$

(K) $\ddot{w}m\ddot{t}j \text{ } Kb \text{ } \checkmark$

(L) $A\ddot{v}j\ddot{g}i\ddot{b}q\ddot{v}g$

(M) $\ddot{t}m\ddot{w}Wq\ddot{v}g$

(N) $g\ddot{v}M\ddot{t}b\ddot{w}mq\ddot{v}g$

13 | $bx\ddot{t}Pi \text{ } \ddot{t}Kvb \text{ } \ddot{a}vZiU \text{ } g\ddot{w}U\ddot{t}Z \text{ } (f\text{-}Z\ddot{t}K) \text{ } m\ddot{e}\ddot{t}P\ddot{t}q \text{ } \ddot{t}e\ddot{w}k \text{ } \ddot{c}i\ddot{g}v\ddot{t}Y \text{ } _v\ddot{t}K?$

(K) $K\ddot{v}j\ddot{w}mq\ddot{v}g \text{ } (Ca)$

(L) $A\ddot{v}j\ddot{g}i\ddot{b}q\ddot{v}g \text{ } (Al) \text{ } \checkmark$

(M) $\ddot{t}m\ddot{w}Wq\ddot{v}g \text{ } (Na)$

(N) $g\ddot{v}M\ddot{t}b\ddot{w}mq\ddot{v}g \text{ } (Mg)$

14 | $\ddot{e}w\ddot{t}j \text{ } i \text{ } m\ddot{s}\ddot{t}KZ \text{ } \ddot{t}KvbiU?$

(K) $CaCO_3$

(L) $SiO_2 \text{ } \checkmark$

(M) $NaCl$

(N) Al_2O_3

15 | $cK\ddot{t}Z\ddot{t}Z \text{ } g^3 \text{ } \ddot{t}g\ddot{t}j \text{ } \ddot{w}n\ddot{t}m\ddot{t}e \text{ } c\ddot{v}Iqv \text{ } hvq\ddot{N}$

(K) $g\ddot{v}M\ddot{t}b\ddot{w}mq\ddot{v}g \text{ } (Mg)$

(L) $\ddot{w}RsK \text{ } (Zn)$

(M) $\ddot{w}mj \text{ } fvi \text{ } (As)$

(N) $\ddot{w}Y \text{ } (Au) \text{ } \checkmark$

16 | $\ddot{t}KvbiU \text{ } cK\ddot{t}Z\ddot{t}Z \text{ } \ddot{t}e\ddot{t}j \text{ } ?$

(K) Cu

(L) Zn

(M) Pb

(N) Au ✓

17 | $\ddot{t}KvbiU \text{ } \ddot{w}b\ddot{t}q \text{ } \ddot{a}vZ?$

(K) Zn

(L) Au ✓

(M) Sn

(N) Pb

18 | $cK\ddot{t}Z\ddot{t}Z \text{ } c\ddot{v}B \text{ } \ddot{t}g\ddot{t}j \text{ } i \text{ } m\ddot{s}L\ddot{v} \text{ } KZiU?$

(K) 92

(L) 98 ✓

(M) 105

(N) 110

19 | $cK\ddot{t}Z\ddot{t}Z \text{ } c\ddot{v}Iqv \text{ } hvq \text{ } Ggb \text{ } \ddot{t}g\ddot{t}j \text{ } Kq\ddot{U} \text{ } Ges \text{ } Gi \text{ } KZf\ddot{v}M \text{ } \ddot{a}vZ?$

(K) 98, $\frac{3}{4} \checkmark$

(L) 98, $\frac{4}{3}$

(M) 97, $\frac{3}{4}$

(N) 99, $\frac{3}{4}$

20 | $\ddot{t}KvbiU \text{ } \ddot{a}vZi \text{ } \ddot{e}w\ddot{k}o\ddot{v}?$

(K) $\ddot{t}b\ddot{a} \text{ } NbZ$

(L) $f\ddot{z}i$

(M) $Zvc \text{ } Ac\ddot{t}ie\ddot{v}n\ddot{x}$

(N) $\ddot{w}b\ddot{t}o \text{ } \ddot{a}vK\ddot{t}Z \text{ } \checkmark$

21 | $\ddot{t}KvbiU \text{ } i \text{ } Mj\ddot{b}vsK \text{ } \ddot{t}e\ddot{w}k?$

(K) $dmd\ddot{v}m \text{ } (P)$

(L) $A\ddot{w} \cdot \ddot{t}Rb \text{ } (O_2)$

(M) $\ddot{t}m\ddot{w}Wq\ddot{v}g \text{ } (Na) \text{ } \checkmark$

(N) $n\ddot{v}B\ddot{t}W\ddot{t}Rb \text{ } (H_2)$

22 | $\ddot{t}Kvb \text{ } \ddot{a}avZ \text{ } fZ\ddot{t}K \text{ } g^3 \text{ } Ae\ddot{v}q \text{ } c\ddot{v}Iqv \text{ } hvq?$

(K) $m\ddot{v}j\ddot{d}vi \text{ } \checkmark$

(L) $b\ddot{v}B\ddot{t}U\ddot{t}Rb$

(M) $A\ddot{w} \cdot \ddot{t}Rb$

(N) $dmd\ddot{v}m$

23 | $fM\ddot{t}fi \text{ } D\ddot{P}Z\ddot{v}c \text{ } M\ddot{t}jZ \text{ } \ddot{w}k\ddot{v}\ddot{t}K \text{ } \ddot{e}j\ddot{v} \text{ } nq\ddot{N}$

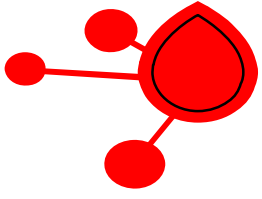
(K) $c\ddot{v}j\ddot{t}j \text{ } K \text{ } \ddot{w}k\ddot{v}$

(L) $A\ddot{v}\ddot{t}Mq \text{ } \ddot{w}k\ddot{v}$

(M) $g\ddot{v}Mg\ddot{v} \text{ } \checkmark$

(N) $L\ddot{w}bR$

24 | $bx\ddot{t}Pi \text{ } \ddot{t}KvbiU \text{ } \ddot{t}g\ddot{t}j \text{ } K \text{ } L\ddot{w}bR \text{ } bq?$



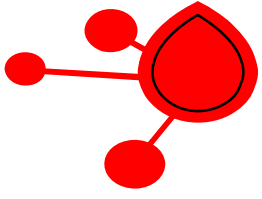
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- (K) Y (L) nxiv
(M) MÜK (N) Aqib✓
- 25| Zij LibR tKvbiU?
(K) e · vBU
(L) mvj dvi
(M) gvkix ev cri`✓
(N) g`vMtbUvBU
- 26| K · evRvi mg` DcKtj tKvb LibR c`v_u cvlqv hvq?
(K) tKljb
(L) e · vBU
(M) i:UvBj✓
(N) tngvUvBU
- 27| tZj tdbv fvmgvb c×iZtZ bxPi tKvb AvKiiKi Rb` AiaK cthvRb`?
(K) ZnS✓ (L) Fe₂O₃
(M) Al₂O₃ · 2H₂O (N) CaCO₃
- 28| th mKj LibR ntZ jvfRbKfvtē avZ vkb Kiv hvq ZiK Kx etj?
(K) k jv (L) AvKiiK✓
(M) g`vMgv (N) LibRgj
- 29| vbtPi tKvbiU iēi× AvKiiK?
(K) e · vBU (L) g`vMtbUvBU✓
(M) vjtgvbUvBU (N) tgvbRvBU
- 30| tKvb avZi AvKiiK me`vB Av`Zv`vK?
(K) iRiKb (L) A`vjigibqvg✓
(M) g`vMtbUvBU (N) UvBUvibqvg
- 31| AvKiiK ntZ Kq avtc avZ vkb Kiv nq?
(K) 3 (L) 4
(M) 5✓ (N) 7
- 32| tPāK ag iēiKó AvKiiK tKvbiU?
(K) M`vj jbv (L) i:UvBj✓
(M) K`vjvgvBb (N) e · vBU
- 33| Na₃AlO₃Gi ivmvqibK bvg Kx?
(K) i:UvBj (L) tmmWqvg A`vjigtbU✓
(M) e · vBU (N) A`vjigbv
- 34| i:UvBj Gi msKZ tKvbiU?
(K) FeO · Cr₂O₃ (L) FeWO₄
(M) TiO₂✓ (N) Al₂O₃ · 2H₂O
- 35| i:UvBj tKvb avZi AvKiiK?
(K) iRsk
(L) Aqib
(M) UvBUvibqvg✓
(N) A`vjigibqvg

- 36| avZ vkb tbi mgq AvKiiK tKvbiU tZ i/cvši Kiv nq?
(K) mvjdvBtW
(L) A · vBtW✓
(M) tKvibBtW
(N) bvtUvBtW
- 37| tKvbiU Zvc RviY c×iZ?
(K) CaCO₃ $\xrightarrow{\Delta}$ CaO + CO₃
(L) Al₂O₃ · 2HO $\xrightarrow{\Delta}$ Al₂O₃ + 2H₃O
(M) 2Fe₂O₃ · 3H₂O $\xrightarrow{\Delta}$ 2Fe₂O₃ + 3H₃O
(N) 2ZnS + 3O₂ $\xrightarrow{\Delta}$ 2ZnO + 2SO₂✓
- 38| t`ēš c×iZtZ ev iēMjb c×iZtZ (KvY iēRviY c×iZtZ) vkb Kiv nq tKvb avZtK?
(K) Zn✓ (L) Al
(M) Na (N) Ca
- 39| Na, Ca, Al, Zn avZ, t jvi mμqZvi μg tKvbiU?
(K) Ca > Na > Al > Zn✓
(L) Ca > Al > Na > Zn
(M) Na > Ca > Al > Zn
(N) Na > Al > Ca > Pt
- 40| mμqZv mvi tR me Dc ti Ae`vb tKvb t gštj i?
(K) K (L) Li✓
(M) Na (N) Mg
- 41| mμqZv mvi tR me vi vbtP Ae`vb tKvb t gštj i?
(K) H (L) Au✓
(M) Pt (N) Fe
- 42| tKvbiU tK Zior iētkl tYi mrvh` vkb Ki tZ nq?
(K) K✓ (L) Cu
(M) Fe (N) Zn
- 43| bxPi tKvb avZ Dnvi AvKiiK t` tK Zior iētklY c×iZtZ AvniY Ki tZ nq?
(K) Na✓ (L) Fe
(M) Zn (N) Pb
- 44| bxPi tKvbiU iēlv³, nZ i` tq`uk Kiv iēc3/4bK?
(K) PbO✓ (L) ZnO
(M) Fe₂O₃ (N) Al₂O₃
- 45| tKvb avZi vkb tbi t` t` iēRviY NtU?
(K) Cu✓ (L) Al
(M) Pb (N) Ca
- 46| 40-42% NaCl I 58-60% CaCl₂ Gi i gk tYi mjbv4 tKvbiU?



- ডাউনলোড: www.bdcomplex.blogspot.com



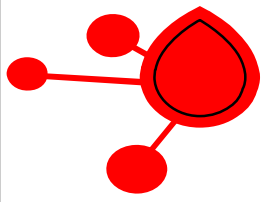
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- 66| $Wivjwgb \uparrow KvbU?$
 (K) $\uparrow jvnv$ 99% I Kvb 01%
 (L) $Kcvi$ 65% I RsK 35%
 (M) $\uparrow jvnv$ 74%, $\uparrow wvgvg$ 18% I $ib\uparrow Kj$ 8%
 (N) $A^v jgibqvg$ 95% $Kcvi$ 04% $Ab^v b$ avZ 01%✓
- 67| $Wv^3wi \text{ ev } A^v \uparrow vcPv\uparrow i i \text{ h}^s c w Z \text{ } ^Z i i \uparrow Z \uparrow KvbU \text{ e}^{\text{envi}} Kiv \text{ nq?}$
 (K) $w \div j$
 (L) $\uparrow \div Bb\uparrow jm \text{ } w \div j$ ✓
 (M) $Wivjwgb$
 (N) evm
- 68| $22 K^v \uparrow iU \text{ } ^Y Kx \text{ } c w i g Y \text{ } ^Y \text{ } _v \uparrow K?$
 (K) 100% (L) 87.5%
 (M) 91.67%✓ (N) 22%
- 69| $\uparrow KvbU \text{ msKi } avZ?$
 (K) $\uparrow jvnv$ (L) $w c Z j$ ✓
 (M) $Zvgv$ (N) v
- 70| $mf^{\text{Zvi}} B \uparrow Zn v \uparrow m \uparrow Kvb \text{ mgq} \uparrow U \uparrow K \text{ } Z v \uparrow h M \text{ ejv } nq?$
 (K) $Lx \div ce$ 3000-1000
 (L) $Lx \div ce$ 5000-3000✓
 (M) $Lx \div ce$ 1000-5000
 (N) $Lx \div ce$ 15000-10,000
- 71| $gvbl \text{ } c_g \uparrow Kvb \text{ avZ } w b \uparrow w kb \text{ } K \uparrow i i Q j?$
 (K) Na (L) Cu ✓
 (M) Fe (N) Zn
- 72| $w L \div ce$ 5000 $\uparrow \uparrow K$ 3000 $mvj \text{ } ch^s \text{ } mgq \uparrow K \text{ } Kx \text{ ejv } nZ?$
 (K) $^Y hM$ (L) $\uparrow i^s c^{\text{hM}}$
 (M) $tev \bar{A} hM$ (N) $Zv \uparrow hM$ ✓
- 73| $Kc v \uparrow i i \text{ } mv \uparrow \text{ } _b \uparrow Pi \uparrow Kvb \text{ avZ } w gkv \uparrow j \text{ } Kc v \uparrow i i \text{ } K w Vb^{\text{ex}} \text{ } c v q?$
 (K) Fe (L) Zn
 (M) Sn ✓ (N) Ca
- 74| $\uparrow Kvb \text{ } w gkY \uparrow U \text{ } \uparrow \div Bb \uparrow jm \text{ } w \div j i \text{ } Dcv^{\text{vb}}?$
 (K) Fe, Ni, Cr, C✓ (L) Fe, Zn, Ca, C
 (M) Fe, Cr, Na, Sn (N) Fe, Na, Ca, Zn
- 75| $\uparrow KvbU \text{ } w \div j i \text{ } K w Vb^{\text{ex}} \text{ } K \uparrow i?$
 (K) C (L) Si
 (M) Ni ✓ (N) Cu
- 76| $\uparrow KvbU \text{ } w \div j i \text{ } gviPv \text{ } c w Z \uparrow i va \text{ } K \uparrow i?$
 (K) Cu (L) Cr✓
 (M) Ca (N) C
- 77| $w e^{\text{ZK}} c \times \uparrow Z \uparrow Z \text{ } GK \uparrow U \text{ } avZi \text{ } Dci \text{ } Ab^{\text{avZi}} \text{ } c \uparrow j c \text{ } ^{\text{Iqv}} K \text{ ejv } nq-$
 (K) $M^v j \text{ } f v b \uparrow B \uparrow R s$

- (L) $B \uparrow j \uparrow \div v \uparrow c w U s$ ✓
 (M) $f j \text{ } Kvb \uparrow B \uparrow R s$
 (N) $c w j g v i v B \uparrow R k b$
- 78| $gviPvi \text{ } ms \uparrow KZ \uparrow KvbU?$
 (K) $CuCO_3 \cdot Ca(OH)_2$
 (L) $Fe_2O_3 \cdot nH_2O$ ✓
 (M) Fe_3O_4
 (N) $Fe_3O_4 \cdot nH_2O$
- 79| $Zv \uparrow g j \uparrow KvbU?$
 (K) $CuCO_3$
 (L) Cu_2CO_3
 (M) $CuCO_3 \cdot Cu(OH)_2$ ✓
 (N) $Cu_2CO_3 \cdot Cu(OH)_2$
- 80| $bZb \text{ } Zvgvi \text{ } w R i b m c \uparrow \text{ } KQ^{\text{b}} \text{ } \uparrow i \uparrow L \text{ } w \uparrow j \uparrow \uparrow Kvb \text{ } eY \text{ } aviY \text{ } K \uparrow i?$
 (K) meR (L) $L \uparrow qvi$
 (M) $ev^{\text{v}} w g$ ✓ (N) $\uparrow M v j w c$
- 81| $Zv \uparrow g j \uparrow KvbU \uparrow Z^{\text{ex}} \text{ } fZ \text{ } nq?$
 (K) cwb (L) $\uparrow Z j$
 (M) $^{\text{Re}} G w W$ ✓ (N) $A^v j \uparrow K v n j$
- 82| $\uparrow KvbU \text{ } \varnothing v i v \text{ } Zv \uparrow g j \text{ } ^i Kiv \text{ } hvq?$
 (K) $Av \uparrow c j$ (L) $\uparrow c \uparrow c$
 (M) $K j v$ (N) $Kvgiv^{\text{v}} w$ ✓
- 83| $L i b \uparrow \uparrow K \text{ } m i v m i \text{ } m v j d v i \text{ } (S) \text{ } A v n i Y \text{ } Kiv \text{ } nq \uparrow Kvb \text{ } c \times \uparrow Z \uparrow Z?$
 (K) $^{\text{uk}} c \times \uparrow Z \uparrow Z$
 (L) $d v k \text{ } c \times \uparrow Z \uparrow Z$ ✓
 (M) $Z i o r \text{ } w e \uparrow k i Y \text{ } c \times \uparrow Z \uparrow Z$
 (N) $\uparrow n e v i \text{ } c \times \uparrow Z \uparrow Z$
- 84| $m v j d v i i \text{ } M j b v s K \text{ } KZ?$
 (K) $180^{\circ}C$ (L) $70^{\circ}C$
 (M) $119^{\circ}C$ ✓ (N) $250^{\circ}C$
- 85| $J l a \uparrow K v a \uparrow w b \text{ } U^{\text{ve}} \uparrow j \uparrow U i \text{ } \uparrow g v o \uparrow K \text{ } ev \text{ } w \div \uparrow c \uparrow KvbU \text{ } e^{\text{eü}} Z \text{ } nq?$
 (K) $\uparrow j W a v Z (Pb)$
 (L) $\uparrow m w W q v g \text{ } avZ (Na)$
 (M) $A^v j g i b q v g \text{ } avZ (Al)$ ✓
 (N) $^v (Zn)$
- 86| $A^v j g i b q v g \text{ } avZ \text{ } w b \uparrow w k \uparrow b i \text{ } c \uparrow q v R b x q \text{ } R v j w b i \text{ } k Z K i v \text{ } K Z \text{ } f v M \text{ } L i P \text{ } K \uparrow i \text{ } m g c w i g Y \text{ } A l \text{ } avZ \text{ } c b c w \uparrow \mu q v R v Z \text{ } Kiv \text{ } nq?$
 (K) 5%✓ (L) 10%
 (M) 20% (N) 50%
- 87| $h^3 \text{ } i v \uparrow \uparrow e^{\text{eü}} Z \text{ } \uparrow g v U \text{ } Kc v \uparrow i i \text{ } k Z K i v \text{ } K Z \text{ } f v M \text{ } c b c w \uparrow \mu q v R v Z K Z?$
 (K) 5% (L) 21%✓



- (M) H_2SO_3 (N) H_2S
99| gwU i wefb is Gi KviY gwU tZÑ
(i) cwbi AbcñvZ
(ii) yvi Gi DcñvZ
(iii) wefb Llb tRi DcñvZ
wb tPi tKvbiU mñVK?
(K) i (L) iii ✓
(M) i l ii (N) i, ii l iii
100| avZi ãekóÑ
(i) NvZ mnbxqZv
(ii) we`r l Zvc mcñevñZv
(iii) D`P ùUvbsK l bñ MjbvbsK
wb tPi tKvbiU mñVK?
(K) i l ii ✓ (L) ii l iii
(M) i l iii (N) i, ii l iii
101| Pbvcv ñ
(i) eió cwbtZ atq mñMt i hvq
(ii) gZ mvg`K cevñ tZ l cv lqv hvq
(iii) MñJZ Ae`vq cv lqv hvq
wb tPi tKvbiU mñVK?
(K) i l ii ✓ (L) ii l iii
(M) i l iii (N) i, ii l iii
102| AvKñiKÑ
(i) Gi i vmvqñbK Dcv`vb wñ`ó
(ii) ntZ jvfRbKfvte avZ wbñkb Kiv hvq
(iii) Gi gta`th Ac`e`_vtK ZvtK LlbRgj eñj
wb tPi tKvbiU mñVK?
(K) i l ii (L) i l iii
(M) ii l iii (N) i, ii l iii ✓
103| e·vBU AvKñiK tñRvj wñtñte _vtKÑ
(i) Avqi tbi A·vBW
(ii) ewñj
(iii) UvB tUñbqv tgi A·vBW
wb tPi tKvbiU mñVK?
(K) i l ii (L) i l iii
(M) ii l iii (N) i, ii l iii ✓
104| AvKñiK tK avZi A·vB tWÑ
(i) i/cvñi Kivi gva`tg ntñv tZj tdbv fvmgñb c
(ii) f`ñKiY ðvñv i/cvñi Kiv hvq
(iii) ZvcRviY avñv i/cvñi KiY mñe
wb tPi tKvbiU mñVK?



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(iii) 98% H_2SO_4 G SO_3 tkvIY Kviq ^Zi Kiv nq
wbPi tkvbiU mivK?

- (K) i l ii (L) ii l iii
(M) i l iii (N) i, ii l iii✓

117| H_2SO_4 ivmviqibK ieiμqvi Ask tbqñ

- (i) RviK inmte
(ii) GimW inmte
(iii) ibi^K inmte

wbPi tkvbiU mivK?

- (K) i l ii (L) ii l iii
(M) i l iii (N) i, ii l iii✓

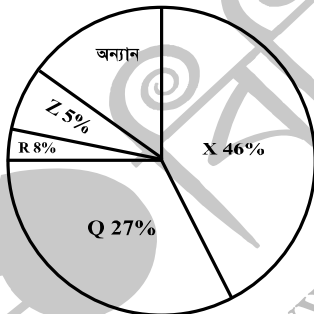
118| ^uk c^Z Z SO_2 ^K SO_3 Drcv ^bi mgq-

- (i) cfveK inmte e^eüZ nq Pt/ V_2O_5
(ii) AZ^vbKj Zvcgviv 450°C
(iii) DfgLx ieiμqv NtU

wbPi tkvbiU mivK?

- (K) i l ii (L) ii l iii
(M) i l iii (N) i, ii l iii✓

wbPi iPiU jy Ktiv Ges 119-121 bs c^ki Dēi ^vIt



চিত্র: ইস্পাতের প্রধান প্রধান উপাদান

119| X tg^jU bvg Kx?

- (K) bvB^UvRb (L) Av ^Rb✓
(M) Avqib (N) A^vjigibqv

120| X l Q igijZ ntq tkvbiU Drcb Kti?

- (K) Pbvcv_i (L) imij Kv✓
(M) tngvUvBU (N) e ^vBU

121| tkvbiU iØ-cigvYK?

- (K) X ✓ (L) Q
(M) R (N) Z

wbPi QKiU jy Ktiv Ges 122-123bs ck, ^jvi Dēi ^vIt

tg^j	cKiZ^Z/f-Z^K	mμqZv
Au	cvq iei j	AZ^š Kg
X	46%	Zxe RviK agx

K	Z	AZ^š mμq
---	---	----------

122| D^xc^Ki Z wb^kK ciigvY tkvbiU?

- (K) 3%✓ (L) 8%
(M) 5% (N) 2%

123| D^xc^Ki X Ñ

- (i) Au Gi b^vq avZ
(ii) Qvov cvYxi kmBKvh Ampe
(iii) cKiZ^Z g^3 Ae^vq cvlqv hvq

wbPi tkvbiU mivK?

- (K) i l ii (L) i l iii
(M) ii l iii✓ (N) i, ii l iii

wbPi Ab^Q^U c^ov Ges 124 l 125 bs c^ki Dēi ^vIt

fMf^k jvi D^PZ^c MijZ Ae^vK kxZj Ki^j GKU Kivb ikjv
cvlqv hvq

124| D^3 MijZ Ae^vUv bvg Kx?

- (K) g^vMgv✓ (L) LvbR c^v_
(M) ikjv (N) tetj cv_i

125| D^xc^Ki Kivb c^vUñ

- (i) g^vMgv ntZ cvlqv hvq
(ii) AvMq ikjv
(iii) cvj^jK ikjv

wbPi tkvbiU mivK?

- (K) i l ii✓ (L) i l iii (M) ii l iii (N) i, ii l iii

wbPi Ab^Q^U c^ov Ges 126 l 127 bs c^ki Dēi ^vIt

OXO Ac^e cvq mKj AvKvi^Ki mv^B Kg^teik ^v^K, cKiZRvZ
AvKvi^K e ^vBU me^v ^vDcv^v ^v^K, hv CuSO₄ tK bxjvf Kti

126| ^vD wbPi tkvbiU?

- (K) cvib✓ (L) ewj
(M) cv_i (N) Kv^vgvU

127| D^xc^Ki OXOñ

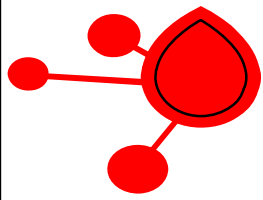
- (i) AvKvi^Ki NbxKi^Y KQ OXO^i Kiv nq
(ii) nj ewj, Kv^vgvU, cv_i
(iii) ntjv LvbRgj

wbPi tkvbiU mivK?

- (K) i l ii (L) i l iii
(M) ii l iii (N) i, ii l iii✓

wbPi Ab^Q^U c^ov Ges 128-129 bs c^ki Dēi ^vIt

LvbR	tg^j
izUvBj	X
Y	^vwiqv
Z	Al



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128| $\text{Pb}^{2+} + \text{K}^+ \text{U} \text{Z}?$

(K) $e^- \cdot \text{vBU}$ ✓

(L) $\text{K}^+ \text{U} \text{jb}$

(M) $\text{g}^+ \text{vM}^+ \text{bUvBU}$

(N) $\text{M}^+ \text{v}^+ \text{jbv}$

129| $\text{D}^+ \text{xc}^+ \text{Ki} \text{Y} \text{N}$

(i) $\text{e}^+ \text{kIY} \text{K}^+ \text{i} \text{A}^+ \text{K} \text{c}^+ \text{igv}^+ \text{Y} \text{X} \text{cvIqv} \text{hvq}$

(ii) $\text{K}^+ \text{e}^+ \text{Rvi} \text{mg}^+ \text{DcK}^+ \text{ji} \text{ewj} \text{n}^+ \text{Z} \text{cvIqv} \text{hvq}$

(iii) $\text{n}^+ \text{Z} \text{t}^+ \text{viiqv} \text{Ges} \text{i}^+ \text{UvBj} \text{n}^+ \text{Z} \text{UvBUv} \text{bqv} \text{cvIqv}$

$\text{Pb}^{2+} \text{K}^+ \text{U} \text{m}^+ \text{VK}?$

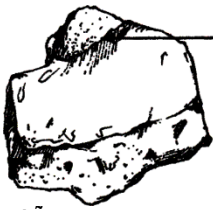
(K) i l ii

(L) i l iii

(M) ii l iii✓

(N) i, ii l iii

$\text{Pb}^{2+} \text{Q}^+ \text{U} \text{j}^+ \text{K}^+ \text{iv} \text{Ges} \text{130-131} \text{bs} \text{c}^+ \text{ki} \text{D}^+ \text{Ei} \text{vlt}$



130| $\text{Dc}^+ \text{iv}^3 \text{avZi} \text{U} \text{N}$

(i) $\text{A}^+ \text{vBW} \text{e}^+ \text{lv}^3$

(ii) $\text{A}^+ \text{vBW} \text{nj}^+ \text{e}^+ \text{Yi}$

(iii) $\text{AvniY} \text{KveY} \text{e}^+ \text{RviY} \text{c}^+ \text{xiz}^+ \text{Z} \text{m}^+ \text{oe}$

$\text{Pb}^{2+} \text{K}^+ \text{U} \text{m}^+ \text{VK}?$

(K) i l ii

(L) ii l iii

(M) i l iii

(N) i, ii l iii✓

131| $\text{D}^3 \text{avZi} \text{AvK}^+ \text{iK} \text{tK}^+ \text{U}?$

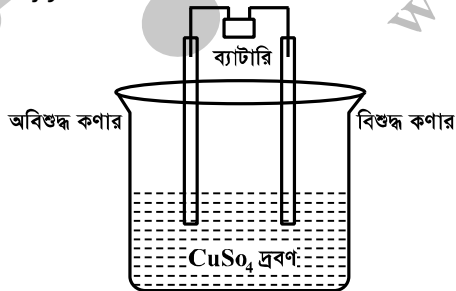
(K) $\text{K}^+ \text{vjvgvBb}$

(L) $\text{i}^+ \text{UvBj}$

(M) $\text{M}^+ \text{v}^+ \text{jbv}$ ✓

(N) $e^- \cdot \text{vBU}$

$\text{Pb}^{2+} \text{P}^+ \text{U} \text{j}^+ \text{K}^+ \text{iv} \text{Ges} \text{132-134} \text{bs} \text{c}^+ \text{ki} \text{D}^+ \text{Ei} \text{vlt}$



132| $\text{D}^+ \text{xc}^+ \text{Ki} \text{c}^+ \text{mqv} \text{kZKiv} \text{KZ} \text{f}^+ \text{vM} \text{e}^+ \text{x} \text{Cu} \text{cvIqv} \text{hvq}?$

(K) 95%

(L) 98%

(M) 99%

(N) 99.9%✓

133| $\text{msNi} \text{UZ} \text{e}^+ \text{mqvN}$

(i) $\text{CuSO}_4 \rightarrow \text{Cu}^{2+} + \text{SO}_4^{2-}$

(ii) $\text{Cu}^{2+} + 2e^- \rightarrow \text{Cu}$

(iii) $\text{Cu} - 2e^- \rightarrow \text{Cu}^{2+}$

$\text{Pb}^{2+} \text{K}^+ \text{U} \text{m}^+ \text{VK}?$

(K) i l ii

(L) i l iii

(M) ii l iii

(N) i, ii l iii✓

134| $\text{Dc}^+ \text{ii} \text{c}^+ \text{mqv} \text{Ui} \text{bvg} \text{K}^+?$

(K) $\text{e}^+ \text{Mjb}$

(L) $\text{Z}^+ \text{or} \text{e}^+ \text{kIY}$ ✓

(M) $\text{Z}^+ \text{vRviY}$

(N) $\text{t}^+ \text{v}^+ \text{es}$

$\text{Pb}^{2+} \text{Ab}^+ \text{Q}^+ \text{U} \text{c}^+ \text{ov} \text{I} \text{135-138} \text{bs} \text{c}^+ \text{ki} \text{D}^+ \text{Ei} \text{vlt}$

$\text{avZ} \text{A}^+ \text{c}^+ \text{y}^+ \text{avZ} \text{msKi} \text{A}^+ \text{bK} \text{teik} \text{e}^+ \text{envi} \text{Dc}^+ \text{hvMx} \text{t}^+ \text{jvni} \text{mv}^+ \text{X}, \text{28Q}, \text{24R} \text{avZ} \text{igv}^+ \text{ktq} \text{t}^+ \text{jvni} \text{avZ} \text{msKi} \text{Z}^+ \text{i} \text{Kiv} \text{nq} \text{I}$

135| $\text{D}^+ \text{xc}^+ \text{K} \text{Av}^+ \text{jA}^+ \text{vZ} \text{msKi} \text{U} \text{bvg} \text{tK}^+ \text{U}?$

(K) evm

(L) $\text{v}^+ \text{j}$

(M) $\text{t}^+ \text{v}^+ \text{Bb}^+ \text{jm}^+ \text{v}^+ \text{j}$ ✓

(N) $\text{tev}^+ \text{A}$

136| $\text{D}^+ \text{xc}^+ \text{K} \text{avZ} \text{msKi} \text{U} \text{K}^+ \text{v}^+ \text{b}^+ \text{e}^+ \text{x} \text{K}^+ \text{tK}^+ \text{U}?$

(K) Fe

(L) $\text{Ni}(\text{28Q})$ ✓

(M) $\text{Cr}(\text{24R})$

(N) $\text{C}(\text{6X})$

137| $\text{D}^+ \text{xc}^+ \text{Ki} \text{avZ} \text{msKi} \text{U}^+ \text{K} \text{gviPv} \text{n}^+ \text{Z} \text{i}^+ \text{y}^+ \text{K}^+ \text{tK}^+ \text{U}?$

(K) Fe

(L) $\text{Cr}(\text{24R})$ ✓

(M) $\text{C}(\text{6X})$

(N) $\text{Ni}(\text{28Q})$

138| $\text{D}^+ \text{xc}^+ \text{Ki} \text{avZmsKi} \text{U} \text{cavb} \text{AvK}^+ \text{iK} \text{tK}^+ \text{U} \text{n}^+ \text{Z} \text{cv}^+ \text{i}?$

(K) $\text{K}^+ \text{vjvgvBb}$

(L) $\text{t}^+ \text{ngvUvBU}$ ✓

(M) $e^- \cdot \text{vBU}$

(N) mbvevi

$\text{Pb}^{2+} \text{QK}^+ \text{U} \text{j}^+ \text{K}^+ \text{iv} \text{Ges} \text{139-140} \text{bs} \text{ck} \text{t}^+ \text{jvi} \text{D}^+ \text{Ei} \text{vlt}$

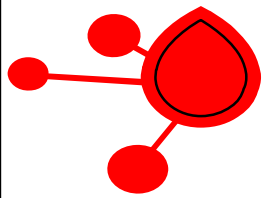
$\text{L}^+ \text{bR}$	$\text{e}^+ \text{envi}$	$\text{t}^+ \text{f}^+ \text{Z} \text{Ae}^- \text{v}$
X	$\text{H}_2\text{SO}_4 \text{Z}^+ \text{ix}^+ \text{Z}$	$\text{K}^+ \text{vB}$
Y	$\text{ivbvi} \text{K}^+ \text{vR}$	$\text{M}^+ \text{vm}$
$\text{g}^+ \text{vM}^+ \text{bUvBU}$	Z	$\text{K}^+ \text{vB}$

139| $\text{Pb}^{2+} \text{K}^+ \text{U} \text{L}^+ \text{bR} \text{O}^+ \text{X} \text{t}^+ \text{K} \text{cvIqv} \text{hvq}?$

(K) mvjdvi ✓

(L) Avqib

(M) cvib



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(N) $n\text{B}\ddot{\text{W}}\ddot{\text{R}}\text{b}$

140| $\text{D}\ddot{\text{x}}\text{c}\ddot{\text{K}}\text{i} \text{ g}\ddot{\text{v}}\text{M}\ddot{\text{b}}\text{UvBU}\ddot{\text{N}}$

(i) $\text{K}\ddot{\text{v}}\text{b} \text{ L}\ddot{\text{b}}\text{R}$

(ii) $\text{Z}\ddot{\text{v}}\text{cR}\ddot{\text{v}}\text{i} \text{ Z} \text{ nq}$

(iii) $\text{G}\ddot{\text{i}} \text{ m}\ddot{\text{s}}\ddot{\text{t}}\text{KZ} \text{ Fe}_3\text{O}_4$

$\text{Wb}\ddot{\text{t}}\text{Pi} \text{ t}\ddot{\text{K}}\text{v}\text{b}\text{U} \text{ m}\ddot{\text{v}}\text{K}?$

(K) i l ii

(L) i l iii ✓

(M) ii l iii

(N) i, ii l iii

$\text{Wb}\ddot{\text{t}}\text{Pi} \text{ Ab}\ddot{\text{t}}\text{Q}\ddot{\text{v}}\text{U} \text{ c}\ddot{\text{t}}\text{ov} \text{ Ges } 141\text{-}142 \text{ bs } \text{c}\ddot{\text{t}}\text{ki} \text{ D}\ddot{\text{E}}\text{i} \text{ `v} \text{ l t}$

$\text{t}\ddot{\text{g}}\ddot{\text{s}}\text{j}$	$\text{m}\ddot{\text{v}}\text{qZ}\ddot{\text{v}}\text{i} \text{ }\mu\text{g}$
Mg	↓
Q	nvm
Mn	↓
Pb	↓
Z	

141| $\text{D}\ddot{\text{x}}\text{c}\ddot{\text{K}}\text{i} \text{ Z} \text{ t}\ddot{\text{g}}\ddot{\text{s}}\text{j} \text{ U}\ddot{\text{i}} \text{ kZKiv} \text{ KZ} \text{ f}\ddot{\text{v}}\text{M} \text{ cbc}\ddot{\text{v}}\text{q}\text{vR}\ddot{\text{v}}\text{ZKZ}$
(h³ ivó)?

(K) 21%✓

(L) 12%

(M) 60%

(N) 5%

142| $\text{D}\ddot{\text{x}}\text{c}\ddot{\text{K}}\text{i} \text{ Q} \text{ t}\ddot{\text{g}}\ddot{\text{s}}\text{j} \text{ U}\ddot{\text{N}}$

(i) $\text{W}\ddot{\text{v}}\text{fb} \text{ t}\ddot{\text{t}}\text{k} \text{ cbc}\ddot{\text{v}}\text{q}\text{vR}\ddot{\text{v}}\text{Z} \text{ Kiv} \text{ nq}$

(ii) $\text{Wb}\ddot{\text{t}}\text{v}\text{k}\ddot{\text{t}}\text{bi} \text{ e}\ddot{\text{v}}\text{üZ} \text{ R}\ddot{\text{v}}\text{j}\text{wbi} \text{ 5\% } \text{v}\ddot{\text{v}}\text{i} \text{ GKB} \text{ c}\ddot{\text{v}}\text{igvYAl}$
 $\text{cbtDrcv}\ddot{\text{b}} \text{ m}\ddot{\text{a}}\text{e}$

(iii) $\text{Jla} \text{ t}\ddot{\text{K}}\text{v}\ddot{\text{v}}\text{v}\text{vbi} \text{ U}\ddot{\text{v}}\text{e}\ddot{\text{t}}\text{j}\ddot{\text{t}}\text{Ui} \text{ W}\ddot{\text{v}}\text{c} \text{ ^Zix}\ddot{\text{Z}}$

$\text{Wb}\ddot{\text{t}}\text{Pi} \text{ t}\ddot{\text{K}}\text{v}\text{b}\text{U} \text{ m}\ddot{\text{v}}\text{K}?$

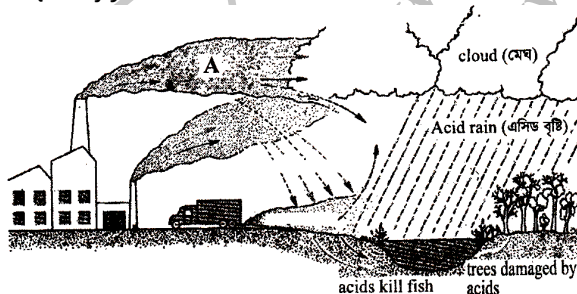
(K) i l ii

(L) i l iii

(M) ii l iii

(N) i, ii l iii✓

➤ $\text{Wb}\ddot{\text{t}}\text{Pi} \text{ Q}\ddot{\text{v}}\text{U} \text{ j}\ddot{\text{y}} \text{ K}\ddot{\text{t}}\text{iv} \text{ Ges } 143\text{-}145 \text{ bs } \text{c}\ddot{\text{t}}\text{ki} \text{ D}\ddot{\text{E}}\text{i} \text{ `v} \text{ l t}$



143| $\text{Dc}\ddot{\text{t}}\text{i} \text{ G}\ddot{\text{v}}\text{mW} \text{ e}\ddot{\text{v}}\text{ü} \text{ m}\ddot{\text{v}}\text{üK}\ddot{\text{v}}\text{i} \text{ A} \text{ M}\ddot{\text{v}}\text{m}\text{U} \text{ b}\ddot{\text{x}}\ddot{\text{t}}\text{Pi} \text{ t}\ddot{\text{K}}\text{v}\text{b}\text{U}?$

(K) Cl_2

(L) Cu_2O

(M) SO_2 ✓

(N) Cl_2

144| $\text{A} \text{ M}\ddot{\text{v}}\text{m}\text{U} \text{ c}\ddot{\text{v}}\text{vbi} \text{ m}\ddot{\text{v}}\text{t} \text{ W}\ddot{\text{v}}\text{q}\text{v} \text{ K}\ddot{\text{t}}\text{i} \text{ t}\ddot{\text{K}}\text{v}\text{b} \text{ G}\ddot{\text{v}}\text{mW}\text{U} \text{ Drcb} \text{ K}\ddot{\text{t}}\text{i}?$

(K) H_2CO_3

(L) H_2SO_4

(M) H_2SO_3 ✓

(N) HCl

145| $\text{e}\ddot{\text{v}}\text{e} \text{ R}\ddot{\text{x}}\text{e}\ddot{\text{t}}\text{b} \text{ A} \text{ M}\ddot{\text{v}}\text{m}\text{U} \text{ e}\ddot{\text{v}}\text{üZ} \text{ nq}\ddot{\text{N}}$

(i) $\text{R}\ddot{\text{x}}\text{e}\text{Y} \text{ l} \text{ K}\ddot{\text{x}}\text{U}\text{b}\text{v}\text{kK} \text{ W}\ddot{\text{t}}\text{m}\ddot{\text{t}}\text{e}$

(ii) $\text{d}\ddot{\text{j}}\text{g}\text{j} \text{ cPb} \text{ t}\ddot{\text{v}}\text{t}\ddot{\text{a}}$

(iii) $\text{W}\ddot{\text{e}}\text{i}\ddot{\text{A}}\text{K} \text{ W}\ddot{\text{t}}\text{m}\ddot{\text{t}}\text{e}$

$\text{Wb}\ddot{\text{t}}\text{Pi} \text{ t}\ddot{\text{K}}\text{v}\text{b}\text{U} \text{ m}\ddot{\text{v}}\text{K}?$

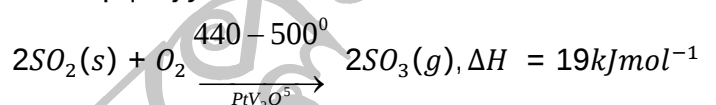
(K) i l ii

(L) ii l iii

(M) i l iii

(N) i, ii l iii✓

$\text{Wb}\ddot{\text{t}}\text{Pi} \text{ W}\ddot{\text{e}}\text{v}\text{q}\text{v}\text{U} \text{ j}\ddot{\text{y}} \text{ K}\ddot{\text{t}}\text{iv} \text{ Ges } 146 \text{ l } 147 \text{ bs } \text{c}\ddot{\text{t}}\text{ki} \text{ D}\ddot{\text{E}}\text{i} \text{ `v} \text{ l t}$



146| $\text{Dc}\ddot{\text{t}}\text{i} \text{ W}\ddot{\text{e}}\text{v}\text{q}\text{v}\text{U} \text{ GK}\ddot{\text{t}}\text{U}\ddot{\text{N}}$

(K) $\text{Z}\ddot{\text{v}}\text{cDrcv}\ddot{\text{x}} \text{ W}\ddot{\text{e}}\text{v}\text{q}\text{v}\text{U}$

(L) $\text{Z}\ddot{\text{v}}\text{c}\text{v}\text{ix} \text{ W}\ddot{\text{e}}\text{v}\text{q}\text{v}\text{U}$

(M) $\text{m}\ddot{\text{a}}\text{s}\text{Lg}\text{Lx} \text{ W}\ddot{\text{e}}\text{v}\text{q}\text{v}\text{U}$

(N) $\text{c}\ddot{\text{d}}\text{vrg}\text{Lx} \text{ W}\ddot{\text{e}}\text{v}\text{q}\text{v}\text{U}$

147| $\text{G} \text{ W}\ddot{\text{e}}\text{v}\text{q}\text{v}\text{U}$

(i) $\text{Z}\ddot{\text{v}}\text{c}\text{v}\text{ix} \text{ e}\ddot{\text{v}}\text{v}\text{t}\text{j} \text{ Drcv}\ddot{\text{x}} \text{ i} \text{ c}\ddot{\text{v}}\text{igvY} \text{ e}\ddot{\text{v}}\text{ü} \text{ c}\ddot{\text{v}}\text{t}\text{e}$

(ii) $\text{P}\ddot{\text{v}}\text{c} \text{ e}\ddot{\text{v}}\text{v}\text{t}\text{j} \text{ Drcv}\ddot{\text{x}} \text{ i} \text{ c}\ddot{\text{v}}\text{igvY} \text{ e}\ddot{\text{v}}\text{ü} \text{ c}\ddot{\text{v}}\text{t}\text{e}$

(iii) $\text{Drcv}\ddot{\text{x}} \text{ SO}_3 \text{ G}\ddot{\text{i}} \text{ m}\ddot{\text{v}}\text{t} \text{ c}\ddot{\text{v}}\text{v}\text{b} \text{ t}\ddot{\text{h}}\text{v}\text{M} \text{ K}\ddot{\text{t}}\text{j} \text{ a}\ddot{\text{g}}\text{v}\text{q}\text{g}\text{v}\text{b} \text{ m}\ddot{\text{v}}\text{j}\text{v}\text{d}\text{v}\text{K}$
 $\text{G}\ddot{\text{v}}\text{mW} \text{ Drcb} \text{ nq}\text{v}$

$\text{Wb}\ddot{\text{t}}\text{Pi} \text{ t}\ddot{\text{K}}\text{v}\text{b}\text{U} \text{ m}\ddot{\text{v}}\text{K}?$

(K) ii✓

(L) ii l iii

(M) i l iii

(N) i, ii l iii

GK`k Aa`vqt L`bR m`vü` -R`xek`

1| $\text{c}\ddot{\text{v}}\text{K}\ddot{\text{v}}\text{ZK} \text{ M}\ddot{\text{v}}\text{t}\text{m} \text{ kZKiv} \text{ KZ} \text{ f}\ddot{\text{v}}\text{M} \text{ B}\ddot{\text{t}}\text{b} \text{ v}\ddot{\text{t}}\text{K}?$

(K) 3 fvm

(L) 4 fvm

(M) 6 fvm

(N) 7 fvm✓

2| $\text{Wb}\ddot{\text{t}}\text{Pi} \text{ t}\ddot{\text{K}}\text{v}\text{b} \text{ t}\ddot{\text{h}}\text{S}\text{M}\text{U} \text{ t}\ddot{\text{e}}\text{v}\text{igb} \text{ e}\ddot{\text{t}}\text{Yi} \text{ j}\ddot{\text{v}}\text{j} \text{ eY}\ddot{\text{t}}\text{K} \text{ eY}\text{nb} \text{ K}\ddot{\text{t}}\text{j}$
 $\text{c}\ddot{\text{v}}\text{t}\text{i}?$

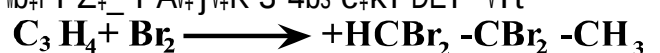
(K) C_3H_8

(L) C_3H_3

(M) $\text{C}_3\text{H}_6\text{O}$

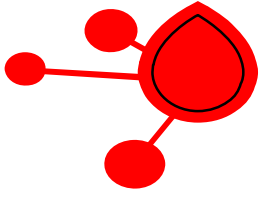
(N) C_3H_4 ✓

➤ $\text{Wb}\ddot{\text{t}}\text{Pi} \text{ Z}\ddot{\text{t}}\text{v}\text{v}\text{v} \text{ A}\ddot{\text{v}}\text{t}\text{j}\text{v}\text{t}\text{K} \text{ 3-4bs } \text{c}\ddot{\text{t}}\text{ki} \text{ D}\ddot{\text{E}}\text{i} \text{ `v} \text{ l t}$



X

Y



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3| Y thšMUi bvg Kx?

(K) 1,1- WvBtevgv tcvcb

(L) 2,2-WvBtevgv tcvcb

(M) 1,1,2,2-†Uvtevgv tcvcb✓

(N) 1,2- WvBtevgv tcvcb

4| Dİxc†Ki `X' thšMUi

(i) ms†hvRb weμqv t`q

(ii) cv÷K ^Zi†Z e`eüZ nq

(iii) Y A†cÿv Kg mμq

wb†Pi †KvbU mVK?

(K) i I ii✓

(L) ii I iii

(M) i I iii

(N) i, ii I iii

5| wb†Pi †KvbU Rxevk† Rvj wb bq?

(K) Kqv

(L) gvU✓

(M) †Zj

(N) cvK†ZK M`vm

6| mKj Rvj wbi gj Dcv`vb †KvbU?

(K) Aw · †Rb I Aw · †R†bi thšM

(L) wvjKb I wvjK†bi thšM

(M) Kveb I Kve†bi thšM✓

(N) nvB†W†Rb

7| cvK†ZK M`vm w†_†bi kZKiv crigY KZ?

(K) 80 fvm✓

(L) 99.99 fvm

(M) 40 fvm

(N) 7 fvm

8| evsjv`†k cvß cvK†ZK M`vm w†_†bi crigY KZ?

(K) 80% fvm

(L) 75%

(M) 90%

(N) 99.99%✓

9| cvK†ZK M`vm weD†U†bi crigY KZ?

(K) 7%

(L) 6%

(M) 4%✓

(N) 3%

10| Kqv†i cavb Dcv`vb Kx?

(K) Kveb✓

(L) nvB†WvKveb

(M) w†_b

(N) weD†U†b

11| w†_b †KvbU†i cavb Dcv`vb?

(K) Kqv

(L) cvK†ZK M`vm✓

(M) †c†Uw†j qvg

(N) nvB†WvKveb

12| †c†Uw†j qvg, Kqv I cvK†ZK M`vm†i cavb Dcv`vb

h_vμ†gÑ

(K) Kveb, nvB†WvKve†bi w†gY, w†_b

(L) w†_b, weDU†b, Kveb

(M) nvB†WvKve†bi w†gY, Kveb, w†_b✓

(N) KveY, †KvK, w†_b

13| Kqv†K Zvc w`†j Dvqx M`vm wBMZ nevi ci cvß
Ae†kl†K Kx ejv nq?

(K) w†_b

(L) †c†U†j

(M) †KvK✓

(N) Rxevk†

14| eZgvb th M`vm†K Zi jxfZ I wvjU†i f†Z K†i LPG
M`vm†c†i v†bi K†R e`eüZ nq, Zv†Z Kve†bi msL`v KZ?

(K) 1 †_†K 4✓

(L) 5 †_†K 10

(M) 5

(N) 6 †_†K 10

15| †c†Uw†j qvg kZKiv KZ f†M †c†Uw†j qvg M`vm _v†K?

(K) 2 f†M✓

(L) 5 †_†K 10 f†M

(M) 10 f†M

(N) 11 †_†K 16 f†M

16| Ask K†j†gi KZ Zvcg†i AA†j †_†K c_KxKZ Ask
b`vc _v e†j?

(K) 21-70°C

(L) 71-120°C ✓

(M) 121-170°C

(N) 1-340°C

17| †c†Uw†j qvg kZKiv KZ f†M †c†Uw†j _v†K?

(K) 2% f†M

(L) 5% f†M✓

(M) 10% f†M

(N) 13% f†M

18| †c†Uw†j qvg kZKiv KZ f†M b`vc _v _v†K?

(K) 2%

(L) 3%

(M) 10%✓

(N) 13%

19| †c†Uw†j qvg †_†K Zvi Dcv`vb, †jv c_K Kiv hvq,
K†iYÑ

(K) Dcv`vb, †jv `vn` c`v_

(L) Dcv`vb, †jv ms†hvRb weμqv t`q

(M) Dcv`vb, †jvi Mjbvsk w†b

(N) Dcv`vb, †jvi ùUv†L w†b ✓

20| †c†Uw†j qvg kZKiv KZ f†M w†Rj _v†K?

(K) 5%

(L) 10%

(M) 13%

(N) 20%✓

21| †KvbU†Z 16 †_†K 20 w† KveY _v†K?

(K) †K†i w†b

(L) †c†U†j

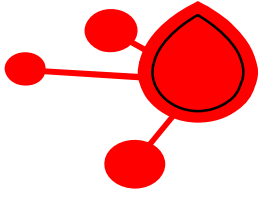
(M) w†Rj✓

(N) jwe†K†Us †Zj



44 | †KvbwU Kÿ ZvcgvÎvq Zi j?


$$(N) \ n \ H_3C = CH_2 \xrightarrow{200^0C, 1000 \ atm}$$



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64| $\text{K} \text{CH}_3\text{Cl}$ $\text{L} \text{CH}_3\text{Cl}_2$

(K) CH_3Cl (L) CH_3Cl_2

(M) CHCl_3 ✓ (N) CCl_4

65| PZbvbkK $\text{m}^{\text{te}} \text{e}^{\text{e}} \text{üZ}$ nq KvbiU ?

(K) $\text{n}^{\text{v}} \text{j} \text{v} \text{b}$ (L) KvbiU

$\text{UvB} \text{KvbiU}$ $\text{ig} \text{b}$ ✓

(M) tdbj (N) tebRb

66| $\text{A}^{\text{v}} \text{j} \text{K} \text{bi}$ Zvcxq fvOb ev $\text{teqR} \text{b}$ KZ Pvc $\text{c}^{\text{q}} \text{Rb}$?

(K) 50 evq Pvc (L) 60 evqPvc

(M) 70 evqPvc ✓ (N) 80 evqPvc

67| WvBiqk $\text{Ki} \text{Z}$ veK $\text{m}^{\text{te}} \text{b} \text{Pi}$ KvbiU $\text{e}^{\text{e}} \text{envi}$ nq ?

(K) CH_3Cl (L) CHCl_3

(M) CCl_3 (N) CCl_4 ✓

68| KvbiU MR I ggj $\text{v} \text{K}$ $\text{mn} \text{R}$ $\text{e}^{\text{f}} \text{Z}$ $\text{K} \text{i}$?

(K) CH_4 (L) $\text{CH}_2=\text{CH}_2$

(M) CHCl_3 (N) CCl_4 ✓

69| RIjvBum nj FYvZK $\text{Avabh}^3 \text{N}$

(K) $\text{R} \frac{1}{4}$ $\text{m} \text{v} \text{j} \text{K} \text{U}$ (L) $\text{A}^{\text{v}} \text{j} \text{g} \text{b} \text{v} \text{m} \text{v} \text{j} \text{K} \text{U}$ ✓

(M) $\text{mvjK} \text{U}$ (N) $\text{e} \cdot \text{vBU}$

70| RIjvBum KvbiU $\text{ai} \text{bi}$ $\text{th} \text{SM}$?

(K) FYvZK $\text{R} \text{Uj}$ $\text{th} \text{SM}$ (L) FYvZK $\text{R} \text{Uj}$ $\text{th} \text{SM}$ ✓

(M) $\text{wbi} \text{c} \text{y}$ $\text{R} \text{Uj}$ $\text{th} \text{SM}$ (N) $\text{m} \text{v} \text{j} \text{K} \text{U}$

71| tgvg $\text{Z} \text{vii}$ Rb^{v} I iv^{v} cvKv Kivi Rb^{v} KvbiU $\text{e}^{\text{e}} \text{envi}$

Kiv nq ?

(K) enr wKj $\text{w} \text{e} \text{k} \text{o}$ $\text{A}^{\text{v}} \text{j} \text{Kb}$ ✓

(L) y^{v} wKj $\text{w} \text{e} \text{k} \text{o}$ $\text{A}^{\text{v}} \text{j} \text{Kb}$

(M) en^{v} wKj $\text{w} \text{e} \text{k} \text{o}$ $\text{d}^{\text{v}} \text{U}$ $\text{G} \text{m} \text{W}$

(N) y^{v} wKj $\text{w} \text{e} \text{k} \text{o}$ $\text{K}^{\text{v}} \text{U}$ $\text{G} \text{m} \text{W}$

72| $\text{b} \text{Pi}$ KvbiU RIjvBum Gi Dcv^{v} vb bq ?

(K) $\text{A}^{\text{v}} \text{j} \text{g} \text{b} \text{q} \text{vg}$ (L) $\text{b} \text{Kj}$ ✓

(M) $\text{m} \text{v} \text{j} \text{Kb}$ (N) $\text{A}^{\text{v}} \cdot \text{Rb}$

73| $\text{A}^{\text{v}} \text{j} \text{K} \text{bi}$ mvaviY $\text{ms} \text{KZ}$ KvbiU ?

(K) $\text{C}_n \text{H}_{2n+2}$ (L) $\text{C}_n \text{H}_{2n-2}$

(M) $\text{C}_n \text{H}_{2n}$ ✓ (N) $\text{C}_n \text{H}_{2n+1}$

74| $\text{m} \text{u}^3$ $\text{nvB} \text{WvKve} \text{bi}$ ($\text{A}^{\text{v}} \text{j} \text{K} \text{bi}$) mvaviY $\text{ms} \text{KZ}$

KvbiU ?

(K) $\text{C}_n \text{H}_{2n+2}$ ✓ (L) $\text{C}_n \text{H}_{2n}$

(M) $\text{C}_n \text{H}_{2n-1}$ (N) $\text{C}_n \text{H}_{2n-2}$

75| $\text{b} \text{Pi}$ KvbiU $\text{A}^{\text{v}} \text{j} \text{K} \text{bi}$ tkYf^3 ?

(K) $\text{C}_2 \text{H}_6$ (L) $\text{C}_3 \text{H}_4$

(M) $\text{C}_4 \text{H}_8$ ✓ (N) $\text{C}_5 \text{H}_8$

76| $\text{b} \text{Pi}$ KvbiU $\text{th} \text{SM}$ U $\text{A}^{\text{v}} \text{j} \text{Kb}$?

(K) $\text{C}_3 \text{H}_8$ (L) $\text{C}_3 \text{H}_6$ ✓

(M) $\text{C}_2 \text{H}_6$ (N) $\text{C}_4 \text{H}_{10}$

77| $\text{b} \text{Pi}$ KvbiU $\text{B} \text{v} \text{bi}$ $\text{ms} \text{KZ}$?

(K) CH_4 (L) $\text{H}_3 \text{C}-\text{CH}_3$

(M) $\text{C}_2 \text{H}_2$ (N) $\text{C}_2 \text{H}_4$ ✓

78| $\text{A}^{\text{v}} \text{j} \text{K} \text{bi}$ y^{v} Zg m^{v} KvbiU ?

(K) $\text{ig} \text{b}$ (L) $\text{B} \text{v} \text{b}$ ✓

(M) $\text{B} \text{v} \text{Bb}$ (N) $\text{A}^{\text{v}} \text{m} \text{U} \text{v} \text{b}$

79| $\text{B} \text{v} \text{bj} \text{K}$ $\text{A}^{\text{v}} \text{j} \text{g} \text{b} \text{q} \text{vg}$ $\text{A} \cdot \text{B} \text{Wi}$ Dcv^{v} $\text{Z} \text{Z}$ $\text{D} \text{E} \text{B}$ $\text{Ki} \text{tj}$

Kx Drcb nq ?

(K) $\text{B} \text{v} \text{b}$ ✓ (L) $\text{B} \text{v} \text{Bb}$

(M) tcvcvBb (N) $\text{ig} \text{b}$

80| $\text{A}^{\text{v}} \text{j} \text{Kb}$ imvqibK fvte $\text{Ki} \text{c}$?

(K) Kg $\text{m} \text{v} \text{q}$ (L) $\text{b} \text{v} \text{q}$

(M) AZ^{v} S $\text{m} \text{v} \text{q}$ ✓ (N) cvbMvnx

81| KvbiU Amu^3 $\text{nvB} \text{WvKve} \text{bi}$ $\text{D}^{\text{v}} \text{niY}$?

(K) $\text{ig} \text{b}$ (L) $\text{B} \text{v} \text{b}$ ✓

(M) $\text{tcv} \text{cb}$ (N) $\text{wD} \text{U} \text{b}$

82| $\text{A}^{\text{v}} \text{j} \text{Kb}$ $\text{n} \text{Z}$ $\text{A}^{\text{v}} \text{j} \text{Kb}$ c^{v} $\text{Z} \text{Z}$ $\text{b} \text{Pi}$ KvbiU $\text{c} \text{fveK}$

$\text{m}^{\text{te}} \text{e}^{\text{e}} \text{üZ}$ nq ?

(K) tmvWv jvBg (L) $\text{A}^{\text{v}} \text{j} \text{g} \text{bv}$

(M) y^{v} (N) avZe $\text{c} \text{fveK}$ ✓

83| $\text{b} \text{Kj}$ $\text{c} \text{fveK}$ Ki Dcv^{v} Z $\text{A}^{\text{v}} \text{j} \text{Kb}$ $\text{t} \text{K}$ $\text{A}^{\text{v}} \text{j} \text{Kb}$

c^{v} $\text{Z} \text{Z}$ $\text{b} \text{Pi}$ KZ $\text{Zvcg} \text{v}$ $\text{c}^{\text{q}} \text{Rb}$?

(K) 200-250°C (L) 180-200°C ✓

(M) 400-450°C (N) 500-550°C

84| $\text{D}^{\text{v}} \text{TM} \frac{3}{4}$ Zj $\text{t} \text{K}$ KvbiU $\text{w} \text{v} \text{q} \text{v}$ gva^{v} $\text{g} \text{v} \text{Rvib}$ Drcb

Kiv nq ?

(K) $\text{tev} \text{gb}$ $\text{ms} \text{hvRb}$ (L) RviY $\text{w} \text{v} \text{q} \text{v}$

(M) $\text{c} \text{v} \text{g} \text{v}$ KiY (N) $\text{nvB} \text{WvR} \text{b} \text{b} \text{Kb}$ ✓

85| $\text{A}^{\text{v}} \text{j} \text{KvBb}$ tkYi y^{v} Zg I mi jZg m^{v} KvbiU ?

(K) CH_4 (L) $\text{C}_2 \text{H}_2$ ✓



(M) e^v†KjvBU✓ (N) c_vj c_vj b

119 | PVC bvgK c_v ÷ †Ki g†bvgv †KvbU?

(K) CH₂Br-CH₂Br (L) CF₂=CF₂

(M) CH₂=CHCl✓ (N) H-CHO

120 | b_x†Pi †Kvb c_v ÷ K †U†K GKevi gv† Mjv†bv hvq I

AvKvi †`qv hvq? (†ØZiq evi Zvc c†qvM Ki†j G₅†jv Kqjvq

c_vjYZ nq)

(K) PVC (L) c_vj †_b

(M) c_vj c_vj b (N) e^v†KjvBU✓

121 | c_v ÷ K †evZj ^Z†i†Z †b†Pi †KvbU e^venvi Kiv nq?

(K) c_vj †_b (L) c_vj †c_vcb✓

(M) PVC (N) b†Bjb

122 | bb † ÷ K cv† ^Z†i†Z †b†Pi †KvbU e^veüZ nq?

(K) PVC (L) c_vj †_b

(M) †Udjb✓ (N) b†Bjb

123 | †v†Zi evk ^Z†i†Z †b†Pi †KvbU e^veüZ nq?

(K) PCV (L) c_vj †_b

(M) †Udjb (N) b†Bjb✓

124 | c_v ÷ K †kU ^Z†i†Z †KvbU e^venvi Kiv nq?

(K) PCV (L) c_vj †_b✓

(M) †Udjb (N) b†Bjb

125 | †v†gvc_v ÷ K c_vjgv†i i D`vniY †KvbU?

(K) e^v†KjvBU (L) dvBevi Mvmg

(M) B†c_vmm (N) PCV✓

126 | A^vj†Kvnj†K †Kvb Rv†K Øviv RwiZ Ki†j c_†g

A^vj †WvBW†K†Uvb Ges cieZ†Z ^Re G†m†W c_viYZ nq?

(K) K₂Cr₂O₇ † H₂SO₄✓ (L) MnO₂ † HCl

(M) LiAlH₄ (N) HgSO₄, H₂SO₄

127 | A^vjKvBjg†K CH₃-, C₂H₅-, C₃H₇- BZ`v† †K b_x†Pi

†Kvb A†yi †_†K cKvk Kiv nq?

(K) X (L) R✓

(M) Z (N) A

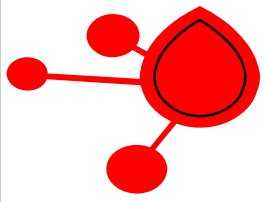
128 | Avbvi†mi cvZv † K†jv M†v†Qi Avk †_†K DbZgv†bi

mZv ^Zix nq †Kvb †`†k?

(K) †d†j cvBb † B†`v†b†kqv✓

(L) Rvcvb † Pxb

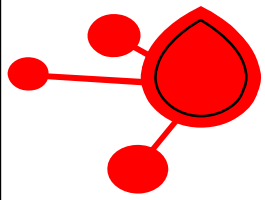
(M) c_vW†_b † kxjsKv



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- (N) Biodegradable I graqvgvi
129| cwi ÷ K RvZxq cwigvi, tju tKvb aiþbi thšM?
(K) Non-biodegradable ✓
(L) Photo degradable
(M) Bio degradable
(N) Eaxily degradable
130| D^oP Zvc I Pvþc evqi A^o · tRb Øviv tçUwjqvg t_oþK
A^ovjþKþbi RviþY tKvbU Drcb nqñ
(K) HCOOH (L) HCHO
(M) CH₃COOH ✓ (N) CH₃-CHO
131| CH₃COOH -Gi bvg wK?
(K) digK GmW (L) A^ovmiUK GmW ✓
(M) d^oAU GmW (N) Iwj K GmW
132| ^oRe GmW tKvbU?
(K) H₂CO₃ (L) HCOOH ✓
(M) H₃PO₄ (N) CH₃-OH
133| d^ovU GmþWi mvaviY msþKZ tKvbU?
(K) RCOOH ✓ (L) R-OH
(M) RCHO (N) RCOOR
134| 2% HgSO₄.Ges 20% H₂SO₄ Gi Dc^o ZþZ
B_oVb cwi mvþ_o we^oµqv Kþi Kx Drcb Kþi?
(K) A^ovjþKvnj (L) B_ovi
(M) A^ovj WnBW ✓ (N) wKþUvb
135| cviwDg, KmþgU · I Jla wKþi ^oveK wntmte wþPi
tKvbU e^oeüZ nq?
(K) B_ovbj ✓ (L) w_ovbj
(M) digvb WnDn (N) tcvþcb
136| B_ovþji kZKiv KZ fvM Rjxq ^oeYþK tKiUdvBW
w^oüwiU eþj?
(K) 80-85% (L) 96% ✓
(M) 70% (N) 75%
137| tkZmvi ev kKiv ev ÷ vþPi MvRb c^oµqv tKvbU
cvlqv hvq?
(K) B_ovbj ✓ (L) w_ovbj
(M) DfqU (N) B_ovþqK GmW
138| ÷vP, wPUv_o t_oþK tKvb c^oµqv A^ovcjþKvnj Drcv^ob
Kiv nq?

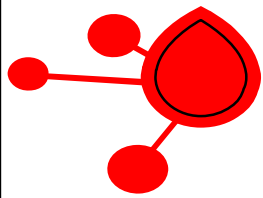
- (K) hZ cwigvi KiY (L) LbxfýY cwigvi KiY
(M) MvRb/dvþgþUkb ✓ (N) Zvcxq weþhvRb
139| B_ovþji 96% Rjxq ^oeYþK ejv nqñ
(K) dgwjb (L) wþbMvi
(M) tKiUdvDW w^oüwiU ✓ (N) c^oviwdb
140| M^ovmþvj (Gasohol) tKvbU?
(K) tçUvj + 10-20% B_ovbj ✓
(L) dgvj WnBW 40% Rjxq ^oeY
(M) B_ovþq GmþWi 6-10% Rjxq ^oeY
(N) 100% dgwjb
141| eZgvþ tKvb t_oþK RxeK^o Rvjwbi cwiþZ B_ovþjþK
gUi B^oþbi Rvjwbi tç e^oenvi Kiv nq|
(K) ewRj ✓ (L) A^ogriKv
(M) wPi (N) Rvgwb
142| wþPi tKvbU wlv³ thšM?
(K) w_ovbj ✓ (L) B_ovbj
(M) c^oviw WnBW (N) wþbMvi
143| tgv_oþjvUw w^oüwiU ejv nq tKvbUþK?
(K) B_ovþji 96% Rjxq ^oeY
(L) B_ovþqK GmþWi 6-10% Rjxq ^oeY
(M) dgvj WnBW 40% Rjxq ^oeY
(N) w_ovbj h³ tKiUdvDW w^oüwiU ✓
145| RxeK^o Rvjwbi Dci KgvþZI cwiþekþK ^oIYg³
ivLþZ bxþPi tKvbU Rvjwbi wntmte e^oenvi Kiv DvPr?
(K) A^ovjþKvnj ✓ (L) ^oRe GmW
(M) A^ovj WnBW (N) A^ovjþKb
146| hZ cwigvi KiY we^oµqv mvaviYZ gþbvgvi wntmte
we^oµqv Kþi tKvbU?
(K) A^ovj WnBW (L) A^ovjþKb
(M) ^oRe GmW (N) w^oeÜb weikó A^ovjþKb ✓
147| 100% dgwjb nþjvñ
(K) B_ovþji 96% Rjxq ^oeY
(L) digvj WnBW 37% Rjxq ^oeY (fi wntmte) ✓
(M) B_ovþqK GmþWi 6-10% Rjxq ^oeY
(N) digvj WnBW 100% ^oeY
148| w_ovþvj ev digvj WnBW m^oú³ Rjxq ^oeY (40%
AvqZb wntmte) tK ejv nqñ



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- (K) $\text{tiK} \text{UdvBW}$ $\text{w} \text{u} \text{iU}$ (L) 100% $\text{digwjb} \checkmark$
 (M) $\text{c} \text{v} \text{ivj} \text{WnvBW}$ (N) $\text{w} \text{f} \text{bMvi}$
- 149 | gZ $\text{c} \text{v} \text{Yx}$ $\text{msi} \text{y} \text{tY}$ $\text{e} \text{e} \text{uZ}$ nq tKvbU ?
 (K) $\text{tiK} \text{UdvBW}$ $\text{w} \text{u} \text{iU}$
 (L) $\text{w} \text{f} \text{bMvi}$
 (M) $\text{c} \text{v} \text{ivj} \text{WnvBW}$
 (N) 100% dgwjb ev 40% $\text{dgwj} \text{WnvBW} \checkmark$
- 150 | $\text{wg_vb} \text{v} \text{v} \text{j}$ (H-CHO) / $\text{digvj} \text{WnvBW} \text{tK}$ $\text{A} \text{wZ}$ $\text{wb} \text{Pv} \text{t} \text{c}$ $\text{D} \text{E} \text{B}$ $\text{Ki} \text{tj}$ tKvb $\text{c} \text{w} \text{ig} \text{v} \text{iU}$ Drcb nq ?
 (K) $\text{bv} \text{Bjb}$ (L) $\text{tU} \text{w} \text{i} \text{v} \text{v} \text{j}$
 (M) $\text{tmj} \text{vgv} \text{Bb}$ (N) $\text{tW} \text{i} \text{v} \text{v} \text{j} \text{b} \checkmark$
- 151 | $\text{w} \text{f} \text{bMvi}$ $\text{wn} \text{t} \text{m} \text{t} \text{e}$ $\text{e} \text{e} \text{uZ}$ nq tKvbU ?
 (K) digK GimW (L) $\text{A} \text{v} \text{im} \text{UK}$ $\text{GimW} \checkmark$
 (M) $\text{mv} \text{B} \text{UK}$ GimW (N) $\text{A} \cdot \text{w} \text{jk}$ GimW
- 152 | $\text{w} \text{f} \text{bMvi}$ $\text{n} \text{tj} \text{v} \text{N}$
 (K) $\text{B_vb} \text{tj}$ 96% Rjxq eY
 (L) $\text{digvj} \text{WnvB} \text{Wi}$ 40% Rjxq eY
 (M) $\text{B_vb} \text{qK}$ $\text{Gim} \text{Wi}$ 6-10% Rjxq $\text{eY} \checkmark$
 (N) $\text{t} \text{c} \text{t} \text{Uv} \text{j}$ I 10-20% $\text{B_vb} \text{tj}$ igkY
- 153 | $\text{tW} \text{i} \text{v} \text{v} \text{j}$ $\text{bv} \text{gK}$ $\text{c} \text{w} \text{ig} \text{v} \text{i}$ Drcb nq $\text{bx} \text{tPi}$ tKvbU t_tK ?
 (K) $\text{wg_vb} \text{j}$ (L) $\text{wg_vb} \text{v} \text{v} \text{j} \checkmark$
 (M) $\text{B_vb} \text{j}$ (N) $\text{f} \text{bv} \text{Bj}$ $\text{tKv} \text{iv} \text{BW}$
- 154 | $\text{B_vb} \text{v} \text{v} \text{j}$ (ev $\text{A} \text{v} \text{im} \text{Uv} \text{j} \text{WnvBW}$) Gi $\text{ms} \text{tKZ}$ tKvbU ?
 (K) $\text{CH}_3\text{-CH}_3\text{-OH}$ (L) $\text{CH}_3\text{-CHO} \checkmark$
 (M) CH_3COOH (N) $\text{OH-CH}_2\text{-CH}_2\text{-OH}$
- 155 | $\text{mM} \text{U} \text{G} \text{v} \text{i}$ RvZxq $\text{ivm} \text{q} \text{bK}$ $\text{e} \text{e} \text{b} \text{tPi}$ tKvb wU $\text{th} \text{tMi}$ $\text{Nbx} \text{feb}$ $\text{c} \text{w} \text{ig} \text{v} \text{i}$ $\text{Ki} \text{tYi}$ $\text{gva} \text{t} \text{g}$ Drcb nq ?
 (K) $\text{A} \text{v} \text{v} \text{v} \text{Kb}$ I $\text{Av} \text{v} \text{v} \text{Kb}$
 (L) $\text{A} \text{v} \text{v} \text{v} \text{Kb}$ I $\text{A} \text{v} \text{v} \text{v} \text{Kv} \text{nj}$
 (M) $\text{A} \text{v} \text{v} \text{v} \text{Kv} \text{nj}$ I Re $\text{GimW} \checkmark$
 (N) $\text{A} \text{v} \text{v} \text{v} \text{Kb}$ I Re GimW
- 156 | $\text{bx} \text{tPi}$ tKvb $\text{w} \text{e} \text{w} \text{m} \text{q} \text{v} \text{q}$ $\text{G} \text{v} \text{i}$ $\text{bv} \text{gK}$ Re $\text{th} \text{SM}$ $\text{Z} \text{w} \text{i}$ nq ?
 (K) $\text{A} \text{v} \text{v} \text{v} \text{Kv} \text{nj}$ I $\text{Kve} \text{w}$ $\cdot \text{w} \text{jk}$ $\text{Gim} \text{Wi}$ $\text{w} \text{e} \text{w} \text{m} \text{q} \text{v} \text{q} \checkmark$
 (L) $\text{A} \text{v} \text{v} \text{v} \text{Kv} \text{nj}$ I $\text{mv} \text{t}$ Kw $\div \text{K}$ $\text{tm} \text{w} \text{Wi}$ $\text{w} \text{e} \text{w} \text{m} \text{q} \text{v} \text{q}$
 (M) $\text{Kve} \text{w}$ $\cdot \text{w} \text{jk}$ $\text{Gim} \text{Wi}$ $\text{mv} \text{t}$ $\text{mj} \text{d} \text{D} \text{w} \text{iK}$ $\text{Gim} \text{Wi}$ $\text{w} \text{e} \text{w} \text{m} \text{q} \text{v} \text{q}$
 (N) $\text{A} \text{v} \text{v} \text{v} \text{Kv} \text{nj}$ I $\text{mv} \text{t}$ $\text{mj} \text{d} \text{D} \text{w} \text{iK}$ $\text{Gim} \text{Wi}$ $\text{w} \text{e} \text{w} \text{m} \text{q} \text{v} \text{q}$

- 157 | $\text{tU} \text{w} \text{i} \text{v} \text{v} \text{j}$ ($\text{c} \text{w} \text{ig} \text{v} \text{i}$) $\text{bv} \text{gK}$ $\text{ivm} \text{q} \text{bK}$ ZS $\text{bx} \text{tPi}$ tKvb wU $\text{Nbx} \text{feb}$ $\text{c} \text{w} \text{ig} \text{v} \text{i}$ KiY $\text{w} \text{e} \text{w} \text{m} \text{q} \text{v} \text{q}$ $\text{gva} \text{t} \text{g}$ Drcb nq ?
 (K) $\text{A} \text{v} \text{v} \text{v} \text{Kb}$ I $\text{Av} \text{v} \text{v} \text{Kb}$
 (L) $\text{A} \text{v} \text{v} \text{v} \text{Kb}$ I $\text{A} \text{v} \text{v} \text{v} \text{Kv} \text{nj}$
 (M) $\text{A} \text{v} \text{v} \text{v} \text{Kv} \text{nj}$ I Re $\text{GimW} \checkmark$
 (N) $\text{A} \text{v} \text{v} \text{v} \text{Kb}$ I Re GimW
- 158 | $\text{Kv} \text{t} \text{ev} \text{v} \text{B} \text{WU}$, tZj ev Pie $\text{bx} \text{tPi}$ tKvb wU $\text{mg} \text{t} \text{tq}$ MvZ nq ?
 (K) LibR GimW I jeY
 (L) Re GimW I Re $\text{Gim} \text{Wi}$ jeY
 (M) $\text{A} \text{v} \text{v} \text{v} \text{Kv} \text{nj}$ I Re $\text{GimW} \checkmark$
 (N) $\text{A} \text{v} \text{v} \text{v} \text{Kb}$ I $\text{A} \text{v} \text{v} \text{v} \text{WnvBW}$
- 159 | $\text{B_vb} \text{qK}$ $\text{Gim} \text{Wi}$ 6-10% Rjxq $\text{eY} \text{tK}$ ejv nqN
 (K) $\text{tiK} \text{UdvBW}$ $\text{w} \text{u} \text{iU}$ (L) digwjb
 (M) $\text{w} \text{f} \text{bMvi} \checkmark$ (N) $\text{c} \text{v} \text{i} \text{w} \text{db}$
- 160 | $\text{digvj} \text{WnvBW}$ (H-CHO) I $\text{BD} \text{w} \text{iqv}$ ($\text{NH}_2\text{-CO-}$ NH_2) t tK $\text{Nbx} \text{feb}$ $\text{c} \text{w} \text{ig} \text{v} \text{i}$ KiY $\text{w} \text{e} \text{w} \text{m} \text{q} \text{v} \text{q}$ $\text{bx} \text{tPi}$ tKvb $\text{c} \text{w} \text{ig} \text{v} \text{iU}$ Drcb nq ?
 (K) $\text{tU} \text{w} \text{i} \text{v} \text{v} \text{j}$ $\text{t} \text{c} \text{w} \text{ig} \text{v} \text{i}$ (L) $\text{PCV}(\text{c} \text{w} \text{ig} \text{v} \text{i})$ $\text{f} \text{bv} \text{Bb}$ $\text{t} \text{dv} \text{iv} \text{BW}$
 (M) $\text{c} \text{w} \text{ig} \text{v} \text{i}$ b (N) $\text{tgj} \text{vgv} \text{Bb} \checkmark$
- 161 | $\text{tgj} \text{vgv} \text{Bb}$ $\text{bv} \text{gK}$ $\text{c} \text{w} \text{ig} \text{v} \text{i}$ Drcb nq $\text{bx} \text{tPi}$ tKvb wU $\text{th} \text{tMi}$ $\text{Nbx} \text{feb} \text{t} \text{bi}$ $\text{gva} \text{t} \text{g}$?
 (K) $\text{B_vb} \text{j}$ I Re GimW
 (L) $\text{A} \text{v} \text{v} \text{v} \text{Kb}$ I $\text{A} \text{v} \text{v} \text{v} \text{Kv} \text{Bj}$
 (M) $\text{digvj} \text{WnvBW}$ I $\text{BD} \text{w} \text{iqv} \checkmark$
 (N) $\text{Wv} \text{BK} \text{v} \text{i} \text{M} \text{w} \text{jk}$ GimW I $\text{Wv} \text{BA} \text{v} \text{ig} \text{b}$ AY
- 162 | $\text{N} \text{tgi}$ Jla $\text{wn} \text{t} \text{m} \text{t} \text{e}$ $\text{e} \text{e} \text{uZ}$ nq tKvbU ?
 (K) $\text{A} \text{v} \text{im} \text{Uv} \text{j} \text{WnvBW}$ (L) 100% dgwjb
 (M) $\text{c} \text{v} \text{ivj} \text{WnvBW} \checkmark$ (N) $\text{B_vb} \text{j}$
- 163 | $\text{wg_vb} \text{v} \text{v} \text{j}$ tKvbU ?
 (K) $\text{CH}_3\text{-OH}$ (L) $\text{H-CHO} \checkmark$
 (M) $\text{CH}_3\text{-CHO}$ (N) $\text{C}_2\text{H}_5\text{-OH}$
- 164 | $\text{w} \text{a} \text{tZ}$ tKvb GimW $\text{v} \text{tK}$?
 (K) $\text{UviU} \text{w} \text{iK}$ GimW (L) $\text{mv} \text{B} \text{UK}$ GimW
 (M) $\text{A} \text{v} \text{im} \text{UK}$ GimW (N) $\text{j} \text{v} \text{K} \text{UK}$ $\text{GimW} \checkmark$
- 165 | tKvbU $\text{c} \text{w} \text{ig} \text{v} \text{i}$ K ($\text{c} \text{w} \text{ig} \text{v} \text{i}$) Drcv $\text{t} \text{b}$ $\text{e} \text{e} \text{uZ}$ nq bv ?
 (K) $\text{A} \text{v} \text{v} \text{v} \text{Kb} \checkmark$ (L) $\text{A} \text{v} \text{v} \text{v} \text{Kb}$
 (M) $\text{A} \text{v} \text{v} \text{v} \text{WnvBW}$ (N) Re GimW



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166 | $\text{KvbiU Mxb nvBR M'vm?}$

- (K) Hg_2b (L) B_2b
(M) $\text{A}^{\text{v}}\text{gwbqv}$ (N) $\text{Kveb-WvB-A} \cdot \text{vBW} \checkmark$

167 | $\text{A}^{\text{v}}\text{j} \text{Kvn} \text{j} \text{i} \text{mvaviY ms}^{\text{t}}\text{KZ} \text{K?}$

- (K) $\text{C}_n\text{H}_{2n+2}$ (L) $\text{C}_n\text{H}_{2n+1}\text{COOH}$
(M) C_nH_{2n} (N) $\text{C}_n\text{H}_{2n+1}\text{OH} \checkmark$

168 | $\text{A}^{\text{v}}\text{j} \text{Kvn} \text{j} \text{i} \text{KvhKix gjK} \text{KvbiU?}$

- (K) $-\text{COOH}$ (L) $-\text{OH} \checkmark$
(M) C_2H_5 (N) $-\text{CH}_3$

169 | $\text{Re A}^{\text{t}}\text{ai KvhKix gjK} \text{KvbiU?}$

- (K) $-\text{COOH} \checkmark$ (L) $-\text{OH}$
(M) $-\text{CHO}$ (N) $>\text{CO}$

170 | $\text{vg}_\text{v} \text{bqK GwmW ev di} \text{vgK Gwm}^{\text{t}}\text{Wi ms}^{\text{t}}\text{KZ} \text{KvbiU?}$

- (K) $\text{HCOOH} \checkmark$ (L) $\text{CH}_3\text{-COOH}$
(M) $\text{CH}_3\text{-CH}_2\text{-COOH}$ (N) KvbiUvB bv

171 | $\text{HCB} \text{r}_2\text{-CB} \text{r}_2\text{-CH}_3 \text{th}^{\text{t}}\text{M} \text{Ui A} \text{v} \text{a} \text{ibK bvg Kx?}$

- (K) $1,1,2,2\text{-tU} \text{v} \text{tevgv} \text{t} \text{c} \text{v} \text{cb} \checkmark$
(L) $1,2\text{-WB} \text{tevgv} \text{t} \text{c} \text{v} \text{cb}$
(M) $1,1,2,2\text{-tU} \text{v} \text{tevgv} \text{vg}_2\text{b}$
(N) $1,1\text{-WB} \text{tevgv} \text{t} \text{c} \text{v} \text{cb}$

172 | $\text{CH}_3\text{-CH=CH}_2 \text{th}^{\text{t}}\text{M} \text{Ui IUPAC bvg} \text{N}$

- (K) $\text{t} \text{c} \text{v} \text{cb}$ (L) $\text{t} \text{c} \text{v} \text{cb} \checkmark$
(M) $\text{t} \text{c} \text{v} \text{cb-2}$ (N) $\text{t} \text{c} \text{v} \text{cb-1}$

173 | $\text{CH}_3\text{-CH=CH-CH}_3 \text{th}^{\text{t}}\text{M} \text{Ui bvg} \text{K?}$

- (K) $1\text{-ieD} \text{U} \text{b}$ (L) $2\text{-ieD} \text{U} \text{b} \checkmark$
(M) $3\text{-ieD} \text{U} \text{b}$ (N) $\text{ieD} \text{U} \text{b}$

174 | $\text{CH}_3\text{-CH}_2\text{-CH=CH}_2 \text{th}^{\text{t}}\text{M} \text{Ui bvg} \text{K?}$

- (K) $1\text{-ieD} \text{U} \text{b} \checkmark$ (L) $2\text{-ieD} \text{U} \text{b}$
(M) $3\text{-ieD} \text{U} \text{b}$ (N) $\text{ieD} \text{U} \text{b}$

175 | $\text{d}^{\text{v}} \text{vU GwmW I B}_\text{v} \text{b} \text{j} \text{i} \text{ve} \text{m} \text{q} \text{v} \text{th} \text{t}^{\text{t}}\text{M} \text{U Dr} \text{cb} \text{nq-}$

- (K) Bqvi (L) $\text{A}^{\text{v}} \text{j} \text{WnvBW}$
(M) $\text{G} \div \text{vi} \checkmark$ (N) mveb

176 | LPG-

- (i) $\text{Zi jxfZ} \text{t} \text{c} \text{U} \text{w} \text{j} \text{q} \text{vg} \text{M}^{\text{v}} \text{m} (\text{Liquid Petroleum Gas})$
(ii) $\text{Gi nvB}^{\text{t}} \text{WvKveb} \text{1} \text{t} \text{K} \text{4 chv} \text{S} \text{KveY msL}^{\text{v}} \text{v} \text{K}$
(iii) $\text{ivbvi Kv}^{\text{t}} \text{R e}^{\text{e}} \text{uZ} \text{nq}$

$\text{wb}^{\text{t}} \text{Pi} \text{KvbiU m}^{\text{v}} \text{VK?}$

- (K) i I ii (L) ii I iii
(M) i I iii (N) i, ii I iii $\checkmark$

177 | $\text{t} \text{c} \text{U} \text{v} \text{j} \text{N}$

- (i) $\text{t} \text{c} \text{U} \text{w} \text{j} \text{q} \text{v} \text{t} \text{g} \text{kZKiv} \text{5 f} \text{vM} \text{v} \text{K}$
(ii) $5\text{-10 KveY} \text{ve} \text{ik} \text{o} \text{nvB}^{\text{t}} \text{WvKveb}$
(iii) $\text{t} \text{c} \text{U} \text{w} \text{j} \text{q} \text{v} \text{t} \text{g} \text{Avs} \text{ikK} \text{cvZ}^{\text{t}} \text{bi mgq} \text{21-70}^{\text{0}} \text{C}$

$\text{Zvcgv} \text{Iv} \text{AAj} \text{t} \text{K} \text{cv} \text{I} \text{qv} \text{hvq}$

$\text{wb}^{\text{t}} \text{Pi} \text{KvbiU m}^{\text{v}} \text{VK?}$

- (K) i I ii (L) ii I iii
(M) i I iii (N) i, ii I iii $\checkmark$

178 | $\text{b}^{\text{v}} \text{c} \text{v} \text{N}$

- (i) $\text{t} \text{c} \text{U} \text{w} \text{j} \text{q} \text{v} \text{t} \text{g} \text{Avs} \text{ikK} \text{cvZ}^{\text{t}} \text{bi mgq} \text{71-120}^{\text{0}} \text{C}$
 $\text{Zvcgv} \text{Iv} \text{q} \text{cv} \text{I} \text{qv} \text{hvq}$
(ii) $\text{t} \text{c} \text{U} \text{w} \text{j} \text{q} \text{v} \text{t} \text{g} \text{kZKiv} \text{5 f} \text{vM} \text{v} \text{K}$
(iii) $\text{Gi nvB}^{\text{t}} \text{WvKveb} \text{KveY msL}^{\text{v}} \text{v} = 7\text{-14}$

$\text{wb}^{\text{t}} \text{Pi} \text{KvbiU m}^{\text{v}} \text{VK?}$

- (K) i I ii (L) ii I iii
(M) i I iii (N) i, ii I iii $\checkmark$

179 | $\text{W}^{\text{t}} \text{R} \text{j} \text{N}$

- (i) $\text{Gi nvB}^{\text{t}} \text{WvKveb} \text{16-20 ch} \text{S} \text{Kveb msL}^{\text{v}} \text{v} \text{v} \text{K}$
(ii) $\text{t} \text{c} \text{U} \text{w} \text{j} \text{q} \text{v} \text{t} \text{g} \text{kZKiv} \text{20 f} \text{vM} \text{v} \text{K}$
(iii) $\text{t} \text{c} \text{U} \text{w} \text{j} \text{q} \text{v} \text{t} \text{g} \text{Avs} \text{ikK} \text{cvZ}^{\text{t}} \text{bi mgq} \text{171-270}^{\text{0}} \text{C}$

$\text{Zvcgv} \text{Iv} \text{q} \text{cv} \text{I} \text{qv} \text{hvq}$

$\text{wb}^{\text{t}} \text{Pi} \text{KvbiU m}^{\text{v}} \text{VK?}$

- (K) i I ii (L) ii I iii
(M) i I iii (N) i, ii I iii $\checkmark$

180 | $\text{t} \text{K}^{\text{t}} \text{i} \text{v} \text{mb} \text{N}$

(i) $\text{t} \text{c} \text{U} \text{w} \text{j} \text{q} \text{v} \text{t} \text{g} \text{Avs} \text{ikK} \text{cvZ}^{\text{t}} \text{bi} \text{121-170}^{\text{0}} \text{C} \text{Zvcgv} \text{Iv}$
 $\text{Avm}^{\text{t}} \text{j} \text{c} \text{K} \text{nq}$

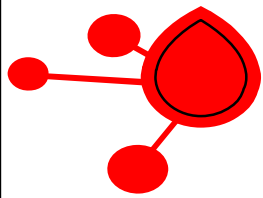
- (ii) $\text{t} \text{c} \text{U} \text{w} \text{j} \text{q} \text{v} \text{t} \text{g} \text{kZKiv} \text{13 f} \text{vM} \text{v} \text{K}$
(iii) $11\text{-16 Kveb} \text{ve} \text{ik} \text{o} \text{nvB}^{\text{t}} \text{WvKveb}$

$\text{wb}^{\text{t}} \text{Pi} \text{KvbiU m}^{\text{v}} \text{VK?}$

- (K) i I ii (L) ii I iii
(M) i I iii (N) i, ii I iii $\checkmark$

181 | $\text{Am} \text{u}^3 \text{nvB}^{\text{t}} \text{WvKveb-}$

- (i) C_2H_2



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(ii) C_3H_8

(iii) C_4H_{10}

ৱব†Pi †KvbiU mivK?

(K) i✓

(L) i l ii

(M) ii l iii

(N) i, ii l iii

182| A'vj†Kbmg†ni ^ekó'cY weμqv-

(i) `nb weμqv

(ii) cZ⁻vcb (n'v†jv†Rb) weμqv

(iii) c†jgviKiY weμqv

ৱব†Pi †KvbiU mivK?

(K) i l ii✓

(L) i l iii

(M) ii l iii

(N) †KvbiU bv

183| A'vj†Kbmg†ni `nb weμqv †KvbiU?

(i) $CH_4(g) + 2O_2(g) \rightarrow CO_2(g) + 4H_2O(g)$

(ii) $CH_4(g) + 2Cl_2(g) \rightarrow C_2(s) + 4HCl(g)$

(iii) $C_5H_{12}(g) + 8O_2(g) \rightarrow 5CO_2(g) +$

$6H_2O(g)$

ৱব†Pi †KvbiU mivK?

(K) i l ii

(L) i l iii ✓

(M) ii l iii

(N) †KvbiU bv

184| fv½b ev we†hvRb weμqvqñ

(i) enr †KKj nvB†WvKveY †K y` †KKj nvB†WvKveY

Drcv`b Kiv hvq

(ii) W†Rj Rvjw†K †c†Uvj Rvjw†Z c†iYZ Kiv hvq

(iii) A'vj†Kb l nvB†Wv†Rb M'vm c⁻Z Kiv hvq

ৱব†Pi †KvbiU mivK?

(K) i l ii

(L) ii l iii

(M) i l iii

(N) i, ii l iii✓

185| Gi Zvc we†hvRb ev fv½b NUv†j cvlqv †h†Z cv†iñ

(i) C_8H_{16}

(ii) $C_{20}H_{40}$

(iii) H_2

ৱব†Pi †KvbiU mivK?

(K) i l ii

(L) ii l iii

(M) i l iii✓

(N) i, ii l iii

186| A'vj†Kbmg†ni ^ekó'cY weμqv n†jvñ

(i) `nb weμqv

(ii) ms†hvRb weμqv

(iii) c†jgviKiY weμqv

ৱব†Pi †KvbiU mivK?

(K) i l ii

(L) ii l iii

(M) i l iii

(N) i, ii l iii✓

187| A'vj†Kbmg†ni ms†hvRb weμqvqñ

(i) GKK eÜ†bi mío nq

(ii) cigvY ev gjK h³ nq

(iii) †I-eÜ†bi mío nq

ৱব†Pi †KvbiU mivK?

(K) i l ii✓

(L) ii l iii

(M) i l iii

(N) i, ii l iii

188| A'vj†K†bi ^ekó'cY weμqv bq-

(i) ms†kiY

(ii) ms†hvRb

(iii) c†jgviKiY

ৱব†Pi †KvbiU mivK?

(K) i✓

(L) i l ii

(M) ii l iii

(N) i, ii l iii

189| Amaú³ nvB†WvKveY kbv³ Ki†Y e'eüZ nqñ

(i) †evgb `eY (Br-`eY)

(ii) cUv†kqvg cveg'v½v†bu `eY (KMnO<sub>4</sub> `eY)

(iii) jN mvj†dD†iK G†mW `eY

ৱব†Pi †KvbiU mivK?

(K) i l ii✓

(L) i l iii

(M) ii l iii

(N) i, ii l iii

190| A'vjKvBbmg†ni †f\$Z Ae⁻vñ

(i) M'vmxq

(ii) Zi j

(iii) K†Vb

ৱব†Pi †KvbiU mivK?

(K) i

(L) i l ii

(M) ii l iii

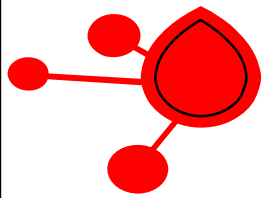
(N) i, ii l iii✓

191| †evgb c†vb cixy'v `†eñ

(i) CH_4

(ii) C_2H_4

(iii) C_2H_2



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১৮৫পি ত্রিকোণমিত্রিক?

- (K) i (L) i i ii
(M) ii i iii✓ (N) i, ii i iii

192| নব্বইতম ব্রহ্মাণ্ডের তত্ত্ব

- (i) $C_2H_{6(g)} + Br_2 \rightarrow C_2H_5Br + HBr$
(ii) $C_2H_{4(g)} + Br_2 \rightarrow C_2H_4Br_2$
(iii) $C_2H_{2(g)} + Br_2 \rightarrow C_2H_2Br_2$

১৮৫পি ত্রিকোণমিত্রিক?

- (K) i i ii (L) ii i iii✓
(M) i i iii (N) i, ii i iii

193| মৌলিক বৈশিষ্ট্য

- (i) ককি
(ii) মৌলিক
(iii) ত্রিকোণমিত্রিক

১৮৫পি ত্রিকোণমিত্রিক?

- (K) i (L) i i ii
(M) ii i iii✓ (N) i, ii i iii

194| ক্রিয়াকারী

- (i) ব্রহ্মাণ্ড
(ii) ব্রহ্মাণ্ড
(iii) ক্রিয়াকারী

১৮৫পি ত্রিকোণমিত্রিক?

- (K) i (L) i i ii✓
(M) i i iii (N) i, ii i iii

195| নব্বইতম ব্রহ্মাণ্ডের তত্ত্ব

- (i) ব্রহ্মাণ্ড
(ii) মৌলিক
(iii) ত্রিকোণমিত্রিক

১৮৫পি ত্রিকোণমিত্রিক?

- (K) i i ii (L) ii i iii
(M) i i iii (N) i, ii i iii✓

196| ডিওক্সিজেনের বৈশিষ্ট্য

- (i) অক্সিজেনের বৈশিষ্ট্য
(ii) পৃথিবীর বৈশিষ্ট্য
(iii) ক্রিয়াকারী (৬০°C-এ গলিত)। GK এর পৃথিবী
Drcb Kiv nq

১৮৫পি ত্রিকোণমিত্রিক?

- (K) i i ii (L) ii i iii✓
(M) i i iii (N) i, ii i iii

197| নব্বইতম ব্রহ্মাণ্ডের তত্ত্ব

- (i) অক্সিজেন, অক্সিজেন মৌলিক ব্রহ্মাণ্ডের তত্ত্ব
(ii) অক্সিজেন, অক্সিজেন, অক্সিজেন। Re Gm+Wi AY
(iii) CO₂। H₂O AY AcmmiZ nq

১৮৫পি ত্রিকোণমিত্রিক?

- (K) i i ii (L) ii i iii✓
(M) i i iii (N) i, ii i iii

198| নব্বইতম ব্রহ্মাণ্ডের তত্ত্ব

- (i) অক্সিজেন
(ii) অক্সিজেন। অক্সিজেন অক্সিজেন। অক্সিজেন
(iii) অক্সিজেন

১৮৫পি ত্রিকোণমিত্রিক?

- (K) i i ii (L) ii i iii
(M) i i iii✓ (N) i, ii i iii

199| ব্রহ্মাণ্ডের তত্ত্ব

- (i) big। bgbxq
(ii) Zvc c+q+M Kqjvq c+jYZ nq
(iii) Gi D`vniY e`vKjvBU

১৮৫পি ত্রিকোণমিত্রিক?

- (K) i i ii (L) ii i iii✓
(M) i i iii (N) i, ii i iii

200| Re Gm+WN

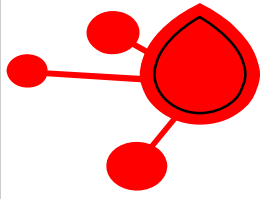
- (i) -COOH gjK_v+K
(ii) -OH gjK_v+K
(iii) R ev A`vjKvBjgjK

১৮৫পি ত্রিকোণমিত্রিক?

- (K) i i ii (L) i i iii✓
(M) ii i iii (N) i, ii i iii

201| {-CH₂-CH(OH)-}_n-

- (i) GKU c+jgi
(ii) Gi bvg c+jB_vbj



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(iii) GwU cwbzZ `exfZ nq

wbPi tKvU mVK?

(K) i l ii

(L) ii l iii

(M) i l iii

(N) i, ii l iii✓

202| tgU tJ UW w`uU iUñ

(i) B_vb tJ i 96% Rjxq `eY

(ii) wg_vbj h³ tiKwUdvBW w`uU iU

(iii) Kw l avZi AvmevecÎ embk KiZ e`eüZ nq

wbPi tKvU mVK?

(K) i l ii

(L) ii l iii ✓

(M) i l iii

(N) i, ii l iii

203| tiKwUdvBW w`uU iUñ

(i) B_vb tJ i 96% Rjxq `eY

(ii) B_vb iK GmWi 6-10% Rjxq `eY

(iii) Jla wk tÍ `veK wntmte e`eüZ nq

wbPi tKvU mVK?

(K) i l ii

(L) ii l iii

(M) i l iii✓

(N) i, ii l iii

204| wg_vb v tJ i c jgviñ

(i) tWijb

(ii) BD iqv digvj WvBW tiRb (tgjvgvBb)

(iii) c`vivj WvBW

wbPi tKvU mVK?

(K) i

(L) i l ii ✓

(M) ii

(N) i, ii l iii

205| wf tBMviñ

(i) B_vb iK GmWi 6-10% Rjxq `eY

(ii) digvj WvDWi 40% Rjxq `eY

(iii) mm l AvPvi msi tY e`eüZ nq

wbPi tKvU mVK?

(K) i l ii

(L) ii l iii

(M) i l iii✓

(N) i, ii l iii

206| ^Re GmWñ

(i) ARe GmWi Zjbvq `ej

(ii) gvb tI l Lv` Dc thvMx Dcv`vb

(iii) Lv` msj tY Preservative wntmte e`eüZ nq

wbPi tKvU mVK?

(K) i l ii

(L) ii l iii

(M) i l iii

(N) i, ii l iii✓

207| 100% dgwjbñ

(i) digvj WvBWi 40% Rjxq `eY tK ejv (AvqZb wntmte)

(ii) gZ cvYx msj tY e`eüZ nq

(iii) N tgi Jla wntmte e`eüZ nq

wbPi tKvU mVK?

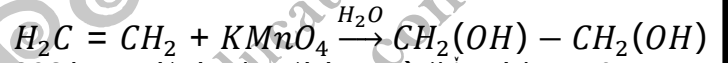
(K) i l ii✓

(L) ii l iii

(M) i l iii

(N) i, ii l iii

wbPi wmuU jÿ Ki Ges 208-209 bs c tki DËi `vIt



208| mgxKi tYi Wv c tki Drcv` thSMUi bvg Kx?

(K) B_vbj

(L) B_wjb MbKj✓

(M) tcvcbj

(N) A`v mUvj WvBW

209| D³ wmuU

(i) GKU RviY wmu

(ii) nvB tWv tbi Amá³ cixÿv

(iii) B_wj tbi wk t vrcv` t b e`eüZ nq

wbPi tKvU mVK?

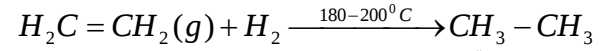
(K) i

(L) i l ii ✓

(M) iii

(N) i, ii l iii

wbPi wmuU jÿ Ki Ges 210-211 bs c tki DËi `vIt



210| wmuUi Drcv`U tKv tkiYi thSM?

(K) A`vj tKb✓

(L) A`vj tKb

(M) A`vj KvbB

(N) A`v t v t gUk thSM

211| wmuU Kx ai tbi?

(K) c jgviKiY

(L) RviY

(M) cvb ms thvRb

(N) nvB tWv tR t bki✓

212| GB ai tbi wmuvi gva`g ^Zwi Kiv hvqñ

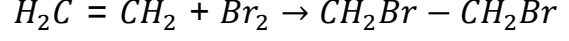
(K) cv ÷ K

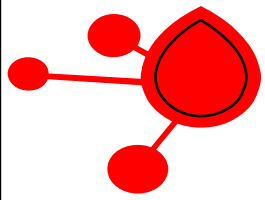
(L) G ÷ vi

(M) gRwib✓

(N) PVC

wbPi wmuU jÿ Ki Ges 213-214 bs c tki DËi `vIt





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213| $Dc\ddot{i}v^3$ $we\mu qvq$ $Drcb$ $th\dot{s}M\ddot{u}$ bvg Kx ?

(K) $Wb\ddot{t}ev\ddot{g}v$ $B\ddot{t}_b$ (L) 1,1 $Wb\ddot{t}ev\ddot{g}v$ $B\ddot{t}_b$

(M) 1,2 $Wb\ddot{t}ev\ddot{g}v$ $B\ddot{t}_b$ ✓ (N) 1,1 $tev\ddot{g}v$ - $tev\ddot{g}v$ $B\ddot{t}_b$

214| D^3 $we\mu qvq\ddot{N}$

(i) $Am\ddot{u}^3$ $nvB\ddot{t}WvKveY$ kbv^3 nq

(ii) $tev\ddot{g}t\ddot{b}i$ eY $web\ddot{o}$ nq

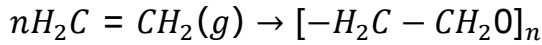
(iii) $\ddot{M}vjvcx$ ev te , bx $e\ddot{t}Yi$ $m\ddot{o}$ nq

$wb\ddot{t}Pi$ $\ddot{t}Kvb\ddot{u}$ $m\ddot{v}K$?

(K) i (L) i i ii ✓

(M) i i iii (N) i, ii i iii

$wb\ddot{t}Pi$ $we\mu qvU$ $j\ddot{y}$ Ki Ges 215-218 bs $c\ddot{t}ki$ $D\ddot{E}i$ $\ddot{v}lt$



215| $Dc\ddot{i}v^3$ $we\mu qvU$ Kx $ai\ddot{b}i$ $we\mu qv$?

(K) $ms\ddot{t}hvRb$ (L) $ckgb$

(M) hZ $c\ddot{v}jgviKiY$ ✓ (N) $Nbxfeb$ $c\ddot{v}jgviKiY$

216| D^3 $we\mu qvi$ Rb Dch^3 $Zvcg\ddot{v}$ I Pvc KZ ?

(K) $60^\circ C$ I $evqPvc$ (L) $100^\circ C$ I 100 $evqPvc$

(M) $200^\circ C$ I 1000 $evqPvc$ ✓

(N) $50^\circ C$ I 10 $evqPvc$

217| $mgxKi\ddot{t}Yi$ evg $\ddot{t}Ki$ $th\dot{s}M\ddot{u}$

(i) $A\ddot{v}jKb$

(ii) $B\ddot{v}_b$

(iii) $Am\ddot{u}^3$ $nvB\ddot{t}WvKveb$

$wb\ddot{t}Pi$ $\ddot{t}Kvb\ddot{u}$ $m\ddot{v}K$?

(K) i (L) i i ii ✓

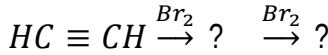
(M) ii i iii (N) i, ii i iii

218| $mgxKi\ddot{t}Yi$ Wb $\ddot{t}Ki$ $th\dot{s}M\ddot{u}$

(K) $GK\ddot{u}$ $G\div vi$ (L) $GK\ddot{u}$ $c\ddot{v}\div K$ ✓

(M) $A\ddot{v}j\ddot{t}Kvnj$ (N) $mveb$

$wb\ddot{t}Pi$ $we\mu qvU$ $j\ddot{y}$ Ki Ges 219-220 bs $c\ddot{t}ki$ $D\ddot{E}i$ $\ddot{v}lt$



219| D^3 $we\mu qvi$ c_g $av\ddot{t}c$ $Drcb$ $th\dot{s}M\ddot{u}$ $ms\ddot{t}KZ$ Kx ?

(K) $CH_2=CHBr$ (L) $CHBr_2-CHBr_2$

(M) $CHBr=CHBr$ ✓ (N) $CBr_2=CBr_2$

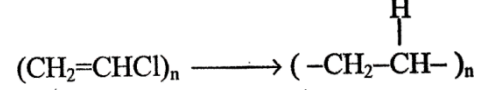
220| D^3 $we\mu qvi$ $\ddot{W}Zxq$ $av\ddot{t}c$ $Drcb$ $th\dot{s}M\ddot{u}$ $bvg\ddot{N}$

(K) 1,2- $Wb\ddot{t}ev\ddot{g}v$ $B\ddot{t}_b$ (L) 2,2- $\ddot{t}Uv\ddot{t}ev\ddot{g}v$ $B\ddot{t}_b$

(M) 1,1- $Wb\ddot{t}ev\ddot{g}v$ $B\ddot{t}_b$ (N) 1,1,2,2- $\ddot{t}Uv\ddot{t}ev\ddot{g}v$

$B\ddot{t}_b$ ✓

$wb\ddot{t}Pi$ $we\mu qvU$ $j\ddot{y}$ Ki Ges 221-224 bs $c\ddot{t}ki$ $D\ddot{E}i$ $\ddot{v}lt$



221| $Dc\ddot{i}v^3$ $we\mu qvU\ddot{N}$

(K) $ms\ddot{t}hvRb$ $we\mu qv$ (L) $ckgb$ $we\mu qv$

(M) hZ $c\ddot{v}jgviKiY$ $we\mu qv$ ✓ (N) $\ddot{n}b$ $we\mu qv$

222| $mgxKi\ddot{t}Yi$ Wb $\ddot{t}K$ $Drcb$ $th\dot{s}M\ddot{u}$ bvg Kx ?

(K) $\ddot{v}fbvBj$ $\ddot{t}KviBW$ (L) $c\ddot{v}j\ddot{v}_b$

(M) $c\ddot{v}jG\div vi$ (N) $c\ddot{v}j\ddot{v}fbvBj$ $\ddot{t}KviBW$ ✓

223| $mgxKi\ddot{t}Yi$ evg $\ddot{t}Ki$ $th\dot{s}M\ddot{u}$ $bvg\ddot{N}$

(K) $\ddot{v}fbvBj$ $\ddot{t}KviBW$ ✓ (L) $c\ddot{v}j\ddot{v}_b$

(M) $c\ddot{v}jG\div vi$ (N) $c\ddot{v}j\ddot{v}fbvBj$ $\ddot{t}KviBW$

224| GB $we\mu qvq$ $Drcv$ $\ddot{u}$ $GK\ddot{u}$

(K) $G\div vi$ (L) $\ddot{v}tgc\ddot{v}\div K$ ✓

(M) $D\ddot{P}Zi$ $A\ddot{v}j\ddot{t}Kb$ (N) $\ddot{v}tgc\ddot{v}m\ddot{v}Us$ $c\ddot{v}\div K$

$wb\ddot{t}Pi$ $we\mu qvU$ $j\ddot{y}$ Ki Ges 225-227 bs $c\ddot{t}ki$ $D\ddot{E}i$ $\ddot{v}lt$

$\ddot{P}I$ $n\ddot{t}e$

225| $Dc\ddot{i}v^3$ $we\mu qvU\ddot{N}$

(K) $ms\ddot{t}hvRb$ $we\mu qv$ (L) $ckgb$ $we\mu qv$

(M) $c\ddot{v}jgviKiY$ $we\mu qv$ ✓ (N) $\ddot{n}b$ $we\mu qv$

226| $Dc\ddot{i}v^3$ $we\mu qvq$ $Drcv\ddot{t}$ i $bvg\ddot{N}$

(K) $c\ddot{v}j\ddot{v}_b$ (L) $b\ddot{v}Bj$

(M) $\ddot{t}Uvi\ddot{t}jb$ (N) $\ddot{t}Wi\ddot{t}jb$ ✓

227| $Dc\ddot{i}v^3$ $we\mu qvi$ evg $\ddot{t}Ki$ $th\dot{s}M\ddot{u}$ $bvg\ddot{N}$

(K) $B\ddot{v}_b$ (L) $B\ddot{v}bj$

(M) $g\ddot{v}_b$ (N) $g\ddot{v}_b\ddot{v}j$ ✓

Aa $\ddot{v}q$ -11t $LwbR$ $m\ddot{u}$ $\ddot{R}evk$

1| $Kqjv$ $\ddot{t}Kvb$ $\ddot{t}g\ddot{t}j$ i $c\ddot{t}f$?

(K) C ✓

(L) H

(M) N

(N) O

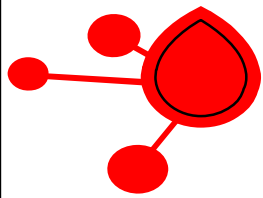
2| $c\ddot{v}K\ddot{u}ZK$ $M\ddot{v}m$ -

(i) mvi $KviLvbvq$ $KvPvgvj$ $wn\ddot{t}m\ddot{t}e$ $e\ddot{e}uZ$ nq

(ii) $mivm\ddot{v}$ $c\ddot{v}jgvi$ $th\dot{s}M$ $Drcv$ $\ddot{t}b$ $e\ddot{e}uZ$ nq

(iii) CH_3OH , $HCHO$ $Drcv$ $\ddot{t}b$ $e\ddot{e}envi$ Kiv nq

$wb\ddot{t}Pi$ $\ddot{t}Kvb\ddot{u}$ $m\ddot{v}K$?



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(K) i l ii

(L) i l iii ✓

(M) ii l iii

(N) i, ii l iii

3| A₂K₂W₂Z₂ t₂c₂t₂W₂j₂q₂g %Z₂t₂j₂i A₂v₂s₂k₂K₂ c₂v₂Z₂t₂b₂ KZ₂
Z₂v₂c₂g₂v₂i₂v₂q₂ LPG c₂w₂ZZ₂ nq?

(K) 20° C ✓

(L) 30° C

(M) 60° C

(N) 70° C

4| t₂c₂t₂W₂j₂q₂t₂gi kZK₂i₂v₂ KZ₂ f₂v₂M₂ LPG?

(K) 1%

(L) 2% ✓

(M) 3%

(N) 4%

5| t₂c₂t₂W₂j₂q₂t₂gi c₂a₂v₂b₂ D₂c₂v₂`v₂b₂-

(i) m₂v₂B₂t₂K₂v₂ A₂`v₂j₂t₂K₂b₂

(ii) A₂`v₂t₂i₂v₂t₂g₂U₂K₂ n₂v₂B₂t₂W₂K₂v₂e₂b₂

(iii) A₂m₂u₂³ n₂v₂B₂t₂W₂K₂v₂e₂b₂

w₂b₂t₂P₂i₂ t₂K₂v₂b₂U₂ m₂i₂V₂K₂?

(K) i l ii ✓

(L) i l iii

(M) ii l iii

(N) i, ii l iii

6| c₂v₂K₂W₂Z₂ M₂`v<sub>2</sub>t<sub>2</sub>mi<sub>2</sub> c<sub>2</sub>a<sub>2</sub>v<sub>2</sub>b<sub>2</sub> D<sub>2</sub>c<sub>2</sub>v<sub>2</sub>`v₂b₂ K₂v₂?

(K) B₂_b

(L) B₂_b

(M) w₂eD₂t₂U₂b₂

(N) w₂g₂t₂_b₂ ✓

7| c₂w₂j₂B₂_w₂j₂t₂bi m₂i₂V₂K₂ m₂s₂t₂K₂Z₂ t₂K₂v₂b₂U₂?

(K) (-CH₂=CH₂-)_n

(L) (-CH₂-CH₂-)_n ✓

(M) (CH₂=CH₂)_n

(N) (-CH₂=CH₂-)_n

8| t₂K₂v₂b₂U₂ A₂m₂u₂³ t₂h₂s₂M₂?

(K) CH₃-CH₂-OH (L) CH₃-CH₂-Cl

CH₃-CH₂

(M)

|

(N) CH₂=CH₂ ✓

CH₃

9| GK₂W₂U₂ A₂`v₂j₂t₂d₂i₂U₂K₂ n₂v₂B₂t₂W₂K₂v₂e₂b₂ K₂L₂b₂ m₂u₂³ n₂v₂B₂t₂W₂K₂v₂e₂b₂
nq?

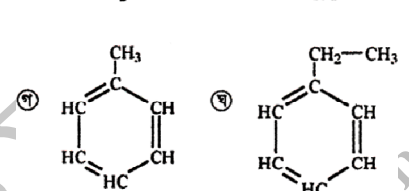
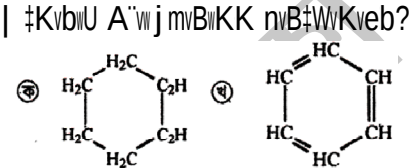
(K) h₂L₂b₂ K₂v₂e₂b₂ w₂k₂K₂t₂j₂i₂ m₂e₂ K₂v₂e₂b₂ c₂ig₂v₂Y₂ G₂K₂K₂ e₂Ü₂b₂ Ø₂v₂i₂v₂
g₂³_v₂t₂K₂ ✓

(L) h₂L₂b₂ K₂v₂e₂b₂ w₂k₂K₂t₂j₂i₂ m₂e₂ K₂v₂e₂b₂ c₂ig₂v₂Y₂ w₂Ø₂-e₂Ü₂b₂ Ø₂v₂i₂v₂ h₂³
_v₂t₂K₂

(M) h₂L₂b₂ K₂v₂e₂b₂ w₂k₂K₂t₂j₂i₂ K₂v₂e₂b₂ c₂ig₂v₂Y₂ G₂K₂K₂ l w₂Ø₂-e₂Ü₂b₂
Ø₂v₂i₂v₂ h₂³_v₂t₂K₂

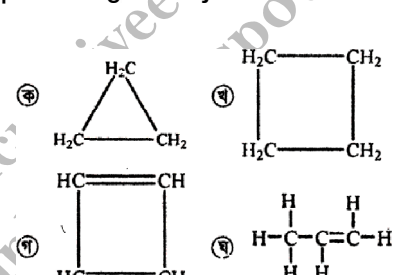
(N) h₂L₂b₂ K₂v₂e₂b₂ w₂k₂K₂t₂j₂i₂ K₂v₂e₂b₂ c₂ig₂v₂Y₂ G₂K₂K₂ l w₂Î₂-e₂Ü₂b₂
Ø₂v₂i₂v₂ h₂³_v₂t₂K₂

10| t₂K₂v₂b₂U₂ A₂`v₂j₂m₂v₂B₂i₂K₂K₂ n₂v₂B₂t₂W₂K₂v₂e₂b₂?



D₂Ë₂i₂t₂ (K) ✓

11| t₂K₂v₂b₂U₂ g₂³ w₂k₂K₂j₂ n₂v₂B₂t₂W₂K₂v₂e₂b₂?



D₂Ë₂i₂t₂ N

12| A₂`v<sub>2</sub>j<sub>2</sub>t<sub>2</sub>K<sub>2</sub>t<sub>2</sub>bi t<sub>2</sub>K<sub>2</sub>v<sub>2</sub>b<sub>2</sub> w<sub>2</sub>g<sub>2</sub>K<sub>2</sub>Y<sub>2</sub>t<sub>2</sub>K<sub>2</sub> c<sub>2</sub>v<sub>2</sub>K<sub>2</sub>W<sub>2</sub>Z<sub>2</sub> M<sub>2</sub>`v₂m₂ e₂j₂v₂ nq?

(K) w₂g₂t₂_b₂ t₂_t₂K₂ w₂eD₂t₂U₂b₂ (C₁-C₄) ch₂ ✓

(L) w₂g₂t₂_b₂ t₂_t₂K₂ t₂n₂t₂·b₂ (C₁-C₆) ch₂

(M) B₂t₂_b₂ t₂_t₂K₂ w₂eD₂t₂U₂b₂ (C₂-C₄) ch₂

(N) B₂t₂_b₂ t₂_t₂K₂ t₂n₂t₂·b₂ (C₂-C₆) ch₂

13| t₂m₂W₂w₂j₂v₂B₂g₂ K₂v₂?

(K) P₂t₂bi₂ `e<sub>2</sub>Y<sub>2</sub>  $\xrightarrow[\text{Ni}]{\Delta}$  (L) i<sub>2</sub>Ø<sub>2</sub> NaOH -Gi<sub>2</sub> `e₂Y₂

(M) M₂v₂p₂ NaOH l Cu -Gi₂ `e₂Y₂

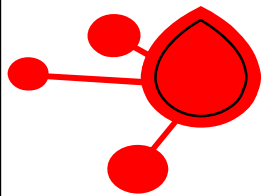
(N) i₂Ø₂ NaOH l CaO -Gi₂ `e₂Y₂ ✓

14| C₃H₆ + H₂ $\xrightarrow[200^\circ\text{C}]{\text{Ni}}$ C₃H₈; w₂e₂m₂q₂w₂U₂i₂ R₂b₂?

c₂t₂q₂v₂R₂b₂x₂q₂ Z₂v₂c₂g₂v₂i₂v₂ K₂Z₂?

(K) 120° C

(L) 130° C



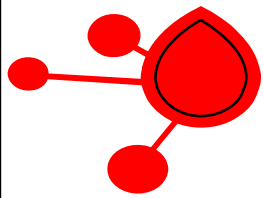
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- (M) 140°C (N) 180°C ✓
- 15| $X + 2\text{H}_2$ Y; X ত্রিমাত্রিক মসৃণ KZ
তরল? (K) $\text{CH}_3 - \text{CH}_2 - \text{CH}_3$
(L) $\text{CH}_3 - \text{C} \equiv \text{CH}$ ✓
(M) $\text{CH}_3 - \text{CH}_2 - \text{CH}_2\text{OH}$
(N) $\text{CH}_3 - \text{CH}_2 - \text{CHO}$
- 16| $\text{A}^{+}\text{B}^{-}\text{C}^{+}\text{D}^{-}\text{E}^{+}\text{F}^{-}\text{G}^{+}\text{H}^{-}\text{I}^{+}\text{J}^{-}\text{K}^{+}\text{L}^{-}\text{M}^{+}\text{N}^{-}\text{O}^{+}\text{P}^{-}\text{Q}^{+}\text{R}^{-}\text{S}^{+}\text{T}^{-}\text{U}^{+}\text{V}^{-}\text{W}^{+}\text{X}^{-}\text{Y}^{+}\text{Z}^{-}$
কি? (K) Zn (L) O_2
(M) Al (N) Pt ✓
- 17| $\text{K}^{+}\text{B}^{-}\text{C}^{+}\text{D}^{-}\text{E}^{+}\text{F}^{-}\text{G}^{+}\text{H}^{-}\text{I}^{+}\text{J}^{-}\text{K}^{+}\text{L}^{-}\text{M}^{+}\text{N}^{-}\text{O}^{+}\text{P}^{-}\text{Q}^{+}\text{R}^{-}\text{S}^{+}\text{T}^{-}\text{U}^{+}\text{V}^{-}\text{W}^{+}\text{X}^{-}\text{Y}^{+}\text{Z}^{-}$
(K) $2\text{CH}_4 \rightarrow \text{C}_2\text{H}_2 + 3\text{H}_2$
(L) $\text{C}_{18}\text{H}_{38} \rightarrow \text{C}_6\text{H}_{14} + 6\text{C}_2\text{H}_2$
(M) $\text{C}_6\text{C}_2 + \text{H}_2\text{O} \rightarrow \text{C}_2\text{H}_2$ ✓
(N) $\text{C}_2\text{H}_6 + \text{O}_2 \rightarrow 2\text{CO}_2 + 3\text{H}_2\text{O}$
- 18| C_6H_6 ত্রিমাত্রিক-
(i) $\text{mgZjxq P}^{+}\text{Q}^{-}\text{R}^{+}\text{S}^{-}\text{T}^{+}\text{U}^{-}$
(ii) $\text{GK}^{+}\text{L}^{-}\text{M}^{+}\text{N}^{-}\text{O}^{+}\text{P}^{-}\text{Q}^{+}\text{R}^{-}\text{S}^{+}\text{T}^{-}\text{U}^{+}\text{V}^{-}\text{W}^{+}\text{X}^{-}\text{Y}^{+}\text{Z}^{-}$
(iii) $\text{A}^{+}\text{B}^{-}\text{C}^{+}\text{D}^{-}\text{E}^{+}\text{F}^{-}\text{G}^{+}\text{H}^{-}\text{I}^{+}\text{J}^{-}\text{K}^{+}\text{L}^{-}\text{M}^{+}\text{N}^{-}\text{O}^{+}\text{P}^{-}\text{Q}^{+}\text{R}^{-}\text{S}^{+}\text{T}^{-}\text{U}^{+}\text{V}^{-}\text{W}^{+}\text{X}^{-}\text{Y}^{+}\text{Z}^{-}$
তরল? (K) i | ii (L) i | iii
(M) ii | iii (N) i, ii | iii ✓
- 19| $\text{fK}^{+}\text{m}^{-}$
(i) $\text{GK}^{+}\text{L}^{-}\text{M}^{+}\text{N}^{-}\text{O}^{+}\text{P}^{-}\text{Q}^{+}\text{R}^{-}\text{S}^{+}\text{T}^{-}\text{U}^{+}\text{V}^{-}\text{W}^{+}\text{X}^{-}\text{Y}^{+}\text{Z}^{-}$
(ii) $\text{ivm}^{+}\text{q}^{+}\text{bK}^{+}\text{f}^{+}\text{v}^{+}\text{e}^{+}\text{LeB}^{+}\text{m}^{+}\text{w}^{+}\text{q}^{+}$
(iii) $\text{Zi}^{+}\text{j}^{+}\text{I}^{+}\text{m}^{+}\text{VK}^{+}\text{tg}^{+}\text{gi}^{+}\text{wgkY}^{+}$
তরল? (K) i | ii (L) i | iii ✓
(M) ii | iii (N) i, ii | iii
- 20| $\text{ROH} \xrightarrow{[\text{O}]} \text{X} \xrightarrow{[\text{O}]} \text{Y}$; $\text{w}^{+}\text{m}^{+}\text{q}^{+}\text{w}^{+}\text{U}^{+}\text{Z}^{-}$
(i) X $\text{GK}^{+}\text{L}^{-}\text{M}^{+}\text{N}^{-}\text{O}^{+}\text{P}^{-}\text{Q}^{+}\text{R}^{-}\text{S}^{+}\text{T}^{-}\text{U}^{+}\text{V}^{-}\text{W}^{+}\text{X}^{-}\text{Y}^{+}\text{Z}^{-}$
(ii) Y $\text{GK}^{+}\text{L}^{-}\text{M}^{+}\text{N}^{-}\text{O}^{+}\text{P}^{-}\text{Q}^{+}\text{R}^{-}\text{S}^{+}\text{T}^{-}\text{U}^{+}\text{V}^{-}\text{W}^{+}\text{X}^{-}\text{Y}^{+}\text{Z}^{-}$
(iii) $\text{w}^{+}\text{m}^{+}\text{q}^{+}\text{K}^{+}\text{I}^{+}\text{Y}^{+}\text{Gi}^{+}\text{w}^{+}\text{m}^{+}\text{q}^{+}\text{G}^{+}\text{v}^{+}\text{i}^{+}\text{Z}^{+}\text{i}^{+}\text{nq}^{+}$
তরল? (K) i | ii (L) i | iii ✓
(M) ii | iii (N) i, ii | iii

- (K) i | ii (L) i | iii
(M) ii | iii (N) i, ii | iii ✓
- 21| $\text{b}^{+}\text{v}^{+}\text{c}^{+}\text{v}^{+}$ -
(i) $\text{Gi}^{+}\text{K}^{+}\text{v}^{+}\text{e}^{+}\text{b}^{+}\text{m}^{+}\text{L}^{+}\text{v}^{+}\text{i}^{+}\text{m}^{+}\text{x}^{+}\text{g}^{+}\text{v}^{+}$ ($\text{C}_7 - \text{C}_4$)
(ii) $\text{Rv}^{+}\text{j}^{+}\text{v}^{+}\text{b}^{+}\text{w}^{+}\text{n}^{+}\text{t}^{+}\text{m}^{+}\text{e}^{+}\text{e}^{+}\text{e}^{+}\text{u}^{+}\text{Z}^{+}\text{nq}^{+}$
(iii) $\text{w}^{+}\text{e}^{+}\text{f}^{+}\text{b}^{+}\text{e}^{+}\text{e}^{+}\text{n}^{+}\text{v}^{+}\text{h}^{+}\text{e}^{+}\text{c}^{+}\text{Zi}^{+}\text{Kv}^{+}\text{P}^{+}\text{v}^{+}\text{g}^{+}\text{v}^{+}\text{j}^{+}$
তরল? (K) i | ii (L) i | iii
(M) ii | iii (N) i, ii | iii ✓
- 22| $\text{D}^{+}\text{I}^{+}\text{x}^{+}\text{c}^{+}\text{K}^{+}\text{i}^{+}\text{M}^{+}\text{v}^{+}\text{t}^{+}\text{m}^{+}\text{i}^{+}\text{c}^{+}\text{a}^{+}\text{v}^{+}\text{b}^{+}\text{t}^{+}\text{h}^{+}\text{S}^{+}\text{m}^{+}\text{w}^{+}\text{U}^{+}\text{t}^{+}\text{K}^{+}\text{v}^{+}\text{b}^{+}\text{a}^{+}\text{i}^{+}\text{b}^{+}\text{i}^{+}$
তরল? (K) $\text{m}^{+}\text{a}^{+}\text{u}^{+}\text{3}$ ✓ (L) $\text{A}^{+}\text{m}^{+}\text{a}^{+}\text{u}^{+}\text{3}$
(M) $\text{A}^{+}\text{v}^{+}\text{i}^{+}\text{v}^{+}\text{g}^{+}\text{U}^{+}\text{K}^{+}$ (N) $\text{A}^{+}\text{v}^{+}\text{i}^{+}\text{m}^{+}\text{v}^{+}\text{B}^{+}\text{i}^{+}\text{K}^{+}\text{K}^{+}$
- 23| $\text{D}^{+}\text{3}$ তরল? (K) i | ii (L) i | iii ✓
(M) ii | iii (N) i, ii | iii
- 24| PVC তরল?
(ক) $\left[\text{H}_2\text{C}-\text{CH}_2 \right]_n$ (খ) $\left[\text{H}_2\text{C}-\underset{\text{CH}_3}{\text{CH}} \right]_n$
(গ) $\left[\text{CH}_2-\underset{\text{Cl}}{\text{CH}} \right]_n$ (ঘ) $\left[\text{CH}-\text{CH}_2 \right]_n$
তরল? (K) i | ii (L) i | iii ✓
(M) ii | iii (N) i, ii | iii
- 25| $\text{t}^{+}\text{g}^{+}\text{j}^{+}\text{v}^{+}\text{g}^{+}\text{v}^{+}\text{B}^{+}\text{b}^{+}\text{c}^{+}\text{i}^{+}\text{j}^{+}\text{g}^{+}\text{v}^{+}\text{i}^{+}\text{i}^{+}\text{D}^{+}\text{c}^{+}\text{v}^{+}\text{v}^{+}\text{b}^{+}\text{t}^{+}\text{K}^{+}\text{v}^{+}\text{b}^{+}\text{i}^{+}\text{U}^{+}$
(K) $\text{BD}^{+}\text{i}^{+}\text{q}^{+}\text{v}^{+}-\text{c}^{+}\text{v}^{+}\text{i}^{+}\text{v}^{+}\text{j}^{+}\text{w}^{+}\text{n}^{+}\text{v}^{+}\text{B}^{+}\text{W}^{+}$
(L) $\text{BD}^{+}\text{i}^{+}\text{q}^{+}\text{v}^{+}-\text{d}^{+}\text{i}^{+}\text{g}^{+}\text{v}^{+}\text{j}^{+}\text{w}^{+}\text{n}^{+}\text{v}^{+}\text{B}^{+}\text{W}^{+}$ ✓
(M) $\text{BD}^{+}\text{i}^{+}\text{U}^{+}-\text{c}^{+}\text{v}^{+}\text{i}^{+}\text{v}^{+}\text{j}^{+}\text{w}^{+}\text{n}^{+}\text{v}^{+}\text{B}^{+}\text{W}^{+}$



(iii) $b \nabla g - \sharp W i \nabla j b$



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১৮পি ১৮বিউ মিৱক?

(K) i l ii

(L) i l iii

(M) ii l iii

(N) i, ii l iii ✓

Aa'q-12 t Avg' i Rxe'b imvqb

37 | $\text{cvK}^- \text{w} \text{j} \text{z} \text{tKv} \text{GmW} \text{Drcb} \text{nq?}$

(K) HNO_3

(L) H_2SO_4

(M) HClO_4

(N) HCl ✓

38 | $\text{tKv} \text{GmW} \text{GbRvB} \text{gi} \text{w} \mu \text{q} \text{Zi} \text{v} \text{SZ} \text{K} \text{i} \text{c} \text{ic} \text{cv} \text{tK} \text{mnvqZv} \text{K} \text{i} \text{?}$

(K) $\text{nvB} \text{tW} \text{tK} \text{wi} \text{K} \text{GmW}$

(L) $\text{A} \text{v} \text{gvB} \text{t} \text{bv} \text{GmW}$

(M) $\text{B} \text{v} \text{b} \text{qK} \text{GmW}$

(N) $\text{K} \text{ve} \text{bK} \text{GmW}$ ✓

39 | $\text{w} \text{f} \text{tB} \text{M} \text{v} \text{i} \text{B} \text{v} \text{b} \text{qK} \text{GmW} \text{t} \text{w} \text{c} \text{ig} \text{vY} \text{KZ?}$

(K) 3.5 – 4.0%

(L) 5 – 6%

(M) 5.5 – 6%

(N) 6 – 10% ✓

40 | $\text{tKv} \text{b} \text{U} \text{Re} \text{GmW?}$

(K) NH_3

(L) H_2SO_4

(M) CH_3COOH ✓

(N) H_2CO_3

41 | $\text{w} \text{b} \text{tPi} \text{tKv} \text{mv} \text{aviY} \text{w} \mu \text{q} \text{Ui} \text{g} \text{v} \text{a} \text{t} \text{g} \text{R} \text{COOH} \text{Drcb} \text{Kiv} \text{m} \text{ae?}$

(K) $\text{R} \text{O} \text{R}' + \text{H}_2\text{O} \rightarrow \text{R} \text{COR}' + \text{R} \text{OH}$

(L) $\text{R} \text{OH} + \text{K}_2\text{Cr}_2\text{O}_7 \xrightarrow{\text{H}_2\text{SO}_4} \text{R} \text{COOH}$

(M) $\text{R} \text{COOH} + \text{PCl}_3 \rightarrow \text{CH}_3\text{COOH} + \text{POCl}_3$

(N) $\text{R} \text{O} \text{R}' + \text{ROH} \rightarrow \text{R} \text{COOH} + \text{H}_2\text{O}$ ✓

42 | $\text{K} \text{v} \text{j} \text{w} \text{mqg} \text{K} \text{ve} \text{t} \text{b} \text{U} \text{tK} \text{Zvc} \text{w} \text{t} \text{j} \text{Drcb} \text{nq-}$

(i) $\text{A} \text{w} \text{m} \text{be} \text{v} \text{cK} \text{M} \text{v} \text{m}$

(ii) $\text{avZe} \text{t} \text{g} \text{S} \text{j}$

(iii) $\text{avZe} \text{A} \cdot \text{vBW}$

$\text{w} \text{b} \text{tPi} \text{tKv} \text{b} \text{U} \text{m} \text{VK?}$

(K) i l ii

(L) i l iii ✓

(M) ii l iii

(N) i, ii l iii

43 | $\text{t} \text{m} \text{w} \text{q} \text{g} \text{nvB} \text{tW} \text{tRb} \text{K} \text{ve} \text{t} \text{b} \text{U} \text{tK} \text{Zvc} \text{w} \text{t} \text{j} \text{-}$

(i) $\text{K} \text{vco} \text{K} \text{v} \text{P} \text{v} \text{t} \text{m} \text{w} \text{cv} \text{lq} \text{v} \text{h} \text{vq}$

(ii) 1 $\text{AvY} \text{w} \text{eK} \text{f} \text{i} \text{w} \text{w} \text{k} \text{t} \text{h} \text{SM} \text{cv} \text{lq} \text{v} \text{h} \text{vq}$

(iii) 1 $\text{t} \text{g} \text{v} \text{j} \text{cv} \text{b} \text{Drcb} \text{nq}$

$\text{w} \text{b} \text{tPi} \text{tKv} \text{b} \text{U} \text{m} \text{VK?}$

(K) i l ii

(L) i l iii

(M) ii l iii

(N) i, ii l iii ✓

44 | $\text{tKv} \text{g} \text{j} \text{cv} \text{bxq} \text{n} \text{j} \text{-}$

(i) $\text{cv} \text{b} \text{tZ} \text{K} \text{ve} \text{b} \text{W} \text{B} \text{A} \cdot \text{vBW} \text{eY}$

(ii) $\text{cv} \text{b} \text{tZ} \text{w} \text{P} \text{v} \text{bi} \text{eY}$

(iii) $\text{GbRvB} \text{tgi} \text{w} \mu \text{q} \text{Zi} \text{v} \text{w} \text{ZK} \text{vi} \text{x}$

$\text{w} \text{b} \text{tPi} \text{tKv} \text{b} \text{U} \text{m} \text{VK?}$

(K) i l ii

(L) i l iii

(M) ii l iii

(N) i, ii l iii ✓

45 | $\text{t} \text{m} \text{w} \text{v} \text{A} \text{v} \text{m} \text{Gi} \text{R} \text{j} \text{xq} \text{e} \text{tY-}$

(i) $\text{y} \text{vi} \text{av} \text{Zi} \text{Av} \text{qb} \text{Drcb} \text{nq}$

(ii) $\text{cv} \text{B} \text{Av} \text{qb} \text{KOH} \text{n} \text{tZ} \text{cv} \text{lq} \text{v} \text{h} \text{vq}$

(iii) $\text{cv} \text{B} \text{Av} \text{qb} \text{L} \text{v} \text{je} \text{tY} \text{tK}$

$\text{w} \text{b} \text{tPi} \text{tKv} \text{b} \text{U} \text{m} \text{VK?}$

(K) i l ii ✓

(L) i l iii

(M) ii l iii

(N) i, ii l iii

46 | $\text{RX}_{(1)} + \text{KOH}_{(alc)} \rightarrow \text{A} + \text{KX} + \text{H}_2\text{O}; \text{A} \text{t} \text{tK} \text{m} \text{ivm} \text{i}$
 $\text{Drcv} \text{b} \text{m} \text{ae-}$

(i) $\text{A} \text{v} \text{j} \text{w} \text{Kb}$ (ii) $\text{A} \text{v} \text{j} \text{tK} \text{v} \text{n} \text{j}$ (iii) $\text{d} \text{v} \text{U} \text{GmW}$

$\text{w} \text{b} \text{tPi} \text{tKv} \text{b} \text{U} \text{m} \text{VK?}$

(K) i l ii ✓

(L) i l iii

(M) ii l iii

(N) i, ii l iii

$\text{w} \text{b} \text{tPi} \text{w} \mu \text{q} \text{mg} \text{xKiY} \text{Øq} \text{j} \text{y} \text{K} \text{t} \text{iv} \text{Ges} \text{47} \text{l} \text{48} \text{bs} \text{c} \text{t} \text{ki}$
 $\text{D} \text{E} \text{i} \text{v} \text{It}$

(i) $\text{HC} \equiv \text{CH} \xrightarrow[20\% \text{H}_2\text{SO}_4]{20\% \text{H}_2\text{SO}_4} \text{X}$

(ii) $\text{X} \xrightarrow{\text{Mn}^2, 60^\circ \text{C}} \text{Y}$

47 | $\text{Y} \text{t} \text{h} \text{SM} \text{U} \text{K} \text{x?}$

(K) $\text{CH}_3\text{CH}_2\text{OH}$

(L) CH_3CHO

(M) CH_3COOH ✓

(N) C_2H_4

48 | $\text{D} \text{t} \text{x} \text{c} \text{tKi} \text{w} \mu \text{q} \text{v} \text{X} \text{-}$

(i) $\text{t} \text{h} \text{tM} \text{-CHO} \text{g} \text{jK} \text{i} \text{t} \text{q} \text{tQ}$

(ii) $\text{t} \text{h} \text{SM} \text{U} \text{i} \text{R} \text{j} \text{xq} \text{eY} \text{A} \text{p} \text{agx}$

(iii) $\text{t} \text{h} \text{SM} \text{U} \text{w} \text{f} \text{tB} \text{M} \text{v} \text{i} \text{w} \text{n} \text{t} \text{m} \text{e} \text{e} \text{e} \text{üZ} \text{nq}$

$\text{w} \text{b} \text{tPi} \text{tKv} \text{b} \text{U} \text{m} \text{VK?}$

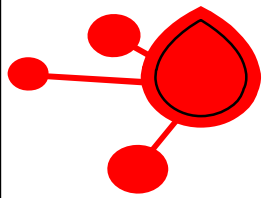
(K) i l ii ✓

(L) i l iii

(M) ii l iii

(N) i, ii l iii

49 | $\text{M} \text{v} \text{m} \text{w} \text{K} \text{v} \text{t} \text{i} \text{i} \text{g} \text{j} \text{D} \text{cv} \text{v} \text{b} \text{tKv} \text{b} \text{U?}$



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(K) CO_2

(L) NH_3 ✓

(M) SO_2

(N) NO_2

50 | $\text{K}^+ \text{CO}_3^{2-}$ মনে হবে K^+ এর আকার কত?

(K) K^+ এর আকার CO_3^{2-} এর আকারের সমান

(L) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড় ✓

(M) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে ছোট

(N) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড়

51 | $\text{K}^+ \text{CO}_3^{2-}$ মনে হবে K^+ এর আকার কত? K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড়

(K) $RONa$

(L) $R-\text{C}_6\text{H}_5-\text{SO}_2\text{Na}$ ✓

(M) $RCOONa$

(N) $RCOOSO_3Na$

52 | $\text{K}^+ \text{CO}_3^{2-}$ মনে হবে K^+ এর আকার কত?

(K) K^+ এর আকার CO_3^{2-} এর আকারের সমান

(L) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড় ✓

(M) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে ছোট

(N) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড়

53 | $\text{K}^+ \text{CO}_3^{2-}$ মনে হবে K^+ এর আকার কত?

(K) 1

(L) 2 ✓

(M) 3

(N) 4

54 | $\text{K}^+ \text{CO}_3^{2-}$ মনে হবে K^+ এর আকার কত? K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড়

(K) K^+ এর আকার CO_3^{2-} এর আকারের সমান

(L) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড় ✓

(M) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে ছোট

(N) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড়

55 | $\text{K}^+ \text{CO}_3^{2-}$ মনে হবে K^+ এর আকার কত?

(K) $R-\text{CH}_2-\text{O}-\text{SO}_3^- \text{Na}^+$

(L) $R-\text{CH}_2-\text{O}-\text{SO}_3^- \text{Na}^+$ ✓

(M) $R-\text{CH}_2-\text{O}-\text{SO}_3^- \text{Na}^+$

(N) $R-\text{CH}_2-\text{O}-\text{SO}_3^- \text{Na}^+$

(K) $R-\text{CH}_2-\text{O}-\text{SO}_3^- \text{Na}^+$

(L) $R-\text{CH}_2-\text{O}-\text{SO}_3^- \text{Na}^+$ ✓

(M) $R-\text{CH}_2-\text{O}-\text{SO}_3^- \text{Na}^+$

(N) $R-\text{CH}_2-\text{O}-\text{SO}_3^- \text{Na}^+$

56 | $\text{K}^+ \text{CO}_3^{2-}$ মনে হবে K^+ এর আকার কত?

(K) K^+ এর আকার CO_3^{2-} এর আকারের সমান

(L) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড় ✓

(M) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে ছোট

(N) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড়

57 | $\text{K}^+ \text{CO}_3^{2-}$ মনে হবে K^+ এর আকার কত?

(i) K^+ এর আকার CO_3^{2-} এর আকারের সমান

(ii) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড় ✓

(iii) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে ছোট

K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড়

(K) i i ii

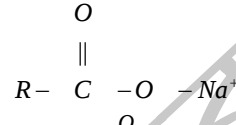
(L) ii i iii ✓

(M) i i iii

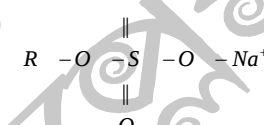
(N) i, ii i iii

58 | $\text{K}^+ \text{CO}_3^{2-}$ মনে হবে K^+ এর আকার কত?

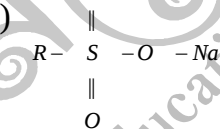
(i)



(ii)



(iii)



K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড়?

(K) i i ii

(L) i i iii

(M) ii i iii ✓

(N) i, ii i iii

59 | $\text{K}^+ \text{CO}_3^{2-}$ মনে হবে K^+ এর আকার কত?

(i) K^+ এর আকার CO_3^{2-} এর আকারের সমান

(ii) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড়

(iii) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে ছোট

K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড়?

(K) i i ii ✓

(L) i i iii

(M) ii i iii

(N) i, ii i iii

60 | $\text{Ca}(\text{OH})_2 + \text{Cl}_2 \xrightarrow{40^\circ\text{C}} \text{X} + \text{H}_2\text{O}$; X এর আকার কত?

(i) K^+ এর আকার CO_3^{2-} এর আকারের সমান

(ii) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড়

(iii) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে ছোট

K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড়?

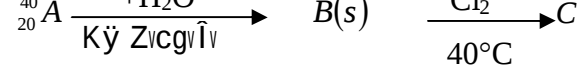
(K) i i ii

(L) i i iii ✓

(M) ii i iii

(N) i, ii i iii

K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড়?



61 | K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড়?

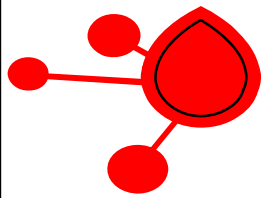
(K) K^+ এর আকার CO_3^{2-} এর আকারের সমান

(L) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড় ✓

(M) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে ছোট

(N) K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড়

62 | K^+ এর আকার CO_3^{2-} এর আকারের চেয়ে বড়?



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(K) $Ca(OCl)Cl_2$

(L) $Ca(OCl)_2Cl$

(M) $Ca(OCl)Cl$ ✓

(N) $Ca_2(OCl)Cl$

63| $D \rightarrow L$ মনোমিউটার-

(i) $A \rightarrow B$ উদ্ভিদে K তৈরি C বিম $C \rightarrow V$ $C \rightarrow V$ $C \rightarrow V$

nq

(iii) $C \rightarrow B$ উদ্ভিদে C বিম $C \rightarrow V$ $C \rightarrow V$ $C \rightarrow V$

(K) ii ✓ (L) iii (M) i l iii (N) ii l iii

64| Na_2CO_3 (K) Na_2CO_3 (L) $MgCO_3$

(M) $CaCO_3$ ✓ (N) K_2CO_3

65| 2010 মনোমিউটার h^3 $FDCA$ dj $C \rightarrow V$ $C \rightarrow V$

(K) $K \rightarrow V$ $K \rightarrow V$ $K \rightarrow V$ (L) $K \rightarrow V$ $K \rightarrow V$ $K \rightarrow V$

(M) $B \rightarrow V$ $B \rightarrow V$ ✓ (N) $A \rightarrow V$ $A \rightarrow V$ $A \rightarrow V$

66| Rx Av bi j ve i U i bg bv , $C \rightarrow V$ RK Vj U m si y t Y

(K) CH_3CHO (L) $HCHO$ ✓

(M) CH_3COOH (N) $CH_3CH_2CH_2OH$

67| dig wj tb kZ Kiv KZ fM dig vj Wnv BW $_v$ K ?

(K) 6% (L) 10%

(M) 20% (N) 40% ✓

68| Hg^{+2} Av qb -

(i) j f v i i y Z K i

(ii) tc U bi K vh ug en NU vq

(iii) K v Y i t v M m o K i

bi Pi t K vb U m VK ?

(K) i l ii ✓ (L) i l iii

(M) ii l iii (N) i, ii l iii

bi Pi D i xc Ki U C ov Ges 69 l 70 bs C i ki D Ei $`v$ I t

$(NH_2)_2C = 0 \xrightarrow{BDi+qR} 2X + CO_2$

$X + H_2O \rightleftharpoons Y (Rjxq)$

69| D i xc Ki X h SM t K vb U ?

(K) NH_4OH (L) NH_3 ✓

(M) $(NH_4)_2CO_3$ (N) CH_4

70| D i xc Ki U C ov Ges

(i) Y ve R v K C $`v$ $_$

(ii) Y G i R j xq $`eY$ y vi agx C K Zi

(iii) Y h SM U C ov Z Av sk K f ve ve q m RZ $_v$ K bi Pi t K vb U m VK ?

(K) i l ii

(L) i l iii

(M) ii l iii

(N) i, ii l iii ✓

71| BD i q v m vi bi B U v R bi kZ Kiv C ig vY KZ ?

(K) 26

(L) 36

(M) 46 ✓

(N) 56

72| U q t j U K bi i gj D cv $`v$ b t K vb U ?

(K) $NaOH$ ✓

(L) Na_2CO_3

(M) $NaCl$

(N) Na_2S

bi Pi D i xc Ki U C ov Ges 73 l 74 bs C i ki D Ei $`v$ I t

X G K U h SM h NH_3 G $`eY$   $`ex$ fZ nq bv $|$ Y G K U h SM

h v j v K se v bj j U g m t cc v i i eY C ie Zb K i bv , Z v m E I

Y h SM i $`eY$   $h$   $SM$   $i$   $`eY$ bi j j v j P ev vgx e t Yi $`eY$ D rcb nq

73| D i xc Ki X h SM U K x ai bi h SM ?

(K) As

(L) y vi

(M) y vi K ✓

(N) bi t c y

74| D i xc Ki Y h SM U -

(i) bi t c y h SM

(ii) Fe^{3+} Av qb ve k o h SM

(iii) j N NH_3 $`eY$ i m t $_$ ve m q K i

bi Pi t K vb U m VK ?

(K) i l ii

(L) i l iii

(M) ii l iii

(N) i, ii l iii ✓



পাঠ্য বইয়ের বিকল্প কোন বই হতে পারে না।

বিনামূল্যে বিতরণের জন্য

হে প্রভু তুমি আমাদের
সকলকে বিজ্ঞানময় জ্ঞান দাও



বিডি কমপ্লেক্স এর সহযোগিতায়।