

छत्तीसगढ़ माध्यमिक शिक्षा मण्डल, रायपुर



j | k; u

d {kk XII oha

i z u cd

1/0 | k/pr bdkb1/2

NÙkhl x<+ek/; fed f'k{k e.My] jk; i ġ

# vked[k

jk"Vh; i kB; p; kZ dh : i j s [kk 2005 eaftu fpUrkvka dk mYyq[k fd; k x; k gSml ds rkj rE; ea in s k dsgkbLdny , oagk; j l ds Mjh ea v/; ; u djusokysfo | kFFkZ; ka ds l aak ea fopkj djus , oa mudh l eL; kvka dk l ek/kku djus grq NRRhl x<+ek/; fed f'k{k e.My iz Ru'khy gS rkfd 'kSf.kd y{; ka dh i kfr gks l ds , oa f'k{k dh xqkoRrk ea l qkkj gks l dA

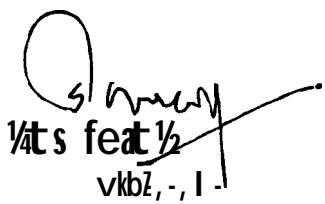
ijh{kkvka ds l e; fo | kFFkZ; ka ds eu ea fplrk , oa Hk; mRiUu gsrk gSfd ijh{k dS h gksch\ ijh{k ea fd l idkj izu i nS tk; a s dks l k izu ijh{k ds fy, egRo i w k Z gks l drs gA bl grq foxr o"kk ea e.My iz kl jr jgk gA fo"K; okj ekMy izu i = dks vc NRRhl x<+ek/; fed f'k{k e.My ds ekU; rk i ktr fo | ky; ka ea Hkst us ds l kFk&l kFk mlGa e.My ds os l kbV ea ykM fd; k tk; s kA ijh{k ds Hk; , oa ru ko l seDr j [kus ds fy, e.My }kjk gkbZ Ldny , oagk; j l ds Mjh ds fo | kFFkZ; ka ds fy, fo"K; okj d{k 9oha l s 12oha rd izu cd r s kj fd; k x; k gA izu cd ea ijEijxR izuka ds vfrjDr uohu izuka dk l eko s k fd; k x; k gA izu cd bdkb b k j , oa e.My dh ijh{k ; kstuk ds vu d kj r s kj fd; k x; k gS ft l l s vPNs vad i ktr djus ds l kFk&l kFk ijh{k kFFkZ; ka ea fo"K; ds ifr : fp mRiUu gkschA

izu cd ds vHkko ea f'k{k d k i k f' u d k a v k s fo | kFFkZ; ka ds i kB; i l rd ds vUr ea fn; s x, ijEijxR izuka ij fuHk j jguk i M f k gA bl l s fo"K; dk eW; ka du 0; fDrijd (Subjective) gks tkrk gS rFk foHkUu 'kSf.kd m s ; ka ds vk/kj ij eW; ka du ugha gsrk gA bl h vko'; drk dks /; ku ea j [krs gq e.My us gkbLdny 1/9oha 10oha rFk gk; j l ds Mjh 1/11oha 12oha ds l Hk fo"K; ds izu cd dk fuekZk fd; k gA bl izu cd l s f'k{k d k a , oa fo | kFFkZ; ka ea fur uohu izuka ds fuekZk dh vHk: fp mRiUu gkschA

izu cd ea fo"K; dh mi yC/k 'kSf.kd l kexh dks 'k k f e y fd; k x; k gA bl ea uohu ekSyd izuka d k s fo"K; oLrj f'k{k.k ds m s ; ] dfBukbZ Lrj v s vadu dh xqkoRrk ds vu d kj l q a fBr djds j [k x; k gA izu cd ea e.My dh ijh{k ; kstuk ds vu d kj vfry? k m U k j h ; ] y? k m U k j h ; , oa nh? k m U k j h ; izuka dk l eko s k fd; k x; k gA ifr; ksch ijh{k ds fy, vH; kl grq oLrj u"B izuka dk Hk l eko s k izu cd ea fd; k x; k gA ft l l s ifr; ksch ijh{k kvka ds vH; kl ea l gk; rk feyschA ifrnu] ifr l l r g ] ifrekg v s i fro"Kz uohu izuka ds ckjs ea fo | kFFkZ; k f'k{k d k i k f' u d k ijh{k d k a v k s l k e U ; tu l s fo"K; okj e.My uohu izuka dks vkef=r fd; k tkoskA vki ds }kjk i s "kr fo"K; okj uohu izuka dks tkM d j i fro"Kz izu cd dk l a k s k u e.My }kjk fd; k tkosk ] ft l l s izu cd vf/kd ifjiw k v s v k / k f u d r e g k r s j g A

ep-svk'kk gSfd e.My }kjk tkjh izu cd fo | kFFkZ; k f'k{k d k i k f' u d k a , oa ijh{k d k a ds fy, mi ; ksch fl ) gkschA

'k k d k e u k v k a l f g r --



I fpo

N-x- ek/; fed f'k{k e.My] jk; ij

bdkbz & 1

## i jek.kqI j puk

vfr y?kqmYkjh;

02 vød

- 1-  $XeF_4$  dh vkdfir D; k gkrh gS\ ml ea  $Xe$  ds ikl fdrus, dkdh byDVku ; ðe gð\
- 2- ukMh; ry o ukMh; I rg ea varj crkb, \ U
- 3-  $O_2^+, O_2, O_2^-, O_2^{2-}$  ds LFkkf; Ro dk Øe nhft, \ U
- 4- fl Xek , oa i kbZ cak ea dkbZ nks vlurj fyf[k, \ U
- 5- MhtujV vkfcM/y D; k gS\ K
- 6- fuEufyf[kr dks mudsc<rs gq LFkkf; Ro ds Øe ea 0; ofLFkr dhft, &  $NO, NO^+, NO^{2+}, NO^-$  U
- 7- theu i Hkko D; k gð bl dk I cak fdl Dok.Ve I ð; k I sgS\ U

y?kqmYkjh; i zu

03 vød

- 1- vkcaKh o ifrcakh vkf.od d{kda ds cuus dks fp= }kj k I e>kb, \ s
- 2-  $N_2$  dh fuf"Ø; i dfr dks v.kp(kd fl ) kr ds vk/kkj ij I e>kb, \ U
- 3- ifrpfc dh; o vupfc dh; 0; ogkj I svki D; k I e>rs gð , d mnkgj.k ndj I e>kb, \ U
- 4- cak u Øe fdl sdgrsgð  $N_2$  v.kp dscaku Øe dh x.kuk grqI ðe yhf[k, \ U
- 5-  $VBT$  o  $MOT$  dh ryuk dhft, \ U

- 6-  $NO^+$  rFkk  $N_2$  eaczk dksV I eku gSD; ka \ U
- 7-  $CO_2$  rFkk  $SO_2$  dh I j puk I eku ugha gSD; ka \ s
- 8-  $CO_3^{--}$  vk; u eady byDVku dh x.kuk dhft, \ U
- 9-  $2Px$  , oaa  $3dx^2 - y^2$  d{kdkadsfy,  $n, l, m$  dseku D; k gS \ U
- 10- Åtkz vkjs[k }kjk vkDI htU v.kq dh ij kekusVd xqk dks I e>kb, \ s

**y?kq mYkj; i'z u**

**04 vad**

- 1- fuEufyf[kr v.kq/ka ds dnh; ijek.kq/ka dh I dj.k voLFkk cukbz, & U  
 (i)  $CO_2$       (ii)  $SO_2$       (iii)  $SF_6$       (iv)  $PCl_5$
- 2- ijek.kq d{kdkads I a kstu dh pkj 'krfuf[k, \ U
- 3-  $N_2$  dh fo; kstu mtkz  $N_2^+$  I svf/kd gStcfd  $O_2$  dh fo; kstu mtkz  $O_2^+$  I sde gSD; ka \ U

**nh?kz mYkj; i'z u**

**05 vad**

- 1-  $Ne_2$  dsdkYi fud v.kqdk v.kq d{k d vkjs[k cukb, rFkk crkb, fd ; g D; ka ugha curk gS \ s
- 2-  $H_2^+, H_2, He_2^+, He_2^+$  ds v.kq/ka dk cu/ku Øe rFkk v.kq d{k d fol; kl , oe-czku crkb, \ A

## bdkbz & 2

### Bkd voLFkk (Solid State)

vfr y?kq mŸkjh; i zu

02 vød

- 1- Bkd ds dkbz rhu Hkk\$rd xqk fyf[k, \ K
- 2- fØLVyh; rFkk vfØLVyh; Bkd earhu vŸrj fyf[k, \ U
- 3- I jy ?kuh; ] vŸr% dŸŸnr ?kuh; ] Qyd dŸŸnr ?kuh; dh I ello; I Ÿ; k D; k gksh \ K
- 4- f=T; k vuq kr D; k gS \ K
- 5- 'kk/dh rFkk ŸŸdy =qV eankv vŸrj fyf[k, \ U

y?kq mŸkjh; i zu

03 vød

- 1- Bkd ka ea vfrpkydrk dks I e>kb, \ U
- 2- NaCl jkkd I KYV dh I j puk cukb, \ s
- 3- Bkd ka ea f=foe ea I d adyu ds sgkrk gSLi "V dhft, \ K
- 4- vŸrjkdks kh fjfDr; k D; k gS; s fdrus izdkj dh gkrh gS I e>kb, \ U
- 5- vkf.od fØLVy dh i fjHkk"kk fyf[k, rFkk mnkgj.k nhft, \ K

y?kq mŸkjh; i zu

04 vød

- 1- vk; fud fØLVy dh vi wkzrk dk D; k vFkz gŸ i ed[k vi wkzrk dk vFkz fyf[k, \ K

- 2- /kukRed fopyu , oa\_\_ .kkRed fopyu ea dkbZ nks vUlj fyf[k, \ U
- 3- bdkbZ I sy I svki D; k I e>rs gks \ fofHkUu ?kuh; bdkbZ I sykaea i fr bdkbZ I sy ea tkyd fclnqka dh x.kuk dhft, \ K
- 4- NaCl rFkk CsCl dh I j puk cukbZ, \ S
- 5- Ýdy =qV dks I fp= I e>kb, \ S

nh?kz mYkj; i z u

05 v ad

- 1- fØLVykaea fclnq=qV; k; D; k gS; sfd rus i zkj dh gksh g\$ o.ku dhft, \ K
- 2- (i) Bkd ka ea I q adyu I e>kb, \ U  
(ii) f=T; k vuq kr dks Li "V dhft, \ U
- 3- fofHkUu i zkj ds fØLVy fudk; ka dk o.ku dhft, \ K

**bdkbz & 3**  
**foy; u (Solution)**

**vfr y?kq mYkjh; i zu**

**02 vð**

- 1- ukežyrk dh i fjHkk"kk fyf[k, \ K
- 2- ?kfyf dseky i Hkk t dh i fjHkk"kk fyf[k, \ K
- 3- /kukRed fopyu , oa \_\_.kkRed fopyu ea dkbz nks vrj fyf[k, \ U
- 4- jkÅYV ds vuđ kj l rlr foy; u dh i fjHkk"kk fyf[k, \ K
- 5- DoFkukad mlU; u dh i fjHkk"kk , oa l = fyf[k, \ K
- 6- i Hkk t h vkl ou ea vkn'kz foy; u i gys i Fkd gkrk gSD; ka \ U
- 7- , d , d svkn'kz foy; u dk uke crkb, ftl svki tkursgA K
- 8- gujh dsfu; e dk nsud thou eami; ks fyf[k, \ A
- 9- foi jhr i jkl j.k dc gkrk gsvks bl dk , d vuiž ks fyf[k, \ A
- 10- vk; fud Bkl dc vfoys gkrsga \ U

**y?kq mYkjh; i zu**

**03 vð**

- 1- ok"i nkc eavoueu , oa ok"i nkc eavki s{k d voueu dh i fjHk"kk nhft , \ K
- 2- fLFkj DokFkh ?kky fdl s dgrs gS bl ds nks mnkgj.k fyf[k, \ U
- 3- 5-85 xte *NaCl* dks 200ml ty eafoyš fd; k x; k gS foy; u dh ekjyrk Kkr dhft , A U

- 4- I e>kb, & K
  - (i) jkmYV dk fu; e
  - (ii) vkn'kz foy; u
- 5- jkÅYV dsfu; e eagkusokys/kukRed , oa\_\_ .kkRed fopyu dks j[ kfp= ds }kjk inf'kz dhft, A A
- 6- mPp DoFku ,ft; k/ki dsfy, rki I akVu oØ [kfp, \ A
- 7- 18°C ij Xyudkst (C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>) ds 5% foy; u dk ijkl j.k nkc Kkr dhft, A A
- 8- 2.0 gm NaOH dks ,d fyVj ty ea?kkyk x; k gS?kky dh eksyjr k vkj ukezyrk dh x.kuk dhft, A U
- 9- fuEu DoFku ,ft; k/ki dsfy, rki I akVu oØ [kfp A A

nh?kz mYkj; i'z u

4 vd

- 1- fgekd voueu dh ifjHkk"kk fyf[k, A , d foy; u ea 3.0 gm ; ij; k 100ml ty eafoy; gA foy; u dsfgekd eagkusokysvoueu dks Kkr dhft, A K
- 2- eksyyrk , oa eksyjr ea D; k varj gS\ rki ea ifjorU djus l foy; u ds eksyyrk , oa eksyjr ij D; k iHkko iMfk gS\ U
- 3- DoFkukad mlu; u l sD; k I e> rsgSbl ds }kjk fdl h foy; i nkFkz dk vkf.od nØ; eku dS s Kkr fd; k tkrk gA U
- 4- ijkl j.k nkc uki us dh cdZys , oagkVZys fof/k dk o.kZu dhft, \ A
- 5- ijkl j.k rFk ijkl j.k nkc dh ifjHkk"kk crkrsgq ijkl j.k dk tSod egRo dk o.kZu dhft, \ K



- 1- (A) fgek?d ds voueu dk mi ; kx crkb?, \ U
- (B) , d ekVj dkj ds jSM; Vj ea 10 yhVj ty Hkjk gS tc rki  $10^{\circ}C$  (263K) gS rc ml dkj ds jSM; Vj ds ty eafdrak , fFkyhu XykbdkWj feyk; k tkuk pkfg, A
- ty dk  $K_f = 1.86K Kg mol^{-1}$
- , fFkyhu XykbdkWj vkf.od n?; eku =  $62g mol^{-1}$
- 2- (i) vi I kekl; vkf.od n?; eku D; k gS \ U
- (ii) foyS ds v.kvka ds I xqku rFkk foyS ds v.kvka dk fo; kst u dks mnk-ndj I e>kb, \
- 3- (i) ok.V gkQ ?kVd dks I e>kb, \ U
- (ii) I xqku dh dksV dS sKkr djx?A
- (iii) 0.01 NaCl vkSj 0.01 BaCl<sub>2</sub> foy; u eafdl dk ijkl j.k nkc vf/kd gksk vkSj D; ka \

**bdkb7 & 4**  
**vk; fud I KE;**

**vfr y?kq mYkjh; izu**

**02 vad**

- 1- foyş rk xqkuQy dks i fjHkkf"kr dhft, A K
- 2- nřud thou eafoyş rk xqkuQy ds nks vuqz kx fy[k, A A
- 3- i h, p-eku I sD; k rRi ; Z gA K
- 4- I evk; u i Hkko dks i fjHkkf"kr djA K
- 5- ued ds 'kks'ku eafoyş rk xqkuQy dk vuqz kx fy[kA A
- 6- ; fn dSYI ; e dkckuV dh foyş rk 0-0305 xte i fr yhVj gk rks  $CaCO_3$  dk foyş rk xqkuQy Kkr dhft, \ U

**y?kq mYkjh; izu**

**03 vad**

- 1- i h, p- eku rFkk gkbMkst u vk; u I kUnz k ea I cdk LFkfi r dhft, A U
- 2- f}rh; I eg ds {kkjh; eny dka ds vo{ksi .k grq I evk; u i Hkko dk vuqz kx fy[kA A
- 3- foyş rk , oafoyş rk xqkuQy ea I cdk LFkfi r dhft, A U
- 4-  $18^{\circ}C$  ij  $AgCl$  dk foyş rk xqkuQy  $1.5 \times 10^{-10}$  gA bl rki ij  $AgCl$  dh foyş rk D; k gksxh \ U
- 5- 'kq) ty ds  $pH$  eku dh x.kuk dhft, A U
- 6- cQj foy; u ds  $pH$  eku dh x.kuk dhft, A U
- 7- , d feJ.k ea 50 feyh  $NHCl$  o 30 feyh  $N NaOH$  gA foy; u dk  $pH$  Kkr dhft, A U

8- fuEufyf[kr dks I e>kb, & K

(1) vEyh; cQj

(2) {kkjh; cQj

### y?kq mYkjh; i z u

4 vød

1- yϕl vEy vkj yϕl {kkj dks I knkgj.k I e>kb, \ U

2- fuEufyf[kr ea I syϕl vEy , oa yϕl {kkj NkV, & U

(1)  $BF_3$

(2)  $Na^+$

(3)  $NH_3$

(4)  $OH^\ominus$

3- vk; fud xqkuQy vkj foy; rk xqkuQy ea I cak LFkfi r dhft, A U

4- fuEu dks I knkgj.k I e>kb, & K

(i) foy; rk xqkuQy

(ii) I evk; u i Hkko

5- f}rh; , oa r}rh; I eg ds {kkjh; eny dka ds vo{ks .k ea I evk; u i Hkko dk vuq; z ks fyf[k, A A

6- cQj foy; ds<sub>pH</sub> eku dsfu/kkj .k grqgs Mj I u I ehdj .k 0; Bi Uu dhft, A U

7- , d yHVj foy; u eafdruk  $NaOH$  ?kkyk tk, fd foy; u dk <sub>pH</sub> eku 12 gks tk, A U

### nh?kz mYkjh; i z u

5 vød

1- fuEu dk I {klr eamYkj na & A

(i) <sub>pH</sub> eku ds nks mi ; ks A

(ii) foy; rk xqkuQy ds nks egRoA

(iii)  $\text{pH}$  of Gastric Juice is  $\text{pH} \approx 1$

2.  $\text{H}_2\text{PO}_4^-$  &

(i)  $\text{H}_2\text{PO}_4^- + \text{H}_2\text{O} \rightleftharpoons \text{HPO}_4^{2-} + \text{H}_3\text{O}^+$

(ii)  $\text{pOH} = 14 - \text{pH} = 14 - 1 = 13$

## bdkbZ & 5

### Å"ek xfrdh

vfr y?kq mÿkj; izu

02 vød

- 1- Å"ekxfrdh dsf}rh; fu; e dks i fjHkkf"kr dhft, A K
  - 2- fudk; dks i fjHkkf"kr dhft, A K
  - 3- cn ræ l sD; k l e>rs gA K
  - 4- pØh; i Øe D; k gS\ K
  - 5- , .Vkih l sD; k rkRi ; Z gS\ K
  - 6- fxCl eDr ÅtkZ dks i fjHkkf"kr dhft, A K
  - 7- cQZ dh , .Vkih ty ea de D; ka gkrh gS\ K
  - 8- fuEufyf[kr l s , .Vkih ?kVrh gS ; k c<rh gS\ K
- $\frac{1}{4}\frac{1}{2}$  ruh gØZjcj → <hyh NkMh gØZjcj      A



y?kq mÿkj; izu

03 vød

- 1- , .Vkih l sD; k rkRi ; Z gS\ , .Vkih dh bdkb; k; fyf[k, A K
- 2- fl ) dhft, fd & U  
 $-\Delta G = w \text{ vid kj}$
- 3- , .Vkih vks , .Vkih ifjorZu dks mnkgj .k l fgr l e>k; A U
- 4- fxCl gYegkVI -l ehdj .k i Øe dh Lor%i ofrZk eafdl i Zkj l gk; d gA s
- 5- tc vekfu; e Dykj kbM dks ty ea?ksyk tkrk gSrksfoy; u ds BMk gks i j , UFKYih ifjorZu , oa , .Vkih ifjorZu ij i Zk'k Mkfy, A A

- 6- Lor%idfrh , oavLor%idfrh i Øekæamngj.k l fgr nksvrj fyf[k, A U
- 7- jkl k; fud vfhkfØ; k dh fn'kk Li"V dhft, & U  
 $\frac{1}{2} \Delta G = 0$        $\frac{1}{2} \Delta G > 0$        $\frac{1}{2} \Delta G < 0$
- 8- ,.Vkih dh vo/kkj.kk ds ifji; ea Å"ekxfrdh ds f}rh; fu; e dks Li"V dhft, A U

**y?kq mYkj; izu**

**04 vad**

- 1- eDr ÅtkZD; k gS\ fLFkj rki vj nkc ij fl ) dhft, fd &  $\Delta G = \Delta H - T\Delta S$  U
- 2- eDr ÅtkZij rki ds iHkko dks l e>kb; A U
- 3- [kysik= eagkusokys Lor%iØe ea ,.Vkih ifjorU dks l e>kb; A A
- 4- fXCl eDr ÅtkZ  $\frac{1}{2} \Delta G$  ,.Vkih  $\frac{1}{2} \Delta G$  , UFKYih  $\frac{1}{2} \Delta S$  ds e/; l adk LFkfir dhft, A U
- 5- vfhkfØ; k ds Lor%i dfrh k gusdk okLrfod eki eDr ÅtkZ ifjorU gkrk gA l e>kb; A A
- 6- 298 K ij vfhkfØ; k ds  $\Delta H$  rFkk  $\Delta S$  dseku Øe'k% $\frac{1}{2}$  283-05 KJ rFkk  $\frac{1}{2}$  86-61 KJ<sup>-1</sup> gA 298 K rki ij iØe dsfy,  $\Delta G$  dk ifjdyu dhft, A U
- 7- Å"ekxfrdh ds rrh; fu; e D; k gS\ bl dh mi ; kfxrk fyf[k, A A
- 8- fl ) dhft, fd fLFkj rki , oafLFkj nkc ij eDr ÅtkZ eadeh fudk; }kj k fd, x, vi t kj dk; Z dh eki gA A

**bdkbz & 6**  
**fo | r j l k; u**

vfr y?kq mÿkjh;

02 vød

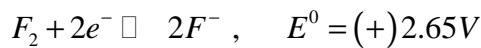
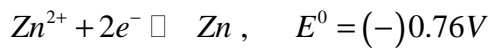
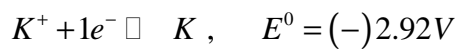
- 1- vkDI hdj .k l ã ; k , oa l a kst drk ea nks vørj fyf[k; A U
- 2- gkbMkst u dks NkM/dj bZku l sykaes a iz ðr fd, tk l dusokys nks i nkFkkã ds uke fyf[k; A K
- 3- byDVkãfedy l sy ea yo.k l rã ds nks dk; Zfyf[k; A K
- 4- l sy ds fo | r okgd cy l s D; k rkRi ; ZgA K
- 5- fo | r jkl k; fud Jskh dks i fjHkkf"kr dhft , A K
- 6- l k/kkj .k l sy l s  $H_2-O_2$  bZku l sy dh vf/kd mi ; kxh gkus dk nks egÜkk fyf[k, A A
- 7- 'kãd l sy ea iz ðr gkus okys fo | r vi ?kV; ka dk uke fyf[k; A K
- 8- bZku l sy ea iz ðr gkus okys byDVkãka dk uke fyf[k, A K

y?kq mÜkjh; i z u

3 vød

- 1- fuEufyf[kr ; kãx dka ds fpUgkãdr rRo ds vkDI hdj .k l ã ; k fyf[k, & A  
 $K \underline{Mn} O_4 ] \quad H_2 \underline{S}_2 O_8 ] \quad \underline{Cl}_2 O_7$
- 2- fuEufyf[kr /kkrã/ka dks ml Øe ea 0; okLFkr dhft, ft l ea os, d nã js dks muds yo. kka ds foy; uka l s i frLFkfi r djrh gA U  
*Al, Cu, Mg .*
- 3- xYofud l sy D; k gs \ Mfy; y l sy dks l hãfrd i n'kU ½symbolic representation½ dhft , A S

- 4- fo | r vi ?KVuh l sy , oafol r jkl k; fud l sy earhu varj fyf[k, A U
- 5- foHkokUrj , oafol r okgd cy earhu varj fyf[k, A U
- 6- byDVtkdkfedy l sy ea yo.k l r qds dk; l dks l fki ea l e>kb; A U
- 7- xYofud l sy ds *EM.F.* dh x.kuk dhft , A fn; k gS &  $E_{Zn^{++}/Zn} = (+) 0.76 V$  ;  $E_{Cu^{++}/Cu} = (+) 0.34 V$  U
- 8- fuEu rhu vffHkfØ; kvka ds  $E^0$  n[kdj l cl s izy vipk; d o l cl s izy vkDI h dkjd ds uke dkj.k l fgr fyf[k, A A



### y?kq mÜkj; i zu

4 v&

- 1- fo | r jkl k; fud Js kh dks mnkgj.k l fgr l e>kb; A U
- 2- ykgsij yxh ft& dh ijr VW tkusij Hkh ykgsij tx ughayxrk tcf& ykgsij yxh fVu dh ijr VW tkusij tx yx tkrh g& D; ka\ dkj.k l fgr l e>kb; A U
- 3- bZku l sy dh fØ; k fof/k dks l fp= l e>kb; A S
- 4- ekud gkbMkst u byDVrM dks l e>kb; A K
- 5- l fkkj.k l sD; k l e>rs gS\ bl dscpko ds nks mik; ds d&oy uke n& K
- 6- Mfu; y l sy ftl eaft& , oadkWj byDVrM vius& viusyo.k ds foy; uk&ea Mics g& tc E 1/2 < 1.10 v yxkusij l sy dh dk; Zi z kkyh l e>kb; A A
- 7- pkj /kk r q/ka 1/4, B, C, D 1/2 ds ekud byDVrM foHko dk eku Øe'k% 1/4-1/2 0.40 v , 1/2-1/2 0.54 v, 1/4-1/2 0.14 v vkj 1/2-1/2 1.36 v g& budh ?KVrh g&Z l fØ; rk ds vk/kkj ij Øec) dhft, A A



- 1- I Ækkj .k I sD; k I e>rs gð \ bl ds dkbZ nks dkj .k fyf[k, A bl ds cpko ds mRl xj {k.k dks I e>kb; A U
- 2- Mfu; y I sy ds fØ; kfof/k dks I fp= I e>kb; A S
- 3- 'kðd I sy dscuus½Construction½ dks I Æki ea I e>krsgg jkl k; fud I ehdj .k dks fyf[k, A U
- 4- bZku I sy I sD; k I e>rs gð \ H<sub>2</sub> & O<sub>2</sub> bZku I sy dks I fp= I e>kb; A S
- 5- I Æki ea I Ækkj .k , oaml dh fØ; kfof/k dks I e>kb; A U
- 6- ?kfm+ ka , oa vU; ; qDr; ka ea vR; f/kd mi ; ksx ea vkus okyh cVu I syka ea fuEufyf[kr vfhkfØ; k gksr h gS  

$$\text{Zn}_{(s)} + \text{Ag}_2\text{O}_{(s)} + \text{H}_2\text{O}_{(l)} \rightarrow \text{Zn}^{2+}_{(aq)} + 2\text{Ag}_{(s)} + 2\text{OH}^{-}_{(aq)}$$
vfhkfØ; k ds fy,  $\Delta G^0$  , oa  $E^0$  Kkr dhft , A A
- 7- Cu<sup>2+</sup>/Cu vks Ni<sup>2+</sup>/Ni byDVVM dk ekud vi p; u foHko Øe'k 0.34 v vks ½&½0.25 v gA mDr byDVVM dk iz ksx djrs gg byDVVM vfhkfØ; k dk I ehdj .k fyf[k, A A  
dkj .k nhft , ; fn fudy ds ik= ea dkwj I YQV foy; u j [kk tk; A

## bžlkbž & 7

### jkl k; fud cy xfrdh

vfr y?kq mRrjh;

02 vđ

- 1- 'kq; dksV rFkk iEke dksV dh vfHkfØ; k dh nj dh bžlkbž D; k gS\ K
- 2- vfHkfØ; k ds ox I sD; k I e>rs gS\ K
- 3- vk\$ r nj rFkk rRdkfyd nj D; k gS\ U
- 4- vfHkfØ; k dh v.kq ā; drk D; k gS\ K
- 5- Nne dksV vfHkfØ; k; j fdl sdgragā K
- 6- vfHkfØ; k dh dksV rFkk v.kq ā; drk eanksvrj fyf[k; s\ U
- 7- I ā; .k mtkz D; k gS\ K
- 8- vkghřu; I dk I ehdj.k fyf[k; s\ K
- 9- ngyh mtkz D; k gS\ K
- 10- rki xqkkā I sD; k I e>rs gks\ K

y?kqRrjh; iž u

03 vđ

- 1- j\$M; k\$kehž fo?kVu dh vfHkfØ; k dh dksV fdruh gkrh g\$ j\$M; k\$kehž fo?kVu fLFkjkd dh x.kuk dhft, \ U
- 2- 'kq; dksV dh vfHkfØ; k ds fy, nks I ehdj.k 0; ĩi Uu dhft, \ U
- 3- jkl k; fud vfHkfØ; k dh nj ij rki rFkk nkc] I kUnz k dk i ĩkko fyf[k; s\ U
- 4- vfHkfØ; k dh dksV] vfHkfØ; k dh nj I sfdI ižkj fHkuu gS\ U
- 5- fof'k"V nj fLFkjkd rFkk ox fLFkjkd D; k gS\ U

**y?kqRrjh; i' u**

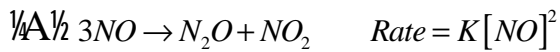
**04 v&d**

- 1- vghfu; l l ehdj .k dks 0; i l u dhft, \ U
- 2- vfHkf0; k nj dh rki ij fuHkjrk l e>kb; s \ K
- 3- vfHkf0; k nj rFkk dksV fu/kkj r djus dh i f0; k fof/k dk o.ku dhft; s \ S
- 4- i Fke rFkk f}rh; dksV dh vfHkf0; k nj b&kbZ dh x.kuk dhft; s \ U
- 5- vfHkf0; k dh nj dks i Hkkfor djus okys dkj dka dk o.ku dhft; s \ U

**nh?kzRrjh; i' u**

**05 v&d**

- 1- 1/4 1/2 vfHkf0; k ds v) Z vk; pky l svki D; k l e>rs gS \  
 1/4 i 1/2 i Fke dksV dh vfHkf0; k ds v) Z vk; pky ds fy, 0; at d fyf[k; \ U  
 1/4 i 1/2 ngyh mtkZ, oa l i 0; .k mtkZ dks l e>kb; s \
- 2- vfHkf0; k dh dksV D; k gS \ vfHkf0; k dh dksV ds i k; ksd fu/kkj .k fof/k; ka  
 dk uke fyf[k; s rFkk fdl h, d fof/k dks l e>kb; a \ S
- 3- 1/4 1/2 vfHkf0; k dh dksV rFkk v.kq l i; rk ea i kp varj fyf[k; A U  
 1/4 i 1/2 fuEufyf[kr vfHkf0; kvka ds fy, i R; d vfHkdjd ds l ki {k dksV rFkk  
 l Ei wkZ dksV Kkr dhft; s & U



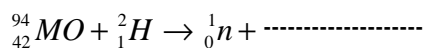
- 4- vfHkf0; k  $2N_2O_5 \rightarrow 4NO_2 + O_2$ , d dln ik= ead jkbZ tkrh gS pkj l ds M ea  
 $NO_2$  dh l kUnrk  $1.6 \times 10^{-2}$  esy c+tkrh gS bl vk/kkj ij  $N_2O_5$  ds ykr  
 gksus rFkk vfHkf0; k dh nj dh x.kuk dhft, \ U
- 5- vfHkf0; k dh rki ij fuHkjrk l e>kb; a rFkk vkfgfu; l l ehdj .k 0; i l u  
 dhft, \ U

**bdkbz 8**  
**ukfhkdh; j l k; u**

**vfr y?kqRrjh; izu**

**vad 02**

- 1-  $\alpha$  d.k  $\beta$  d.kka dh ryuk ea Årdka dks vf/kd {kfr i gpkrs gS} D; ka \ A
- 2- ukfhkdh; fo[kMu D; k g\$ , d mnkgj.k fyf[k, \ K
- 3- j\$M; ks , fDVo fo?kVu D; k gS \ K
- 4- ijek.kqce dsfl )kr dksLi "V dhft, \ K
- 5- n0; eku {kfr , oacaku mtz D; k gS \ K
- 6- fuEufyf[kr ukfhkdh; vfHkf0; k dks ijk dhft; s & U



**y?kqRrjh; izu**

**03 vad**

- 1- I eug foLFkki u dk fu; e D; k g\$ mnkgj.k I fgr I e>kb; s \ U
- 2- chMj fj, DVj fdl fl )kr ij dk; Zdjrk g\$ Li "V dhft, \ K
- 3- ukfhkdh; fo[kMu , oa ukfhkdh; I y; u vfHkf0; k dh ryuk dhft, \ U
- 4- v/kzk; pky , oavks r vk; pky dks I e>kb; s \ U
- 5  ${}_{90}^{232}Th$  I s  ${}_{82}^{208}Pb$  i fjorU eady fdrus  $\alpha$  , oa  $\beta$  d.k mRI ftz gkrs gS \ A

**y?kqRrjh; izu**

**04 vad**

- 1- j\$M; ks dkcU MfVx D; k g\$ bl ds }kjk ijkuh ydMh dh vk; q dk fu/kk\$ .k fdl izdkj djrs gS \ A
- 2- j\$M; ks , fDVo fo?kVu Jskh I svki D; k I e>rs gka  $4n+3$  Jskh ds iEke o vfire rRo dk uke crkb; s \ K

- 3-  $\alpha, \beta, \gamma$  fofdj. kkaeaHksnu {kerk, oaxfrt mtKZl cl svf/kd, oal cl s de fdl dh gS, oaD; ka \ dkj.k I fgr mRrj nhft, A
- 4- J[kay vfHkfØ; k D; k gS mnkgj.k I fgr I e>kb; A
- 5- I dgy xqkkad ½Packing fraction½ I svki D; k I e>rs gS \
- 6- jSM; ka, fDVo rRo dk {k; D; ka gkr k gS mnkgj.k ndj Li "V dhft, A
- 7- rRokUrj.k ijh{k.kkaea ½Transmutation½  $\alpha$  d.k, oa i kS/ku dks Rofjr fd; k tk I drk gS ijUrqu; v/kuka dks ugha Li "V dhft, A

### nh?kZ mRrjh; izu

05 vad

- 1- 1-0 xte jSM; ks I fØ; inkFkZ 5 fnu ckn 0-25 xte 'kSk jg tkrk gS rks fuEufyf[kr x.kuk; a dhft, & U  
 $\frac{1}{2}$  jSM; ks I eLFkkfud ds fy, {k; fLFkj kaDA  
 $\frac{1}{2}$ , d fnu ckn cps inkFkZ dk nD; ekuA  
 $\frac{1}{2}$  inkFkZ ds vk/kh ek=k ds fo?kVu ea yxus okyk I e; A
- 2-  $\frac{1}{2}$  df=e jSM; ks I fØ; rk D; k gS \ U  
 $\frac{1}{2}$  fdl h rRo dk ijek.kqØekad 90 vks ijek.kqnD; eku 236 gS ml ea I s  
 $4\alpha$  rFkk  $2\beta$  d.kka ds mRI tZ I scuus okys rRo dk ijek.kqnD; eku vks  
 ijek.kqØekad Kkr dhft, \

**bdkbz & 9**  
**I rg j l k; u**

**vfr y?kqRrjh;**

**vad 02**

- 1- vf/k'kkSk.k vkSj vo'kkSk.k ea rhu vrj fyf[k, \ U
- 2- ik; I fdl sdgrs gS \ K
- 3- I æfj.kr dksykbM D; k gS \ K
- 4- gkMhZ 'kwtS dk fu; e D; k gS \ K
- 5- ik; I hdkj d D; k gS \ K
- 6- /ku vk; u d.k I pyu D; k gS \ K
- 7- nD fojkskh I kwy ds LFkkf; Ro dk D; k dkj.k gS \ K
- 8- \_\_.kkRed mRij d I sl fO; .k mtKz dseku eafdl idkj dk ifjorZu gS \ U
- 9- ft; ksykbV fdl idkj dk mRij d gS \ K
- 10- eD[ku fdl idkj dk dksykbM gS \ K

**y?kqRrjh; izu**

**03 vad**

- 1- Mk; fyfI I ½viki gu½ D; k gS I e>kb; s \ K
- 2- fV.My iHkko rFkk ckmuh xfr dks I e>kb; s \ U
- 3- Hkksrd vf/k'kkSk.k rFkk jkl k; fud vf/k'kkSk.k ea iæf[k vUrj crkb; s \ U
- 4- Lo.kZ I f; k ½Gold Number½ rFkk iSvh d j.k dks I e>kb; s \ U
- 5- ,Ut kbe mRij d dh fO; kfof/k I e>kb; s \ U

**y?kqRrjh; izu**

**04 vad**

- 1- nD Lugh rFkk nD fojkskh dksykbM ea dkbz pkj vUrj fyf[k; s \ U

- 2- fel sy D; k gsfel sy ra= dk , d mngkj .k crkb; srFkk l kcu }kjk LoPN djus dh fØ; k fof/k l e>kb; s\ U
- 3- vilgu D; k g\$ bl ds vuqz kx crkb; s\ U
- 4- dksykbM d.kka ds idk'kh; xqkka dk o.ku dhft , \ A
- 5- okLrfod foy; u] dksykbMh] foy; u rFkk fuyEcu eapkj vlrj fyf[k; s\ U

### nh?kz mRrjh; izu

5 vad

- 1- l ekaxh rFkk fo"kekaxh mRij .k dh fØ; k fof/k l e>kb; s\ U
- 2- dksykbM ra= dk 'kks'ku ds sdjrs gSo.ku dhft , \ A
- 3- dksykbMh ra= ds idk'kh; rFkk fon; q xqkka dks l e>kb; s\ A
- 4- gkMhz 'kvt' s dk fu; e rFkk Lo.kz l d; k dks mngkj .k ndj l e>kb; s\ U
- 5- ikl ; D; k g\$ ik; l ds xqk rFkk vuqz kx fyf[k; a\ A

bZkbZ10

I eñ 15 , oa 16 “p” block element

vfr y?kq mYkjh; iZu

02 vad

1/4 1/2 ukbVktu ds+3 , oa-3 vkDI hdj.k voLFkk inf“k” djusokys , d&, d ; kfxd dk mnkgj.k fyf[k; sA U

1/2 1/2 vEyjkt D; k gS K

1/3 1/2 ukbVktu vius I eñ ea I cl s de fØ; k”khy D; ka gkrk gS U

1/4 1/2 ukbVktu oxZea fdl dk gkbMRbM I cl s izy vipk; d gS K+U

1/5 1/2 ukbVktu oxZea fdl dk gkbMRbM I cl svf/kd rki h; LFkk; hRo gkrk gS U

1/6 1/2 vij: i rk fdl sdgrsgS K

1/7 1/2 I YQj dsfdrus vij: lk ik; s tkrsgS U

1/8 1/2 I YQj ds v.kqfdrus i jek.kdrk ds gkrsgS U

1/9 1/2 vekfu; k vkj QkLthu I sfØ; k gkus ij , d ; kfxd curk gsmI dk uke fyf[k; sA K

1/10 1/2 vkDI htU dsfdrus vij: i ik; s tkrsgS K

y?kqRrjh; iZu

03 vad

1/4 1/2 HNO<sub>3</sub> dk Cu ds I kFk fofHkUu i fjfLFkfr; ks ea j I k; fud vfHkfØ; k fyf[k; sA U

1/2 1/2 N vkj P , d gh I eñ ds gkus ds ckn Hkh ukbVktu VRbSsV ; kfxd cukrk gS tcfD QkLQkj I VRbosysV ds I kFk&I kFk i s Vkosy bV Hkh cukrk gS D; ka \ U

1/3 1/2 QkLQkj I ds vkDI h vEyka ds uke , oa jkl k; fud I = fyf[k; sA K



- 1/4 1/2 vekfu; k ds rhu mi ; kx fyf[k; sA A
- 1/5 1/2 ukbVktu ds vi l keku; 0; ogkj ds dkbz rhu dkj .k nhft; sA U
- 1/6 1/2 I Qn QkLQkj I , oa Ykky QkLQkj I dh xqkka dh rgyuk dkbz rhu fcnqea dhft , A U
- 1/7 1/2 QkLQkj I ds rhu mi ; kx fyf[k, A A
- 1/8 1/2 QkLQkj I ds rhu v; Ld dsuke fyf[k, A K
- 1/9 1/2 us yj vfhkdeð I s vekfu; k dh fØ; k fyf[k, A U
- 1/10 1/2 vEyk t dk Au ds l kfk jkl ; fud vfhkfØ; k fyf[k, A A

**y?kqRrjh; izu**

**4 vda**

- 1/1 1/2 , d snksv; Ld dsuke fyf[k; sftul sl YQj i ktr gks l ds, oal YQj [kuu ds Qkd dh fof/k dk l fp= o.ku dja \ A
- 1/2 1/2 fdl h jaxhu in kfkz l sjæ vyx djus dh i fd; k dks D; k dgrsgSA bl dh jkl k; fud vfhkfØ; k fyf[k, ftl ea jax dks i q% i ktr fd; k tk l dsA U
- 1/3 1/2 f}rh; , oa prfkz l eng ds {kkjh; eny dka ds vi {ki .k ea iz q r gks us okys vfhkdeð dk uke fyf[k; s rFkk muds fuEu xqkka dks l e>kb; a A S
- 1/4 1/2 vEyh; xqk 1/2 1/2 vi pk; d xqk
- 1/4 1/2 H<sub>2</sub>SO<sub>4</sub> ds mi ; kx fyf[k; a A A
- 1/5 1/2 H<sub>2</sub>SO<sub>4</sub> cukus dh l Ei dz fof/k dk fuEu "kh'kd ds vræ r o.ku djks A S
- 1/6 1/2 I a = dk fp=A
- 1/7 1/2 jkl k; fud vfhkfØ; kA
- 1/8 1/2 "kks'kuA
- 1/9 1/2 I YQj ds pkj vkDI h vEyk ds dsuke l w o vkDI hdj .k voLFkk fyf[k; sA K
- 1/10 1/2 I eng 15 ea vfØ; ; ðe i hkkko ik; k tkrk gS bl dh i q"V ds fy; s dkbz nks mnkj .k fyf[k, A U

## nh?kz mRrjh; 5 vda

¼1½ I eg 15 ds rRoks ds rhu jkl k; fud , oanks Hkkf rd xqk dks I e>kb; sA U

½2½ i z kx "kkyk ea ukbfV'd vEy cukus ds fof/k dk fuEu "kh'kd vraxr o.ku dhft , A s

- 1- fof/k dk fp=A
- 2- jkl k; fud vfHkfØ; kA
- 3- ftad ds I kFk fØ; kA

½3½ QkLQkj I ds rhu v; Ld ds uke nrs gq s QkLQkj I fuekzk dh vk/kfud fof/k dk fp= , oafuEu ds I kFk fØ; k fy [ks A s

- 1- {kkj ds I kFkA
- 2- x/kad ds I kFkA

¼4½ vekfu; k fuekzk dh gñj fof/k dk fuEukfdr fcinq ea o.ku djs A

¼4½ Lka = dk fp=A

½2½ j I k; fud vfHkfØ; kA

½3½ fl ) kar A

½5½ QkLQkj I ds ikp mi ; kx fyf [k; sA A

½6½ QkLQhu cukus dh i z kx "kkyk fof/k dk fp=] j I k; fud vfHkfØ; k , oa QkLQhu dh I j puk crkb; sA s

¼7½ vkt VokYM fof/k I sukbfV'd vEy cukus dh fof/k dk fuEukfdr fcinq/ka ea o.ku djs A A

¼4½ fl ) kar A

½2½ j I k; fud I ehdj .kA

½3½ fof/k dk ukæfdr fp=A

bZkbZ11

I egj 17 , oa18 ds rYoka dk j l k; u

vfry?kqmYkjh; izu 02 vad

- 1/4 1/2 I egj 17 ds rRoks dk l keklj; byDVrfud folj; kl D; k gSA K
- 1/2 1/2 I egj 17 ea l cl sfØ; k"lhy rRo dk& I k gksck A K
- 1/3 1/2 IF<sub>7</sub> es dk& I k l ðj.k ik; k tkrk gSA K
- 1/4 1/2 I egj 18 ds rRoka dks vfØ; xS D; ka dgk tkrk gSA K
- 1/5 1/2 I egj 18 ds rRoka dks l rqrRo D; ka dgrs gSA K
- 1/6 1/2 gSykstu oxL ds gkbMrbM es l cl s vf/kd LFkk; h dk& gksck A K
- 1/7 1/2 gSykstu oxL ds gkbMrbM ea l cl s vf/kd vEyh; gkbMrbM dk uke o l #  
fyf[k; s A K
- 1/8 1/2 ?kj ea tyusokyscYc es dk& I k vfØ; xS Hkjk gksck gSA A
- 1/9 1/2 xkrk[kkjks ds fy; s "ol u fØ; k ds fy; s, d vfØ; xS dk uke fyf[k; A A
- 1/10 1/2 varj gSykstu ; kSxd mudsfdl xqk ea varj ds dkj .k curk gSA A

y?kqmYkjh; izu 3 vda

- 1/4 1/2 1lykjhu ds [kk t ea njh ds rhu dkj .k crkb; s A U
- 1/2 1/2 ghfy; e ds rhu mi ; ksx fyf[k; s A A
- 1/3 1/2 1lykjhu ds vl ær 0; ogkj dks l e>kb; s A U
- 1/4 1/2 Dykjhu ds rhu mi ; ksx fyf[k; s A A
- 1/5 1/2 dS j ds mi pkj grq dk& I k vfØ; xS dk mi ; ksx fd; k tkrk gSA A
- 1/6 1/2 Xef<sub>2</sub> esfdl izdkj dk l ðj.k ik; k tkrk gSA K

- 1/7½ Xef<sub>4</sub> dh l jipuk eafdrus , dkdh byDVku ; ½e ( lone pair of electron) ik; k tkrk gSfp= }kjk crkb; sA K
- 1/8½ fdl gSykstu rRo dk vk; uu mtKZ dk eku vf/kd gkrk gSvkj D; ka \ ½dkbz rhu dkj .k½ U
- 1/9½ ½lykjhu ds rhu v; Ld dk uke o l ½ fyf[k; sA K
- 1/10½ Dykjhu dh fuEu rhu vfilkfØ; k fyf[k; sA U
- 1/11½ co ds l kFk
- 1/12½ l rlr gkbMkdkcZu ds l kFk
- 1/13½ , jhuka ds l kFk

### y?kq mRrjh; izu 4 vda

- 1/1½ l eg 17 ds rRoka ds 4 HkkSrd xqkka dh vkofrZrk crkb; sA K
- 1/2½ Dykjhu vkj ½lykjhu ea dkbz pkj vrj fyf[k; sA U
- 1/3½ AX<sub>5</sub> i dkj ds vrj gSykstuh ; kSxd ds mnkgj .k ndj l djak dks l e>kb; sA S
- 1/4½ mRd"V xS ks ds pkj HkkSrd xqkka dh 0; k[; k djsA K
- 1/5½ F<sub>2</sub> cukus dk vk/kfud fof/k dks l fp= l e>kb; sA U
- 1/6½ cdeu ds l a = l sD; k cuk; k tkrk gSfof/k dks l fp= l e>kb; sA S
- 1/7½ Cyhfpa i kmMj cukus dh fof/k dks fuEu fcnyka ea l e>kb; sA A
- 1/11½ fl ) lrA
- 1/12½ j l k; fud vfilkfØ; kA
- 1/13½ ukekfidr fp=A

## nh?kZ mRrjh; i' u 5 vda

- ¼½ mRd'V xS ka ds i FkDdj .k ds Møkj fof/k dk I fp= o.kZ djsA S
- ½½ mRd'V xS ka ds i FkDdj .k ds vk/kfud fof/k dks I fp= I e>kb; aA S
- ¾½ i z ksx "kkyk ea Dykj hu xS cukus dk fuEufdr fcnq ea o.kZ djaA S
- ¼½ fof/k dk ukefdr fp=
- ½½ jkl k; fud vfHkfØ; k
- ¾½ fojtad ds: i ea
- ¼½ XeO<sub>4</sub> , oaH<sub>2</sub>XeO<sub>4</sub> dh I j puk dks I e>kb; sA U
- ½½ gSykst u ds vkDI h vEyk dh fuEu xqkks dks I e>kb; & U
- ¼½ vEyh; "kfDr
- ½½ LFkk; hRo
- ¾½ I j puk

bdkbZ & 12

I Øe.k rRokao v r% I Øe.k rRoksd k j l k; u

**vfr y?kq mRrjh; 2 vød**

- 1/4 1/2 ftød ds nks v; Ldkødk uke fyf[k; sA K
- 1/2 1/2 yqj dklLVd dk jkl k; fud uke o l = fyf[k; sA K
- 1/3 1/2 fe"ke\y ea l hfj; e dh i fr"krk fyf[k; sA K
- 1/4 1/2 fdl xqk ds dkj .k l kM; e Fkk; kd YQ\ dks Qk\kxkQh ea iz; Ør fd; k tkrk gSA A
- 1/5 1/2 Zn, Cd, Hg dk l Øe.k /kkrqugh ekuk tkrk tcf d a&cykd ds rRo gS A nks dkj .k nsA U
- 1/6 1/2 I Øe.k rRo dks i fjHkkf'kr djsA K
- 1/7 1/2 v r% I Øe.k rRo l sD; k rkRi ; ZgSA K

**y?kq mRrjh; i zu 3 vød**

- 1/4 1/2 uhysdki j l YQ\ dks xeZ djus ij og l Qn D; k gks tkrk gS \ l e>kb; sA U
- 1/2 1/2 HktZ , oafuLrki u ea rhu v rj fyf[k, A U
- 1/3 1/2 ixyu rFkk HktZ ea vlrj dks mi ; Ør mnkgj .k n d j l e>kb; sA U
- 1/4 1/2 I Øe.k /kkrq a vkl kuh l s feJ/kkrqcuk yrh gSD; k a \ K
- 1/5 1/2 yBFksukbM ds dkbZ rhu mi ; kx fyf[k; sA A
- 1/6 1/2 >kx lyou fof/k dks l fp= l e>kb; sA S
- 1/7 1/2 i fjorhZ l a kst drk dks mnkgj .k n d j l e>kb; sA U

1/8½ vk; ju ds nks eq; v; Ldk ds uke vk\$ jkl k; fud l = fy[ka A CykLV  
Quñ ea vi pk; d dh rjg iz Ør inkFkZ dk uke fy[ka A K

1/9½ fuEu feJ/kkrq ds vo; oh rRok dk ifr"kr l 2kVu fy[k& K

1- ihry 2- LVuyd LVhy 3- dkd k

1/10½ dkWj l YO\$ ds l kfk fuEu dh fØ; k dk døy l ehdj .k fy[k& A  
vf/kdrk ea NH<sub>4</sub>OH (2) KI

### y?kq mRrjh; izu 4 vd

1/11½ ØkækbV v; Ld l s i k \$ "k; e MkbØkæ\$ cukus dk døy jkl k; fud  
vfHkfØ; k fy[ka A K

1/12½ ybFks kbMI l sD; k rkRi ; Zg\$ \ budk i FkDdj .k dfBu D; ka gSA U

1/13½ LVhy dk m'eh; mi pkj D; k g\$ \ budh D; k mi ; kfxrk gSA A

1/14½ QQks ynkj rkæ l s "kØ rkæ d\$ s i klr djæ sA fp= , oa l = fyf[k; A A

1/15½ vk; ju ds /kkrq deZ ea i xyu fØ; k ea okR; kHkVh ea gkus okys jkl k; fud  
vfHkfØ; kvka dks l fp= l e>kb; sA S

1/16½ l Øe.k rRoks ds l mHkZ ea fuEu dks l e>kb; & U

1/17½ ; s l ady ; kfxd cukrsgSA

1/18½ bueamRi j dh; xqk ik; k tkrk gSA

1/7½ ybFksukbM I dpu D; k gS\ bl dsD; k dkj.k gSA U

1/8½ vEyh; ek/; e ea iks/f" k; e ije&us/ ds vkDI hdkj d xqka ds nks mnkgj.k  
I e>kdj vfhkfØ; k fy[ka A U

### nh?kZ mRrjh; 5 vød

1/41½ dkWj i k; jkb t ds dkWj dk fu'd'kz k dks fuEu i nka ea I e>kb, & 1/4 j kl k; fud  
vfhkfd; k , oa fp= vo"; na A S

1/41½ >kx lyou fof/k

1/2½ cd ejhdj.k

1/3½ i xyu

1/2½ ybFksukbM I dpu I sD; k rkRi ; ZgSA bl ds dkj.k , oa i fj.kke fyf[k; A A

1/3½ fuEu dks I e>kb, & U

1/41½ i ks/f" k; e MkbØkes/ ds vkDI hdkj d xqk

1/2½ i ks/f" k; e MkbØkes/ dk {kkj I sfØ; k

1/41½ Qks/ksxkQh ds fuEu i nka dks I fp= jkl k; fud I ehdj.k I e>kb, & S

1/41½ Møyfi x

1/2½ fLFkjhdj.k

1/3½ fi fVx

1/4½ Vksuax



1/5½ I hesu ekfVU ds [kys ry HkVVh }kjk LVhy ds cuus dks fuEu i nka ea  
fyf[k, & s

1/4½ I {klr fooj .kA

1/2½ jkl k; fud vfHkfØ; kA

1/3½ ukekfd r fp=A

bdbz & 13  
mi l gl a ksth ; kfxd

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**y?kqmRrjh; izu 3 vad**

- 1/4 1/2 f}dyo.k vks I dty yo.k earhu vrj fyf[k, A U
- 1/2 1/2 dhys/ fdl sdgrsgSA mnkgj.k l fgr Li 'V djaA K
- 1/3 1/2 /kukRed \_\_.kkRed ,oamnl hu fyxsM iR; d ds, d , d mnkgj.k nA U
- 1/4 1/2 l a kstdrk cak fl ) kar dh rhu dfe; klfyf[k, \ K
- 1/5 1/2 /kkrqvk; uka ds xqkkRed fo"ysk.k ea l dty ; kfxdka ds dkbZ nks vuq z kx fyf[k, A A
- 1/6 1/2 Qk/kxkQh eami l g; ksth ; kfxd dk D; k mi ; kx gSA vko"; d l ehdj.k Hkh nbaA A
- 1/7 1/2 v'V Qydh; ; kfxd }kjk inf"kr izdk"kh; l eko; ork dks mnkgj.k nrs gq l e>kb; A U
- 1/8 1/2 l dtyks ds dkbZ rhu mi ; kx fyf[k, A A

**vfry?kqmRrjh; iz'u 2 vad**

- 1/4 1/2 gDI kMBV/ fyxsM dk , d mnkgj.k nhft, A ml dh l j puk Hkh cukoa K
- 1/3 1/2 mi l gl a kstu l a; k dks i fjHkkf'kr dhft, \ K
- 1/3 1/2 l dty ; kfxd ik; %jaxhu gkrs gS l e>kb; sA U
- 1/4 1/2 T; kferh; l eko; rk dks mnkgj.k }kjk Li 'V djaA U
- 1/5 1/2 i Hkkoh i jek.kq l a; k (EAN) dks i fjHkkf'kr djaA K

- 1/6½ LiDVkdfedy Jskh I sD; k I e>rs gSA K
- 1/7½ f}dyo.k vks I dy yo.k eanks vrj fy[ka A U
- 1/8½ fyxsM dks mnkgj.k I fgr ifjHkkf'kr djaà K
- 1/9½ tFVy ; kfxd fdl sdgrsgSA K

**y?kqmRrjh; izu 4 vad**

1/4½ fuEufyf[kr I dyks ds vkbZ ; w ih , - I h- uke fyf[k, & U

- (1)  $[Cu(NH_3)_4]SO_4$
- (2)  $[Co(NH_3)_3Cl_3]$
- (3)  $Fe_4[Fe(CN)_6]_3$
- (4)  $K_2[PtCl_6]$

1/2½ fuEufyf[kr I dy ; kfxdka dk I w fyf[k, & A

- 1/4½ MkbDykj kS/vk, Dok Økfe; e (III) ctekbM
- 1/2½ i kS/f" k; e fcl & 1/4/kDI yS/kS Mkb, ehu dkskYVv (III)
- 1/3½ i kS/f" k; e gDI kl k; uks Qjv (II)
- 1/4½ i kS/f" k; e Vv/kvk; kMks ejD; yv (II)

1/3½  $[Cu(CN)_4]^{2-}$  jaxghu gS tcf d  $[Cu(NH_3)_4]^{2+}$  uhyk jax dk gSD; ka \ A

1/4½ ouj ds fl ) kar ds 4 vfHkxfgr; k fyf[k, A K

1/5½  $[PtCl_4]^{2-}$  dh I jpuk oxl eryh; gS tcf d  $[Ni(CO)_4]^0$  prqQydh; gA D; ka \ A

1/6½ vkskf/k; ka ea iz Dr gkus okys dkbZ pkj I dy ; kfxdka dk uke fyf[k, \ A

1/7½ fuEu I dyka ds I w fyf[k, & A

- 1/4½ Mkb, ehu fol & 1/6Fkhyhu Mkb, ehu 1/2 eXuht (IV) I YQv
- 1/2½ i kS/f" k; e gDI kl k; uka Qjv (III)

1/8½ i kšf" k; e gDI k Dykjks lyfVuš (IV)

1/4½ Qšjd Qjks l k; ukbM

1/8½  $[\text{Ni}(\text{CN})_4]^{2-}$  dh l j puk oxl l eryh; gš l e>kb; sA A

1/8½ l a kst drk cak fl ) kš ds vk/kkj ij  $[\text{Cu}(\text{NH}_3)_4]^{2+}$  dscukus dks l e>kb; A U

1/40½ mi l gl a kst h ; kš x dks ds LFkkf; Ro dks i kkkfor djus okys pkj dkj dka dks  
Li 'V dja A U

1/41½ oxl l eryh; , oav'VQydh; l dly vk; uka }kj k i nf" kš T; kferh;  
l eko; ork dks , d & , d mnjgj .k ndj Li 'V dja A A

## bdkbz & 14

vkDI htU ; Ør fØ; kRed l ew ij vk/kfjr dkcfud ; kfxd

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### vfry?kqmRrjh; iZu 2 vød

- 1/4 1/2 , Ydkgy ds efFkyhdj.k l sD; k cuk; k tkrk gS \ U
- 1/2 1/2 bFkj dks , Y; fleuk ds l kFk 360<sup>0</sup> rd xeZ djus ij dks l k jkl k; fud ; kfxd i klr gksk \ U
- 1/3 1/2 fofy; el u l aysk.k fof/k l sD; k cuk; k tkrk gS \ U
- 1/4 1/2 2&gDI sksu dk l j puk l = fy[kks \ K
- 1/5 1/2 dsutkjks vfHkfØ; k fdl iZkj ds , fYMgkbM ea gksrh gS \ U
- 1/6 1/2 dsY" k; e , l hV/ dks xeZ djus ij dks l k ; kfxd i klr gksk gS \ U
- 1/7 1/2 bFkj ka rFkk , Ydkgyka ds chp fØ; kRed l eko; ork dk , d 2 mnkgj .k fyf[k; s \ U
- 1/8 1/2 fdl iZkj ds , fYMgkbM rFkk dhVksu , YMky l akuu vfHkfØ; k inf"kr djrs gS \ U
- 1/9 1/2 ml vfHkdeZ dk uke fyf[k, tks Vknwbu dks cat k fYMgkbM ea i j ofrZ djrk gS \ U
- 1/10 1/2 f}rh; d , Ydkgy ds vkDI hdj.k l sD; k i klr gksk gS \ K
- 1/11 1/2 , LVj ds ty vi?kVu l sD; k curk gS \ K
- 1/12 1/2 , fuyhu rFkk Qke fYMgkbM ds nks&nks mi ; kx fyf[k; s A A
- 1/13 1/2 ; jksVfi u dk jkl k; fud uke rFkk l j puk l = fyf[k, \ K
- 1/14 1/2 C<sub>3</sub>H<sub>8</sub>O vkf.od l = okys nks fØ; kRed l eko; oh ds uke , oa l j puk l = fyf[k; s A K

1/15 1/2 , LVjhdj .k dh jkl k; fud vfHkfØ; k fyf[k; sA U

### y?kq mRrh; i' u 3 vød

- 1/4 1/2 dſutkjks vfHkfØ; k D; k gſ jkl k; fud I ehdj .k I fgr I e>kb; aA U
- 1/2 1/2 , YMKW I ækuu D; k gſ jkl k; fud I ehdj .k }kjk Li 'V dhft , A K
- 1/3 1/2 , fYMgkbM dhVksu dh rnyuk ea vf/kd fØ; k" khy gkrs gSD; ka \ U
- 1/4 1/2 fofy; el u I æysk .k D; k gſ jkl k; fud I ehdj .k }kjk I e>kb; sA K+U
- 1/5 1/2 bVkmZ vfHkfØ; k D; k gſ jkl k; fud I ehdj .k }kjk Li 'V dhft ; aA K+U
- 1/6 1/2 jkstſeqM vfHkfØ; k D; k gſ mnkgj .k ndj I e>kb; a \ U
- 1/7 1/2 Qkek fYMgkbM I si kFkfed , Ydkgky dſ si klr djka \ U
- 1/8 1/2 Vknysu vfHkfØ; k fdl sdgrs gſ \ K
- 1/9 1/2 ijfdu vfHkfØ; k jkl k; fud I ehdj .k I fgr I e>kb; aA U
- 1/10 1/2 v .kq I ≠ C<sub>3</sub>H<sub>6</sub>O ds I eko; oh ; kſxd dsuke , oal j puk I ≠ fyf[k; sA U

### y?kq mRrjh; 4 vød

- 1/1 1/2 dkckſDI fyd vEyka ds DoFkukad I eku v .kſkj okys , Ydkgknyka dh vi ſkk  
mPp gkrs gSA D; ka \ U
- 1/2 1/2 D; k gkrs k gſ tc dſY" k; e , I hvſ dks dſY" k; e Qkeſ ds I kFk xeZ djrs  
gſ I ehdj .k ndj I e>kb; a \ U
- 1/3 1/2 fuEu fyf[kr dh vekſu; k ds I kFk vfHkfØ; k dk I ehdj .k nhft ; & U
- 1/4 1/2 Qke fYMgkbM      1/2 1/2 , fl VFYMgkbM
- 1/3 1/2 , I hvksu      1/4 1/2 cat fYMgkbM

¼½ LVhQsu vfHkfØ; k , oacstkbU I ?kuu dksmngj.k I fgr jkl k; fud  
I ehdj.k }kjk I e>kb; aA K

½½ C<sub>3</sub>H<sub>8</sub>O v.kqI ≠ okys nks fØ; kRed I eko; oh ; kfxdks dsuke vkj I j puk  
I ≠ fyf[k; aA U

### nh?kZ mRrjh; i'z u 5 vad

¼½ fofy; el u dh bEkjhdj.k fof/k D; k gS D; k ; g fujrj bEkjhdj.k fof/k  
gS dkj.k fyf[k; s , oa fof/k dk ukekfd r fp= cukbz s \ S

½½ i z kx"kkkyk ea Mkb, fFky bEkj cukus dh fof/k dk o.ku jkl k; fud  
I ehdj.k ndj dhft; sA i klr bEkj dksfdl izdkj "kq) fd; k tkrk gA s

½½ i z kx"kkkyk ea , I hvksu cukus dh fof/k jkl k; fud I ehdj.k vkj nk mi ; kx  
fyf[k; s \ S

¼½ i z kx"kkkyk ea QkfeZ vEy cukus dh fof/k jkl k; fud I ehdj.k , oanks  
mi ; kx fyf[k; a \ S

½½ fuEufyf[kr vfHkfØ; kvka dk mngj.k ndj I ehdj.k I fgr fyf[k; s & K

¼½ vk; kMksQkeZ vfHkfØ; k ½½ fV"ksdks vfHkfØ; k

½½ xkVjesu dkp vfHkfØ; k ¼½ jkst sueqM vfHkfØ; k

½½ i z kx"kkkyk ea , fl VFYMGkbM cukus dh fof/k jkl k; fud I ehdj.k , oanks  
mi ; kx fyf[k, \ A

bdkbz & 15

ukbVktstu ; Ør fØ; kRed l eg ij vk/kkfjr dkcfud j l k; u

vfry?kq mRrh; 2 vød

- 1/4 1/2 i z kx "kkyk ea ukbVktsthu cukus dh fof/k jkl k; fud l ehdj .k fyf[k; A U
- 1/2 1/2 dkfcy , ehu vfHkfØ; k mnkgj .k ndj l e>kb; a A U
- 1/3 1/2 , fuyhu cyd D; k gS bl ds nks mi ; kx fyf[k, A A
- 1/4 1/2 Mk; , tk/hdj .k D; k gS jkl k; fud l ehdj .k fyf[k, A U
- 1/5 1/2 l Mes j vfHkfØ; k D; k gS \ K
- 1/6 1/2 ukbVktsthu l s , fuyhu dS s i klr djsxa \ U
- 1/7 1/2 i z kx "kkyk ea , fuyhu cukus dh fof/k dk jkl k; fud l ehdj .k fyf[k, A U

y?kq mRrjh; 3 vød

- 1/4 1/2 fuEufyf[kr vfHkfØ; kvka ds jkl k; fud l ehdj .k fyf[k; s & K
- 1/4 1/2 xscz y Fksy ekbM vfHkfØ; k
- 1/2 1/2 gkDeu ctekbM vfHkfØ; k
- 1/2 1/2 , fFky , ehu dks eSFky , ehu rFkk eSFky , ehu dks , fFky , ehu ea dS s i fjofr r djsxs døy jkl k; fud l ehdj .k fyf[k; a \ U
- 1/3 1/2 , uhyhu , fFky , ehu l s de {kkjh; gkrk gS dkj .k fyf[k; a \ U
- 1/4 1/2 , fFky , ehu veksu; k l s vf/kd {kkjh; gkrk gS D; ka \ U
- 1/5 1/2 eLVMZ vkW y vfHkfØ; k dks l ehdj .k l fgr l e>kb; a \ K
- 1/6 1/2 , uhyhu l s fuEu fyf[kr dks dS s i klr djsxs døy jkl k; fud l ehdj .k fyf[k; & U



¼½ Qhuky ½½ , d hVusykBM ½½ Vrbckekə fuyhu

¼½ , fYdy l k; ukbM , oa , fYdy vkb l kd k; ukbM ea vlrj fyf[k; a \ U

**y?kqMRrjh; 4 vđ**

¼½ , fyQSVd rFkk , jkeSVd ukbVks ; kSxdks dk vEyh; rFkk {kkjh; ek/; e ea  
vip; u jkl k; fud l ehdj.k }kjk l e>kb; a \ U

½½ dS si fjoFr djs& U

¼½ Vkybu dks 2] 4] 6 VrbukbVks Vkybu ea

½½ ukbVks cat hu dks 1] 3] 5 VrbukbVks cat hu ea

½½ ukbVks csth hu cukus dh iz ks "kkyk fof/k dk ukekr fp= , oajkl k; fud  
l ehdj.k fyf[k; a \ S

¼½ vekusykbf l D; k g jkl k; ; fud l ehdj.k }kjk l e>kb; arFkk vekusykbf l  
dh l hek; s fyf[k; s \ U

½½ , fyQSVd , ehu ds {kkjh; xqkks dks i Hkkfor djus okys dkj dks dks  
l e>kb; a \ U

½½ , uhyhu dh byDVksQyhd i frLFkki u vflkfØ; kvka dks l e>kb; a \ U

**nh?kZ mRrjh; iz u 05 vđ**

¼½ , fFky , ehu cukus dh iz ks "kkyk fof/k dk o.ku jkl k; fud l ehdj.k , oa  
fp= l fgr fyf[k; a \ S

½½ ukbVks csth hu dk vip; u fuEu fyf[kr fclnqka ea l e>kb; s & A

¼½ vEyh; ek/; e ea

½½ {kkjh; ek/; e ea

½½ mnkl hu ek?; e ea

1/3½ i kFkfed f}rh; d rFkk r`rh; d , ehuka dh igpku djus dh fof/k; ka dks  
I e>kb; a \ U

1/4½ fuEufyf[kr ; ffxdka I s , ehud s i klr djsxs & U

1/4½ , Ydkgky I s                      1/2½ QkefYMgkbM I s

1/3½ , fydy I k; ukbM I s      1/4½ , fjy I k; ukbM I s

1/5½ vMI e I aA

**bdkbz & 16**  
**nšud thou eaǝl k; u**

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**vfr y?kqmRrjh; iz u 2 vǝd**

- 1/1½ i kdfrd j c j ds , dyd dk uke o l # fyf[k, K
- 1/2½ gea df=e “kdǝk dh vko”; drk D; ka gkrh gS\ K
- 1/3½ l kcau , oa fMvtV ea dkbz nks varj fyf[k, A U
- 1/4½ Lopkfyr okguka ds V k; j fd l l scurk gS\ A
- 1/5½ nks df=e “kdǝk ds uke fyf[k, A K
- 1/6½ , .Vhck; kšVDI dk , d mnkgj .k nhft , A K
- 1/7½ vEyh; jatd ea l s , d dk uke o l # fy[k a K
- 1/8½ , .Vhck; kšVDI fd l s dgrs gS\ K
- 1/9½ , d , s j l k; u dk uke fy[kka tks , .Vhi k; jkšVd , oa , ukytšl d nksuka grq  
iz ņr gkrk gS A K
- 1/10½ i firǝkškh D; k gS , d mnkgj .k ns A K

**y?kqmRrjh; iz u 3 vǝd**

- 1/1½ jatd , oa o .kd ea dkbz rhu varj fyf[k, A U
- 1/2½ i kdfrd , oa l š yf'kr cgyd dks mnkgj .k l fgr l e>kb; a A U
- 1/3½ l ecgyd , oa l gcgyd dks mnkgj .k l fgr l e>kb; s A U
- 1/4½ C; ņk , l rFkk C; ņk , u dks mnkgj .k l fgr l e>kb; s A U
- 1/5½ i fjj {kd l s D; k l e>rs gS vi us?kjka ea iz ņr gkusokys nks i fjj {kd i nkFkkš  
ds uke o l # fy[k s A A

- 1/6½ vkskf/k ds : lk ea iz Ør djusokys ikp i k8kka ds uke fyf[k, A A
- 1/7½ V8de i koMj ds l a'kVd fyf[k, A K
- 1/8½ fMVt8V dks ifjHkkf'kr dj ml dsi R; d i d kj ds, d , d m nkgj .k n8sA U
- 1/9½ l ecgyd , oa l gcgyd dks m nkgj .k l fgr ifjHkkf'kr djaA U

**y?kqmRrjh; izu 4 vad**

- 1/4½ , .Vhck; k8Vd l svki D; k l e>rs gS \ K
- 1/2½ ifjj{k.k dks Li 'V dhft , A ifjj{k.k l sinkFkZ ds xqk eaD; k ifjorZu gk8k gS \ U
- 1/3½ Fkek8y k fLVd , oa Fkek8 sVax ea m nkgj .k l fgr rhu varj nsA U
- 1/4½ , y- Mh- i h- bZ , oa , p- Mh- i h- bZ dks , d m nkgj .k n8dj l e>kb; sA U
- 1/5½ i firj k8kh , oa jksk.k k8k"kh ea dkbZ pkj varj fyf[k; sA U
- 1/6½ n8ud thou ea oL=m | ksx ea iz Ør gkusokys pkj cgyd dk uke naA K
- 1/7½ [kk | ja l sD; k l e>rs g8\bl ds iz ksx l svki ds l ger ; k vl ger gkus ds dkj .k dks fyf[, A A

**nh?kZ mRrjh; izu 5 vad**

- 1/4½ vEyh; jatd , oa {kkjh; jatd ea pkj varj m nkgj .k l fgr n8sA U
- 1/2½ fuEu ds ifjj{k.k ea iz Ør dkcud inkFkZ ds uke fyf[k, & U
- 1/4½ Qyka ds uke] t8&t8yh] vkpkj] ej8ck A
- 1/2½ VekVj dh pVuh] l k8
- 1/3½ fuEu dks , d & , d m nkgj .k n8dj l e>kb; & U
- 1/4½ o8/ jatd
- 1/2½ ja8odkZd jatd

¼½ cktkj eami yC/k uhy ea l s l cl scgrj rjhds l siz Ør gks okys uhy dk  
uke crkb; § , oabl dh jatd fØ; k dks l e>kb; sA A

½½ fuEu ea iz Ør gks okys j l k; u dk uke o l = fyf[k, & κ

¼½ Tojuk"kh

½½ , .Vhck; kSVd

½½ jatd

¼½ o.kd

½½ i'kkUr d

fo" k; %& j l k; u 'kkL=

bdkbz & 01

ijek.kq l j puk , oa jkl k; fud vkcu/ku

vfr y?kqñUkjh; i zu

- izu 1& d{k , oad{k d ea dkbznks vñj fyf[k, A U
- izu 2& SF<sub>6</sub> v.kq eafdl idkj dk l dj.k ik; k tkrk gS\ K
- izu 3& l eu; WMLUd 'kcn dks mnkj.k l fgr Li"V dhft, A K
- izu 4& Dok/e l ã; k fdl sdgrsgã\ K
- izu 5& ; fn eq; Dok/e l ã; k n dk eku 2 gsf}xákh Dok/e l ã; k l ds fdruseku gkã\ A
- izu 6& nð; dh }\$ iÑfr dh [kst fdl oKkfud us dh Fkh \ K
- izu 7& fo | r pñcdh; rjãsfdl sdgrsgã\ K
- izu 8& ifr vkãkh vkf.od d{k d l sD; k rkRi ; ZgS\ K

y?kqñUkjh; i zu

- izu 1& ¼l xek½ ¼i kb½ vkf.od d{k dka ea rhu vñj fyf[k, A U
- izu 2& vkf.od vkfc/yka ea byDVku fdl Øe ea iðsk djrsgã\ vkj D; ka\ S
- izu 3& O<sub>2</sub> v.kq dk vkf.od d{k d ÅtkzLrj dk fp= cukdj çkuØe Kkr dhft, A S
- izu 4& Dok/e l ã; k fdl sdgrsgã\ pØ.k Dok/e l ã; k dks l e>kb, A U
- izu 5& s, p vkj d d{k dka ds vkÑfr dks cukb, A S
- izu 6& Sp<sup>3</sup>d l ãfjr d{k d dk T; kferh; fol; kl dks l e>kdj bl ds cu/k

dksk dk eku fyf[k, A s

izu 7& vkf.od d{kdkadh l gk; rk l sinf'kr dhft, fd  $N_2$  v.kq eaf=cU/k  
gkrk gS vkj  $He_2$  ea dkbZ vkCU/k ugha gkrk gSA U

### nh?kznÜkj; izu

izu 1& ikmyh ds viotU fl ) kUr l sD; k vfHki k; gS\ ijek.kq l j puk ea  
bl dk D; k egRo gS\ U

izu 2&  $CH_4$ ,  $NH_3$  rFkk  $H_2O$  iR; d v.kq dk dññ; ijek.kq l dfjr voLFkk  
ea gSfQj Hkh buds cak dks k fHkUu&fHkUu gksrsgS l e>kb, A D; ka\ U

izu 3& l a kstdrk cak fl ) kUr dh D; k l hek, j gS\ vkf.od d{kdk fl ) kUr ds  
vk/kkj ij bl dh 0; k[; k fd l izdkj dh xbZ gS\ U

izu 4& cakñ , oafojhr cakñ vkf.od d{kdk ea ikp varj fyf[k, A U

&&00&&

bdkbz & 02  
i nkFkZ dh voLFkk, j & Bkd voLFkk

vfr y?kqñÜkjh; i zu

- i zu 1& vfr pkydrk fdl sdgrsgð\ K
- i zu 2& NaCl ea i R; d Na<sup>+</sup> vk; u] fdrus Cl<sup>-</sup>vk; u l sf?kjk jgrk gð\ K
- i zu 3& fØLVy D; k gð\ K
- i zu 4& CaF<sub>2</sub> ea vk; u F<sup>-</sup> dh l elb; l ð; k dk eku fyf[k, A K
- i zu 5& ; fur l y dh i fjHkk"kk fyf[k, A K
- i zu 6& Ýdsy nkšk ds nks mngj.k nht, A K
- i zu 7& Bkd ka ea vi wktk, j D; ka gkrh gð\ K
- i zu 8& v"Vdks kh; l dgyu dh i fjHkk"kk fyf[k, A K
- i zu 9& F- dñnz fdl sdgrsgð\ K

y?kqñÜkjh; i zu

- i zu 1& fcañq=ñV fdrus izdkj dh gkrh gð\ mngj.k ndj l e>kb, A U
- i zu 2& Bkd ka ea fjfDr; k; fdrus izdkj dh gkrh gð\ i R; d dk uke fyf[k, A K
- i zu 3& vk; fud fØLVyka eaf=T; k dk vuq kr D; k gkrk gð\ fØLVy l j puk ea vk; fud f=T; k dk D; k egRo gð\ U



i 7 u 4& Bkl voLFkk dh i fjHkk"kk nhft, A fØLVyh; Bkl rFkk vfØLVyh;  
Bkl I s vki dk D; k vk'k; gS \ K

i 7 u 5& I hft; e DykjkbM dh fØLVy I j puk fp= }kj k I e>kb, A s

### nh?kzmÙkj h; i 7 u

i 7 u 1& Na<sup>+</sup> vkj Cl<sup>-</sup>vk; ukadh 0; oLFkk ds vuq kj NaCl dh fØLVy I j puk  
dk o.ku dhft, A U

i 7 u 2& f=T; k vuq kr I s D; k I e>rs gδ \ vk; fud ; kfxdka ea I dgyu  
fu/kkj .k ea fdl i zkj I gk; d gS \ U

i 7 u 3& vk; fud] I gl a kst d] vkf.od , oa /kkfRod fØLVy dks fuEukfidr  
fclnqyka ds vk/kkj ij Li "V dhft, & K

- |                 |                  |
|-----------------|------------------|
| (a) j puk bdkbz | (b) cak dh i Ñfr |
| (c) Hkksrd xqk  | (d) cak Å tkz    |

&&00&&

## bdkbZ & 03

foy; u

### vfr y?kqñÜkjh; iZu

- iZu 1& foy; u dh i fjHkk"kk fy[kdj , d mnkgj.k fyf[k, A U
- iZu 2& ; fn 10 xte ; fij; k 100 xte ty eafoys gS rks; fij; k dseksy i Hkk t dh x.kuk dhft, A U
- iZu 3& i kuh ea l k/kkj.k ued ?kkyus ij DoFkukad eaD; k ifjorZu gksxk \ U
- iZu 4& 0-1M l kSM; e Dykj kbM , oa 0-2M l kSM; e Dykj kbM foy; u ea fdl dk DoFkukad T; knk gksxk vksj D; ka \ U
- iZu 5& foy; u ea vk.kfod nD; eku i klr djus ds vko'; d 'krZ D; k gS \ fyf[k, A K
- iZu 6& ijkl j.k , oafol j.k ea dkbZ nks varj yhf[k, A U
- iZu 7& fLFkj DokFkh foy; u dh i fjHkk"kk fyf[k, A K
- iZu 8& jDr dks'kdk dks ty eaMkyus ij Qm (Swell) tkrh gSD; ka \ A
- iZu 9& vkn'kZ foy; u fdl sdgrsgA mnkgj.k fyf[k, A K
- iZu 10& eksyirk dh i fjHkk"kk fyf[k, A K

### y?kqñÜkjh; iZu

- iZu 1& v.kd d; d xqk/keZfdl sdgrsgA \ foy; u ds v.kd d; d xqkka dspkj uke fyf[k, A U
- iZu 2& vkn'kZ , oa vkn'kZ foy; u ea dkbZ pkj varj fyf[k, A U
- iZu 3& ok"i nkc fdl sdgrsgA \ foy; u ds ok"i nkc l s l ca/kr jkAYV ds fu; e dks l e>kb; sA U

i 7 u 4& vkb l k/ksud] gkbi jVksud , oagkbi k/ksud foy; u dh i fjHkk"kk fy[kdj mnkgj.k fyf[k, A K

i 7 u 5& eksyjr k fdl sdgrsgs\ dkfLVd l kMk ds4-0 xte@yhVj l knrk okys foy; u dh eksyjr kkr dhft, A ¼.v.kkkj NaOH ¾ 40½ U

### nh?kznÜkj h; i 7 u

i 7 u 1& ijkl j.k nkc fdl s dgrs gð \ bl ds fu/kkz .k ds cdžys vkš gkVžys fof/k dk l fp= o.ku dhft, A S

i 7 u 2& okà/ gkQ xqkkad fdl sdgrsgs\ bl ds vk/kkj ij foy; u ds vl eku; 0; ogkj dks l e>kb, A U

i 7 u 3& eksyy DoFkukad mlu; u fLFkjkd dh i fjHkk"kk fyf[k, A , d foy; u ea 0-520 xte Xywdkd ¼.v.kkkj ¾ 180½ 80-2 xte ty ea foyš gS rks foy; u dk DoFkukad Kkr dhft, A ¼ty dsfy, K<sub>b</sub> ¾ 0-52 km<sup>-1</sup>½ U

i 7 u 4& fl ) dhft, fd fdl h foy; u dk vki š{k d ok"i nkc voueu foy; u eami fLFkr foyš ds eksy i Hkk t dscjkj gkrk gSA U

&&00&&

bdkbZ & 04  
vk; fud I kE;

vfr y?kqñÜkjh; iZu

- iZu 1& I a ðeh vEy , oa I a ðeh {kkj fdl s dgrs gS\ mnkgj.k fyf[k, A U
- iZu 2& nçy vEy vkš ml ds yo.k ds fefJr foy; u dks D; k dgrs g& ml dk uke , oanksmnkgj.k fyf[k, A U
- iZu 3& pH POH vkš PK<sub>w</sub> ea D; k I çdk gS\ fyf[k, A U
- iZu 4 & pH dh ifjHkk"kk fyf[k, A K
- iZu 5& PH<sub>3</sub> ds I a ðeh {kkjd dk I = fyf[k, A U
- iZu 6& , d vEy dh 'kfDr ml dh fdl i ðfÜk ij fuHkj djrh gS\ U
- iZu 7& NaOH foy; u dk pHeku Kkr dhft , A U
- iZu 8& AgCl I k/kkj.k ued (NaCl) dh rnyuk ea ty ea vf/kd foyš gSA D; ka \ U
- iZu 9& I evk; u i Hkko fdl s dgrs g& \ K

y?kqñÜkjh; iZu

- iZu 1& cQj foy; u dks fuEu fclnq/ka ds vk/kkj ij I e>kb; s & K  
(a) ifjHkk"kk (b) i ðkj (c) fØ; k&fof/k (d) mi ; kx
- iZu 2& foyš rk xqkuQy dh dkbZ rhu mi ; kfxrk fyf[k, A A
- iZu 3& ypl vEy&{kkj vo/kkj.kk dh ifjHkk"kk fy[kdj fuEu ; kfxd ea I s ypl vEy&{kkj NkaV; s & U  
(i) NH<sub>3</sub> (ii) H<sub>2</sub>O (iii) AlCl<sub>3</sub> (iv) SO<sub>2</sub>

izu 5& fl ) dhft, & U

$$\text{pH} + \text{POH} = 14$$

nh?kznÜkjh; izu

izu 1& foyş rk xqkuQy fdl sdgrsgS\ U

; fn 293K ij ty eaAgCl dk foyş rk xqkuQy  $1.5 \times 10^{-10}$  gks rks  
bl rki ij ml dh foyş rk Kkr dhft, A

$\frac{1}{4}$ AgCl dk vk.kfod n0; eku  $\frac{3}{4}$  143-5½

izu 2& vEy , oa {kkj dh fuEu vo/kkj .kkvka dks mnkgj .k l fgr fyf[k, & U

(a) cklVM&ykyh vo/kkj .kk

(b) vkfgfuž l vo/kkj .kk

&&00&&

## bdkbZ & 05

### j l k; fud m"ek xfrdh

#### vfr y?kqñUkjh; i'z u

- i'z u 1& eÞr Åtkzfdl s dgrsgf \ K
- i'z u 3&  $\Delta G$  ds /kukRed] \_\_.kkRed ; k 'kñ; eku l s D; k rkRi ; Z gS \ U
- i'z u 4& cQZ dh , UVRW/h ty l s de gksh gSA D; ka \ U
- i'z u 5& foy; u dh , UVRW/h foyk; d dh rgyuk ea vf/kd gksh gSA D; ka \ U
- i'z u 6& foyfxr fudk; D; k gS \ K
- i'z u 7& ty ok"i] ty vñ cQZ ea , UVRW/h dk c<rk Øe fyf[k, A U
- i'z u 8&  $\Delta H$  dk eku /kukRed rFkk  $\Delta S$  dk eku \_\_.kkRed gkus ij ifØ; k l ðko gksh ; k ugha \ U
- i'z u 9& eÞr Åtkz ifjorZu rFkk l ke; fLFkjkd ea D; k l EclU/k gS \ U
- i'z u 10& cgekaM dh , UVRW/h eafdl i'z kj dk ifjorZu gks jgk gS \ U

#### y?kqñUkjh; i'z u

- i'z u 1& fxcI eÞr Åtkz , oa l y foHko ea l EclU/k LFkfi r dhft , A
- i'z u 2& fuEufyf[kr vfHkfØ; kvka ea , UVRW/h ?kVrh gS vFkok c<fh g\$ dkj .k l fgr l e>kb, &
- (i)  $\text{CaCO}_3(\text{s}) \longrightarrow \text{CaO}(\text{s}) + \text{CO}_2(\text{g})$
- (ii)  $\text{H}_2\text{O}(\text{l}) \longrightarrow \text{H}_2\text{O}(\text{s})$
- i'z u 3& fl ) dhft , fd fLFkj rki vñ fLFkj nkc ij eÞr Åtkz ea deh fudk; }kjk fd; sx; svi ð kj dk; Z dh eki gSA U

izu 4& eÐr Átkz ifjorðu rFkk fdl h iÐe dh Lor% iÐfr7rk dh 0; k[; k  
dhft, A U

nh?kzmÙkj; izu

izu 1& eÐr Átkz l s D; k rkRi ; Z gS \ fl ) dhft, \ U

izu 2& , UVRW/h dks fuEu fclnq/ka ds vk/kkj ij l e>kb, & K

¼½ ifjHkk"kk] ½½ l # , oabdkbZ

½½ i koLFkk ifjorðu ea, UVRW/h ifjorðu

izu 3& , UVRW/h l s D; k rkRi ; Z gS \ ΔH vkS ΔS ds ekuka ds vk/kkj ij  
vfHkfØ; k ds iÑfr dks Li"V dhft, A U

&&00&&

## bdkbZ & 06

vkDI h & vip; u ½ jMkDI ½ vHkfhØ; k, j

### vfr y?kqñÜkj h; iZu

iZu 1& fdl h byDVRM eav) &l sy ds  $E^{\circ}$  dk eku /kukRed dc gkrk gS\ U

iZu 2& i kFkfed l syka dks i q% vkof' kr D; ka ugha fd; k tkrk gS\ U

iZu 3& l rfy jMkDI l ehdj.k fdl sdgrs gS\ K

iZu 4& byDVRM foHko dks i fjHkfh'kr djus okys dk&dk& l sd kjd gS\ K

iZu 5&  $Mn(s)/Mn^{2+}(aq) || Cu^{2+}(aq)/Cu(s)$  ea dk& l k byDVRM \_\_.kkRed gS\ U

iZu 6& vkDI hdj.k l [; k Kkr dhft, & U

(i)  $Cr_2O_7^{2-}$  ea Cr dk (ii)  $KMnO_4$  ea Mn dk

iZu 7&  $FeSO_4$  ea foy; u ea rkps dh NM+ dks Mkyus l sykgk foLFkfi r D; ka ugha gkrk \ U

iZu 8& fo | r jkl k; fud rfy; ka l sD; k l e>rs gS\ K

iZu 9& vkDI hdj.k l [; k dks i fjHkfh'kr dhft, A K

### y?kqñÜkj h; iZu

iZu 1& Mfu; y l sy dk LoPN , oa ukekd r fp= cukb, A s

iZu 2& fo | r jkl k; fud Jskh dh dkbZ pkj e[; fo'kkrk, j fyf[k, A K

iZu 3&  $MgO, CuO$  vkj  $CaO$  ea dk& l k vkDI kbM gkbMst u }kj k vi pkf; r gksk vkj D; ka \ U



- i/zu 4& ^ekud gkbMkst u byDVMM , ukM , oadFkkM+nksuksdh HkkMlr dk; Zdjrk gSA\*\* bl dFku dh i q"V fp= , oa l sy vfHkfØ; k }kjk dhft , A U
- i/zu 5& ekud fo|q okgd cy rFkk l ku; fLFkjkd ea l Ecu/k n'kkb, A U
- i/zu 6& ykgsdh cuh oLrqtksty ds l E idZea jgrh g\$ tæ l scpkusdsfy, fdl fof/k dk mi ; ks djrsg\$ ml fof/k dk l fp= o.ku dhft , A S

### nh?kznÜkj; i/zu

- i/zu 1& fo|q jkl k; fud Jskh ds vuqz ks mnkgj.k l fgr fyf[k, A A
- i/zu 2& fo|q okgd cy , oafHkokUrj ea D; k varj g\$ \ U
- i/zu 3& vkDI hdj.k l q; k dh x.kuk dhft , & A
- (i)  $N_2O_4$  ea N dh
  - (ii)  $C_6H_{12}O_6$  ea C dh
  - (iii)  $K_4[Fe(CN)_6]$  ea Fe dh
  - (iv)  $Na_2S_2O_3$  ea S dh
  - (v)  $MnO_4^-$  ea Mn dh

i/zu 4& fuEu ij l fklr fvli.kh fyf[k, & U

- 1- fo|q jkl k; fud Jskh
- 2- ekud byDVMM foHko
- 3- bZku l sy A

&&00&&

bdkbz & 07  
jkl k; fud cyxfrdh

vfr y?kqñÜkjh; i zu

- i zu 1& nj&fLFkjkd D; k gS \ K
- i zu 2& vfHkfØ; k dh Nne dksV I sD; k I e>rs gä \ K
- i zu 3& ; fn nj fLFkjkd (k) dk eku fyVj eksy &¹ I d.M &¹ gS rks og  
vfHkfØ; k fdl dksV dh gksch A K
- i zu 4& ngyh ÅtkzD; k gS \ K
- i zu 5& vfHkfØ; k dh dksV vksj vk.kfodr k ea varj fyf[k, A %dkbz nk½ U
- i zu 6& vkghu; I I ehdj.k dk I ekdfyr : i fyf[k, A U
- i zu 7& ; fn fdl h jkl k; fud vfHkfØ; k dh nj vfHkd kj dka dh I kUnrk i j  
fuHkj ugha djrh rks og vfHkfØ; k fdl dksV dh gksch \ U
- i zu 8& vfHkfØ; k ds v) &vk; pky dks i fjHkkf"kr dhft, A K

y?kqñÜkjh; i zu

- i zu 1& jkl k; fud vfHkfØ; k dh nj dks i Hkkfor djus okysfdUgh pkj dkj dka  
dk o.ku dhft, A K
- i zu 2& vfHkfØ; k  $2N_2O_5 \longrightarrow 4NO_2 + O_2$  fdl dksV dh gS vksj D; ka \  
U
- i zu 3& fdl h jkl k; fud vfHkfØ; k dh dksV 'ku; gS rks bl vfHkfØ; k dks  
mngj.k I fgr I e>kb, A U
- i zu 4& i Eke dksV dh vfHkfØ; k ds v) &vk; pky Kkr djus dk 0; at d  
fyf[k, A U

i 7 u 5 & i d k ' k j k l k ; f u d v f h k f Ø ; k , o a j k l k ; f u d v f h k f Ø ; k e a v r j f y f [ k , A U

i 7 u 6 & f d l h j k l k ; f u d v f h k f Ø ; k e a r k i c < k u s i j m l d s o x , o a o x & f l F k j k a d  
e a i f j o r z u g k r k g s A b l d F k u d h i q ' V d h f t , A U

### n h ? k z m ù k j h ; i 7 u

i 7 u 1 & i F k e d k s V v f h k f Ø ; k d s f y , l e k d k f y r n j l e h d j . k 0 ; i i l u d h f t , A U

i 7 u 2 & f d l h j k l k ; f u d v f h k f Ø ; k d h n j r k i i j f u h k j d j r h g s b l d F k u  
d h i q ' V d h f t , A v k g h z u ; l l e h d j . k d k s 0 ; i i l u d h f t , A U

i 7 u 3 & v k g h z u ; l l e h d j . k d k s l h / k h j s [ k k d s l e h d j . k d s : i e a f y f [ k , A  
b l l e h d j . k e a x t Q d k < k y D ; k g k s k \ f d l h v i ? k V u v f h k f Ø ; k  
d s v i ? k V u d s f y , r F k k l o g k d s c h p [ k h p s x ; s x t Q l s o Ø d k < k y  
& 9 9 2 0 i k r g v k A f Ø ; k d s l f Ø ; . k Å t k z d h x . k u k d h f t , A S

i 7 u 4 & , d i F k e d k s V d h v f h k f Ø ; k 5 0 f e u V e a 9 0 % i w k z g k s t k r h g s A b l  
v f h k f Ø ; k d k v ) & v k ; p l k y K k r d h f t , A U

& & 0 0 & &

bdkbz & 08  
ukfhkdh; j l k; u

vfr y?kqñÜkjh; i zu

- i zu 1&      cǎjy fdj.kǎfdl s dgrsgǎ \ K
- i zu 2&      n0; eku {kfr l sD; k l e>rs gǎ \ K
- i zu 3&      vkš r vk; pky fdl s dgrsgǎ \ K
- i zu 4&      fuEukǎdr vfhkfØ; k ea X D; k gS & U
- i zu 5&      tc dkbz jšM; kš fDVo rRo , d α-d.k mRI ftž djrk gšrksu; srRo  
dk vkoÜkZ l kj.kh eaD; k fLFkr gkrh gS \ U
- i zu 6&      ml jšM; kš fDVo fo?kVu Jskh dk uke crkb, tks <sup>238</sup>/<sub>92</sub>U l s i kjEHk  
gkdj <sup>286</sup>/<sub>82</sub>U ea l ektr gkrh gS \ U
- i zu 7&      Ñf=e rRokarj.k D; k gS \ K
- i zu 8&      fdl h jšM; kškehž inkFkZ dk v) &vk; pky 50 fnu gS A 200 fnu  
i 'pkr~fdruh ek=k 'kšk jgšx \ ml dk ifr'kr Kkr dhft, A U
- i zu 9&      α-d.k rFkk He i jek.kqeaD; k varj gS \ U

y?kqñÜkjh; i zu

- i zu 1&      jkl k; fud vfhkfØ; k , oaukfhkdh; vfhkfØ; k eadkbzpkj vlrj fyf[k, A  
U
- i zu 2&      jšM; ks , fDVo fo?kVu Jskh D; k gS \ ; g fdrus i d kj dh gkrh gS \ K
- i zu 3&      chMj fj , DVj fdl s dgrsgǎ \ vfhkfØ; kvka l fgr o.kž dhft, A K
- i zu 4&      jšM; ks dkcž vdu l s vki D; k l e>rs gǎ \ Li "V dhft, A bl dk

mi; ks dgk; fd; k tkrk gS \ ukfHkdh; fofdj.kka ds t f od [krjs  
fyf[k, A K

## nh?kz mUkj; i zu

i zu 1& ukfHkdh; fj; DVj dk l fp= o.ku dhft, A S

i zu 2& jSM; ks dkcU dky fu/kk. k rduhd dk vkfo"dkj fdl oSkfud us  
fd; k \ bl rduhd dk mi; ks djdsrouLi fr; k er ik.kh dsvk; q  
dk fu/kk. k fdl idkj fd; k tkrk gS \ A

i zu 3& fdl h jSM; ks l fØ; inkFkZ dsv) &vk; qky vks vks r v) &vk; qky  
l svki D; k l e>ragS \ buea ijLij l Ecu/k LFkfi r dhft, A U

i zu 4& fl ) dhft,  $\lambda = \frac{2.303}{t} \log \frac{N_0}{N}$  A bl l ehdj.k dsvk/kkj ij vks r  
vk; qdks i fjHkkf"kr dhft, A U

i zu 5&  $\lambda$  fdj.kka ij fo | q , oa p fcdh; Js kh dk i Hkko D; ka ugha i M f k gS \  
; y f u; e  ${}_{92}^{238}\text{U}$  ds jSM; ks sDVo yM  ${}_{82}^{206}\text{U}$  ea i f j or U gks us ij eDr gks us  
okys  $\alpha$  r Fkk  $\beta$  d.kka dh l f; k Kkr dhft, A U

&&00&&

# bdkbz & 09

## l rg j l k; u

### vfr y?kqñkjh; i zu

- i zu 1& rki ?kVkusrFkk rki c<kusij fdl h xš dk fdl h Bkd ea v f/k'kkšk.k  
ij D;k i Hkko i Mfk gš \ U
- i zu 2& mRij.k dh ifjHkk"kk fyf[k; s , oa , d mngj.k nhft , A K
- i zu 3& nD Lugh dkykbM dh nks fo'kskrk, a fyf[k; s A U
- i zu 4& fdl h vk; u dh LdUnu {kerk fdl ij fuHkj djrh gš \ U
- i zu 5& Mk; fyf l ¼viku½ fdl s dgrsgš \ K
- i zu 6& Lo.kZ l [; k fdl s dgrsgš \ K
- i zu 7& dkyk; Mh foy; u ea izdk'k fdj.k tkusij dkyk; Mh d.kka }kj k izdk'k  
dks izdf. Rr dj nh tkrh gš; g ?kVuk D; k dgykrh gšA bl ds i Hkko  
dks fyf[k, A U
- i zu 8& ftXyj ukWk mRij d fdl s dgrsgš \ bl dk l # , oa , d mi ; ks  
fyf[k, A K

### y?kqñkjh; i zu

- i zu 1& mfpr mngj.k ndj fuEu dks l e>kb; s %& K  
¼¼ ckmuh xfr] ¼¼ fV.My i Hkko
- i zu 2& nD Lugh dkykbM rFkk nD fojkskh dkykbM eapkj vUrj fyf[k; A U
- i zu 3& ik; l fdrus izdkj dsgkrs gš \ i R; d dk l f{klr o.ku dhft , A K
- i zu 4& fo | r d.k l pyu dk l fp= o.ku dhft , A S

## nh?kz mÙkjh; i zu

i zu 1& mRij.k dsek/; fed ; kfxd fl ) kÙr dksnksmngj.k ndj l e>kb; A  
U

i zu 2& Hkksrd vf/k' kksk.k , oajkl k; fud vf/k' kksk.k ea ikp varj fyf[k; sA U

i zu 3& nD Lugh dksykbM , oano fojkskh dksykbM eadkbzi kp vÙrj fyf[k; A  
U

i zu 4& fuEu ij l fklr fvli.kh fyf[k, & U  
¼½ LdUnu] ½½ fo| r ijkl j.k ¾½ fel sy

i zu 5& ¼½ i fVhdj.k fdl sdgrsg\ mnkj.k fyf[k, A A  
½½ unh ds ty }kj k MvV k fuekz k fd; k tkrk gSA D; ka \

&&00&&

bdkbz & 10 & ¼½  
 I em 15 , oa 16 ¼d½ p Cykd ds rRo

vfr y?kqñÜkjh; i zu

- i zu 1& I em 15 ds rRokæ ds uke , oa I dr fyf[k; s A K
- i zu 2& ukbVktu ds vi I kekU; xqk D; k gS\ K
- i zu 3& vk; uu folko fdl sdgrsgð\ K
- i zu 4& ud yj vflkdeð fdl sdgrsgð\ I ≠ fyf[k, A K
- i zu 5& BMs , oa vf/kd ruqHNO<sub>3</sub> vEy ds I kFk Zn dh fØ; k fyf[k; s A U
- i zu 6& QkLQkj I ds dkbz nks mi ; kx fyf[k; s A A
- i zu 7& QkLQkj I ds nks vkDI h vEyks ds uke , oa I ≠ fyf[k; s A K
- i zu 8& vky; e D; k gS\ I ≠ fyf[k, A U
- i zu 9& vEyjkt fdl sdgrsgð\ bl ds nks xqk fyf[k; s A K

y?kqñÜkjh; i zu

- i zu 1& ukbVktu ds fdlgh rhu vkDI h vEyka ds I ≠ o I j puk fyf[k; s A U
- i zu 2& vekfu; k xS dks P<sub>2</sub>O<sub>5</sub> vkSj CaCl<sub>2</sub> }kjk 'kðd D; ka ugha fd; k tk I drk \ dkj .k crkbz; s A U
- i zu 3& QkL Qkj I ds I eku ukbVktu is Vkg; ykbM ugha cukrk dkj .k Li "V dhft; s A U
- i zu 4& vekfu; k cukus dh gsj fof/k dk fl ) kUr fyf[k; s A U
- i zu 5& vij: i rk fdl sdgrsgð\ I YQj ds vij : i fyf[k; s A U



## nh?kz mÙkjh; i zu

i zu 1& ukbVd vEy fuekzk dh vktVokYM fof/k dk ukekfidr fp= cukb; A  
S

i zu 2& I hesu vkstkukbtj }kjk vkstkcu cukus dh fof/k , oa vkstkcu dk 'kksku  
dsckjs eafyf[k; sA U

i zu 3& H<sub>2</sub>SO<sub>4</sub> cukus dh I idZ fof/k , oa I hl d{k fof/k I s I Ei dZ vPNh  
fof/k gSA D; ka \ U

i zu 4 SO<sub>2</sub> vkj Cl<sub>2</sub> dsfojat u fØ; k eavvj I e>kb; sA U

&&00&&

bdkbz & 10 & 1/2

P Cykd ds rRo 17 , oa 18 I eng ds rRo

vfr y?kqñÜkjh; ižu

- ižu 1& mRÑ"V xš fdl sdgrsgđ\ K
- ižu 2& jšM; kškehZ mRÑ"V xš dk uke , oa I dsr fyf[k; sA K
- ižu 3& I eng 17 ds rRoka dk uke , oa I dsr fyf[k; sA K
- ižu 4& ikl; Dykšju I svki D; k I e>rs gđ\ U
- ižu 5& vürj gšyktu ; kšxd fdl sdgrsgđ\ K
- ižu 6& gšyktu icy vkDI hdkj d gSA D; ka \ K
- ižu 7& mRÑ"V xš ka eal sdoy tsukñ gh okLrfod jkl k; fud ; kšxd cukrk gSA D; ka \ U
- ižu 8& HF , d nčy vEy gš tčfd HI , d icy vEy gSA dkj .k Li"V dja U

y?kqñÜkjh; ižu

- ižu 1& ųlykšju Dykšju dh vi škk T; knk fo | r \_\_.kkRed gš tčfd byĐVku cākřk dk eku ųlykšju dk DYkšju I sde gSA I e>kb, A U
- ižu 2& mRÑ"V xš I keku; r% ; kšxd ugha cukrsA blga byĐVku 0; oLFkk ds vuđ kj I e>kb; sA U
- ižu 3& Dykšju doy , d gh vkDI hdj .k voLFkk 1/2 inf'kr djrh gSA D; ka \ U
- ižu 4& so<sub>2</sub> rFkk ci<sub>2</sub> dh fojatu fØ; k ea dkbz rhu vürj fyf[k; sA U
- ižu 5& mRÑ"V xš ka dsegroi wkz dkbz rhu xqk fyf[k; sA A
- ižu 6& mRÑ"V xš ka ds mi ; kšx fyf[k; sA S

i 7& mRÑ"V x\$ ka dh vk; uu Åtkz vf/kd gkrh gSA dkj .k crkb; sA U

i 8& Mskj dh pkjdksy fof/k }kjk mRÑ"V x\$ ks dk i Fkddj .k d\$ sfd; k  
tkrk g\$ \ U

### nh?kz mUkj; i 7 u

i 1& Dykfju cukusdh u\$ I u I sfof/k dks I fp= I e>kb, \ s

i 2& gsykstuka dsfuEufyf[kr xqkka dh fuEu fclnqka i j 0; k[; k dhft , & s

¼½ jkl k; fud fØ; k'khyrk                      ½½ i jek.kq f=T; k

⅓½ cak Åtkz    ¼½ vkDI hdj .k voLFkk

⅕½ byDVku cu/kqk

i 3& Cyhfpax i kmMj dsfuekzk dh gstuDyoj fof/k dk I fp= o.ku dhft ; A

i 4& mRÑ"V x\$ sfdrus izdkj I s ; k\$xd cuk I drsg\$ \ i R; d izdkj dk  
, d mnkgj .k nhft ; s , oa I j puk cukb; sA

&&00&&

## bdkbz & 11

I Øe.k o vlrj I Øe.k rRoka dk j l k; u

### vfr y?kqñÜkjh; i zu

- i zu 1& I Øe.k rRo fdl sdgrsgå\ K
- i zu 2& vlrj I Øe.k rRo fdl sdgrsgå\ K
- i zu 3& ; yfu; e fdl Jskh dk l nL; gS\ D; ka\ K
- i zu 4& feJ /kkrqfdl sdgrsgå\ nks mngj.k nhft, A K
- i zu 5& yØFksukbM Jskh ea dty fdrus rRo gS\ mudsuke fyf[k; sA K
- i zu 6& dkWj ds nks v; Ldks dsuke o l # fyf[k; sA K
- i zu 7& yØFksukbM l dpu D; k gS\ K

### y?kqñÜkjh; i zu

- i zu 1& I Øe.k rRoka ds vk; u i k; %jachu gkrs gS\ D; ka\ U
- i zu 2& fuEufyf[kr vk; uka ea l sfdl dk vk?kwkz l cl svf/kd gksck & U  
Cr(III), Mn(II), Fe(II) Cu(II)
- i zu 3& yØFksukbM D; k gS\ mudks i Fkd djuk D; ka dfBu gS\ l e>kb, A U
- i zu 4& I Øe.k /kkrq; vkl kuh l s feJ /kkrq; D; ka cuk yrh gS\ U
- i zu 5& dkWj i k; jkb fVI l s dkWj dsfu" d" kZ k ea iz Ør i nksdk uke , oamuea  
iz Ør jkl k; fud vfHkfØ; kvka dk l ehdj.k fyf[k; sA U
- i zu 6& fl Yoj Xykl Ag<sub>2</sub>S l s 'kq) pkanh i ltr djus dh fof/k dks l fklr ea  
fyf[k; sA U
- i zu 7& i Fke l Øe.k Jskh ea s uht dk xyuka l cl s de gkrk gSA D; ka\  
U

# nh?kz mÙkj; i zu

i zu 1& Qk/kxkQh dks fuEu fclnq/ka ij l e>kb; s& s

(i) lys/ ; k fQYe cukuk (ii) fp=yuk

(iii) Møyi eV

(iv) fLFkjhdj.k (v) fi V/hak

i zu 2& l Øe.k rRo mi l gl ş kat h ; kfxd cukrsgð\ dkj.k l fgr Li"V djka  
A U

i zu 3& vEyh; ] mnkl hu vkj {kkjdh; ek/; e ea ikv/f'k; e i jeXus/ ds vkDI h  
dkjd xqk l e>kdj i R; d dk mnkgj.k nhft; sA U

&&00&&

## bdkbz & 12

I ello; ; kfxd ds j l k; u

### vfr y?kqñÜkj; i zu

- i zu 1& fyxsM fdl s dgrsg\ K
- i zu 2& gkbM\ I eko; rk dks mnkgj.k I fgr i fjHkkf"kr dhft, A U
- i zu 3& EDTA dk ijk uke , oal = fyf[k, A K
- i zu 4& dhys\ ; kfxd fdl s dgrsgSA , d mnkgj.k fyf[k, A K
- i zu 5& D; k gkrk gS tc AgCl dks NH<sub>4</sub>OH eaf oys djrs gS\ U

### y?kqñÜkj; i zu

- i zu 1& cuj dk mi I gl a kst drk fl ) kr ds vflkxghr fyf[k, A K
- i zu 2& I dyka ds LFkkf; Ro dks i Hkkfor djus okys i ed[k dkjd dks & dks I s gS\ fyf[k, A K
- i zu 3& mi I gl a kst h ; kfxd ds dkbz pkj mi ; ks fyf[k, A A
- i zu 4& I a kst drk cak fl ) kUr ds vk/kkj ij [Zn(NH<sub>3</sub>)<sub>4</sub>]<sup>++</sup> I dy dh I jpuk I e>kb; sA s
- i zu 5& f}d yo.k , oal dy yo.k ea dkbz pkj vrj fyf[k, A U
- i zu 6& I dyka ea T; kferh I eko; rk dks mnkgj.k I fgr I e>kb; sA A

### nh?kz mÜkj; i zu

- i zu 1& vk; uu , oal cak I eko; rk dh i fjHkk"kk fy[kdj nk&nks mnkgj.k fyf[k, A K

i/ u 2& I a kst drk cak fl ) kar ds vk/kkj ij  $[\text{FeF}_6]^{3-}$  I dny dh T; kferh , oa p[icdh; xqk dh 0; k[; k dhft , A s

i/ u 3& fuEu I dny ; kfxd dk I = fyf[k, & U

- (i) V $\text{S}/\text{Kl}$  k; uksufdy $\text{V}$  (II) vk; u
- (ii) i k $\text{S}/\text{S}'$  k; e g $\text{Dl}$  kl k; uk $\text{Qj}$  $\text{V}$  (II)
- (iii) g $\text{Dl}$  k, Doks  $\text{O}kfe$ ; e (III) Dykj kbM
- (iv) Mkb, ehu fl Yoj (I) DYkj kbM
- (v) i k $\text{S}/\text{S}'$  k; e V $\text{S}/\text{kvk}$ ; k $\text{Mks}$  ejD; j $\text{V}$  (II)

i/ u 4& fuEu I dny ka ds IUPAC uke fyf[k, & A

- (i)  $\text{K}_2[\text{PtCl}_6]$
- (ii)  $[\text{Pt}(\text{NH}_3)_2\text{Cl}_2]$
- (iii)  $[\text{Ni}(\text{CO})_4]$
- (iv)  $\text{K}[\text{Ag}(\text{CN})_2]$
- (v)  $[\text{Co}(\text{en})_3]^{3+}$

&&00&&

## bdkbz & 13

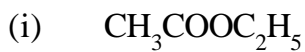
vkDI htU ; Ør fØ; kRed l em ij vk/kkfjr dkctud ; kfxd

### vfr y?kqñUkjh; iZu

iZu 1& Qkefyu fdl sdgrsgñ \ bl dsnksmi ; kx fyf[k, A A

iZu 2& bFkj dh l jþuk dks l e>kb; sA s

iZu 3& fuEu ; kfxdka ds IUPAC uke fyf[k, & U



iZu 4& Mkb, fFky bFkj cukusdh fofy; el u bFkjhdj .k fof/k l rr fof/k ugha gSD; ka ¼kl k; fud l ehdj .k fyf[k, ½ U

iZu 5& Qkfebl vEy] , l hfVd vEy dh vi\$kk izy g\$ D; ka \ U

iZu 6&  $\text{CH}_3\text{CONH}_2 \xrightarrow[\Delta]{\text{P}_2\text{O}_5} \text{A} \xrightarrow[4[\text{H}]]{\text{Sn} + \text{HCl}} \text{B}$  ea A , oa B dk igpku dj uke , oa l # fyf[k, A U

### y?kqñUkjh; iZu

iZu 1& D; k gkrk gS tc & ¼doy l ehdj .k , oa mRi knks ds uke fyf[k, ½ U

(i) HCHO dh vfhkfo; k veku; k ds l kFk gkrh gSA

(ii) HCHO dks l knz NaOH ds l kFk xel dj rsgñA

(iii) d\$Yl ; e , l hv\$ , oad\$Yl ; e Qke\$ dks 'kñd vkl ou fd; k tkrk gñ

(iv) d\$Yl ; e , l hv\$ dk 'kñd vkl ou dj rsgñA



i 2u 2& HCHO, CH<sub>3</sub>CHO, oal hVksu dh fØ; k'khyrk dksdkj .k I fgr I e>kdj  
bl dk Øe fyf[k, A U

i 2u 3& fuEu ifjorZu dS s djks & 1/2 dny I ehdj .k fyf[k, 1/2 U

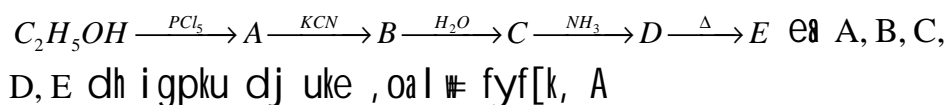
(i) CH<sub>3</sub>CHO dks vkbl ks kfi y , Ydkgy

(ii) cst yfMgkbM I scat kbu

(iii) , I hVksu I s Dykj kQkeZ

(iv) , I hVkekbM I sefky , ehv

i 2u 4& fuEufyf[kr vfHkfØ; k dks iwZ dhft , & U



i 2u 5& 'kh?kz fl jdk fof/k }kjk , I hfVd vEY ds fuekZk dh fof/k dk I fp= o.kZu dhft , A s

### nh?kz mUkjh; i 2u

i 2u 1& iz kx'kkyk ea QkfeZd vEY cukus dh fof/k dk fuEufkdr fclnyka ds vk/kkj ij o.kZu dhft , & s

1/4 1/2 ukekdr js[kkfp= 1/2 1/2 vko' ; d I ehdj .k

1/3 1/2 mi ; kx

i 2u 2& , I hfVd vEY I sikjtk dj fuEu ; kfxd dS siklr djks & U

1/4 1/2 eFksu 1/2 1/2 , Fksu

1/3 1/2 , fl VkekbM 1/4 1/2 , I hfVy Dykj kbM

1/5 1/2 , fFky , I hVv

i 7 u 3& i z kx'kkyk ea , I hVfYMGkbM cukus dh fof/k dk I fp= o.ku dhft ,  
, oabl ds nks mi ; kx fyf[k, A s

i 7 u 4& fuEu vfHkfØ; kvka dks jkl k; fud I ehdj .k I fgr fyf[k, & U  
¼½ , YMksy I akuku] ½½ fV' ksdks vfHkfØ; k  
½½ i fdU vfHkfØ; k A

&&00&&

## bdkbz & 14

N- ; Ør fØ; kRed l em

### vfr y?kqñÙkj h; i zu

i zu 1& , fuyhu e fky , ehu dh rnyuk ea nçy {kj g\$ D; ka \ U

i zu 2&  $\text{NH}_2$   
C1=CC=CC=C1  $\xrightarrow[0-5^0]{\text{NaNO}_2+\text{HCl}}$  A  $\xrightarrow{\text{H}_2\text{O}}$  B ea A , oa B dh igpku dj uke , oa l ≠  
 fyf[k, A U

i zu 3& ukbVñcahu l s , uhyhu d\$ s i klr djks \ l ehdj .k fyf[k, A U

i zu 4& fgll cxZ vñkdeð fdl sdgrsgñ \ bl dk l ≠ fyf[k, A K

i zu 5& dlfcy , ehu vñkfØ; k dk jkl k; fud l ehdj .k fyf[k, A K

i zu 6&  $\text{C}_3\text{H}_3\text{N}$  v . kñ ≠ ds nks l eko; h l j puk l ≠ fyf[k, A U

i zu 7& , fky , ehu , oa , uhyhu ea dkbz nks varj fyf[k, A U

i zu 8& ^ehjcu dk rny\*\* fdl sdgrsgñ \ bl dk l ≠ fyf[k, A K

i zu 9& , uhyhu dk ukbVñhdj .k l jyrk l sugha gkrk gSD; ka \ U

### y?kqñÙkj h; i zu

i zu 1& fuEu ifjorù d\$ sdjks & ¼ dny jkl k; fud l ehdj .k fyf[k, ½ U

¼½ e fky , ehu l s , fky , ehu

¼½ , fky , ehu l s e fky , ehu

i zu 2& D; k gkrk tc ¼ jkl k; fud l ehdj .k fyf[k, ½ U

(i) ukbVñcahu dk vEyh; ek/; e ea mi p; u gkrk gSA

(ii) e fky l kbukbM dk  $\text{LiAlH}_4$  dh mi fLFkr ea vi p; u

- (iii) , l hVkekbM dk P<sub>2</sub>O<sub>5</sub> dh mi fLFkfr eafut ÷ yhdj .k
- i zu 3& i kFkfed] f}rh; d , oarrh; d , ehu dsfoHknhdj .k dh fgd cxZi jh{k .k dks jkl k; fud l ehdj .k l fgr l e>kb; sA U
- i zu 4& 1<sup>0</sup>]2<sup>0</sup> , oa3<sup>0</sup> , ehu dh {kkjh; rk dh 0; k[; k dj bl ds {kkjh; rk dks c<rs gq Øe eafyf[k, A U
- i zu 5& ukbVRby rFkk vkbl kskbVRby eadkbZrhu varj fyf[k, A U

### nh?kz mÜkj; i zu

- i zu 1& , fufyu l si kjkk dj fuEu ; kfxd d\$ si klr dj aks & ½ dby jkl k; fud l ehdj .k fyf[k, ½ U
- (i) QhukW (ii) Dykj kcat hu
- (iii) Qsuy vkbl ks l kbukbM
- (iv) i jk c\$ k\$ Douks (v) , fl VuhykbM
- i zu 2& i z kx' kkyk ea , fufyu cukus dh fof/k dk o. kZ dhif t , , oa ukekfidr fp= cukdj vko' ; d l ehdj .k fyf[k, A s
- i zu 3& fuEu vfHkfØ; k l s jkl k; fud l ehdj .k l fgr fyf[k, & U
- (i) gkQe\$ eLVMZ vkW y vfHkfØ; k
- (ii) Mkb, st kshdj .k
- (iii) xfo; y FkSykekbM vfHkfØ; k

&&00&&

## bdkbZ & 15

nšud thou ea j l k; u

### vfr y?kqñÜkj h; iZ u

- iZ u 1& i kÑfrd , oa l áyſ"kr j c j ds , dydka dk uke , oa l j puk l ≠ fyf[k, A U
- iZ u 2& [kkn; i f j j {kd fdl s dgrs gđ \ mnkgj .k fyf[k, A K
- iZ u 3& fMVZt & / l kcp l s vPNk gkrk gđ D; ka \ U
- iZ u 4& Nylon 6 , oa Nylon 66 ea dkbZ nks vrj fyf[k, A U
- iZ u 5& Ñf=e feBkl mRi lu djusokysfdl h , d jkl k; fud ; kšxd dk uke , oa l ≠ fyf[k, A K
- iZ u 6& l ákuu cgyd , oa ; kskRed cgyd ea nks vrj fyf[k, A U
- iZ u 7& iZ kkrd fdl s dgrs gđ \ mnkgj .k fyf[k, A K

### y?kqñÜkj h; iZ u

- iZ u 1& fuEu cgydka ea , dyd dk uke , oa l j puk l ≠ fyf[k, A U  
(i) Buna-s (ii) PVC (iii) PAN (iv) cčlykbV
- iZ u 2& Fkešy k fLVd , oa Fkešš šVx ea dkbZ pkj vrj fyf[k, A U
- iZ u 3& fuEu dks l e>kb, & K  
¼½ l YQk vksk/kh ½½ fu'prd
- iZ u 4& fuEu jat dks ds l j puk l ≠ fyf[k, & K

- (i) ešFky vkjæt
- (ii) fQykwY¶Fksyhu
- (iii) esydkbV xhu
- (iv) ,fytkjhu

nh?kZ mÜkjh; iZu

iZu 1& I áyš"kr jšks ,oa i kÑfrd jšks fdl s dgrsgš \ cktkj eafcdus okys di M&l keku; r% 'kq) I áyš"kr jšks l su cukdj i kÑfrd jšks ds l kFk feyk dj cuk, a tkrsgš D; ka \ A

iZu 2& fuEu dks l e>kb, & K  
 ¼½ Øhe ½½ nqk/l uk'kd

- iZu 3&
- (i) HkksT; jx fdl s dgrsgš A U
  - (ii) xedl u dk l # ,oa l j puk fyf[k, A
  - (iii) i freyšj ; k ds nks vkšf/k dk uke fyf[k, A

&&00&&

# 1- lkjek.kq l j puk

, oa

## jkl k; fud vkca?ku

1/4 1s rFkk 2s d{kdka ea ukMh; i`Bka dh l d; k Øe" k% gksxh

- (A) 1 o 2            (B) 2 o 4            (C) 2 o 1            (D) 0 o 1

1/2 O<sub>2</sub><sup>2-</sup> fuEu dk l ebyDVtuh; g&

- (A) N<sub>2</sub>            (B) F<sub>2</sub>            (C) NO            (D) CO

1/3 fuEu ea vupfcdh; g&

- (A) C<sub>2</sub>            (B) O<sub>2</sub><sup>2-</sup>            (C) O<sub>2</sub><sup>2+</sup>            (D) O<sub>2</sub><sup>-</sup>

1/4 fuEu ea l cl s vf/kd LFkkbZ g&

- (A) O<sub>2</sub><sup>-</sup>            (B) O<sub>2</sub><sup>+</sup>            (C) O<sub>2</sub>            (D) O<sub>2</sub><sup>2-</sup>

1/5 vkDI ht u v.kq dh vupfcdh; i dfr fuEu byDVkfud fol; kl ds vk/kkj i j l e>kbZ tk l drh gS

- (A)  $\sigma(2P_z)^1, \pi(2P_x)^1$             (B)  $\pi(2P_x)^1 = \pi(2P_y)^1$   
 (C)  $\sigma(2P_z)^1 \pi(2P_y)^1$             (D)  $\pi^*(2P_x)^1 \approx \pi^*(2P_y)^1$

1/6 CIF<sub>3</sub> dh vkdfr gsrh gS &

1/4 l ery f=dks h; 1/2 f=dks h f}fi jkfeMh

1/3 f=dks kh fi jkfeMh 1/4 T- vkdkj

1/7 v.kq@vk; u tks Sp<sup>3</sup> d<sup>2</sup> l dj.k n"kkzk gS &

- (A) XeF<sub>4</sub>            (B) SF<sub>6</sub>  
 (C) XeF<sub>6</sub>            (D) [Cr(NH<sub>3</sub>)<sub>6</sub>]<sup>3+</sup>

1/8 vk; u O<sub>2</sub><sup>2+</sup> ds fy; s vkca?k Øe dk eku D; k gksxk

(A) rhu (B) nks (C) rhu (D) plj

1/2 fdl d{k d sfy; s n=4 , oa l=3 gkxk

(A) 4p d{k d (B) 3d d{k d

(C) 4d d{k d (D) 3s d{k d

1/2 fuEu ea l s d k u l s ; k s x d ea mi l gl a k st h ca k g SA

(a) NaCl

(b) Cl<sub>2</sub>

(c) NH<sub>4</sub>Cl

(d) AlCl<sub>3</sub>

Answer :

Q.N.	1	2	3	4	5	6	7	8	9	10
Ans	D	B	D	B	D	D	C	A	A	C



## 2- Bkl voLFkk

1/1½ 6% I ello; okyk ; ½e gS

- (a) NaCl, CsCl (b) KCl, CsCl  
(c) NaCl, KCl (d) KCl, TiCl

1/2½ I kSM; e DykjkbM dk tkyd gSA

- (a) 'kVelks kh; (b) v'V Qydh;  
(c) prqQydh; (d) oxlI eryh;

1/3½ ghjs dk fØLVy mnkgj .k gSA

- (a) vk; fud tkyd (c) /kkfRod tkyd  
(b) I g I a kstd tkyd (d) vkf.od tkyd

1/4½ c& }kjk LFkfi r rjæ I ehdj .k gS

- (a)  $n\lambda = 2d \sin \theta$  (b)  $n\lambda = \sqrt{2} \sin \theta$   
(c)  $n\lambda = 2d \cos \theta$  (d)  $n\lambda d = d \tan \theta$

1/5½ vupfcdh; i nkFkZ dk mnkgj .k gS

- (a) F<sub>2</sub> (b) N<sub>2</sub> (c) O<sub>2</sub> (d) CO<sub>2</sub>

1/6½ VktLVj I s/ka ds fuekZk ea iz Ør gksus okyk rRo gS &

- (a) Al (b) Si (c) Cu (d) Zn

1/7½ NaCl ds Bkl tkyd ea i R; d Na+ dy fdrus Cl<sup>-</sup> I sf?kjs jgrk gS

- (a) 4 (b) 8 (c) 6 (d) 2

1/8½ Qyd d fØnr ?kuh; dkf' Bdk ea i jek.kvka dh I ; k gksh gSA

- (a) 1 (b) 2 (c) 4 (d) 6

1/9½ vfØLVyh; Bkl i nkFkZ gS

(a)  $\text{Fe}_3\text{O}_4$  (b)  $\text{Mn}_2\text{O}_3$

(c)  $\text{Fe}_2\text{O}_3$  (d)  $\text{MnO}$

10% Q.10. The oxidation state of Mn in  $\text{KMnO}_4$  is

(a)  $\text{Fe}_3\text{O}_4$  (b)  $\text{Mn}_2\text{O}_3$

(c)  $\text{Fe}_2\text{O}_3$  (d)  $\text{MnO}$

Answer :-

Q.n	1	2	3	4	5	6	7	8	9	10
Ans.	A	B	C	A	C	B	C	C	C	A

### 3- foy; u

1/4½ ekyy voueu fLFkjkd fuEu ij fuHkij gkrk gA

- (a) foy; dh i dfr (b) foyk; d dh i dfr  
(c) foyk; d ea foy; ds foy; u dh m'ek (d) foy; u dk ok'i nkc

1/2½ vfHk0; fDr dh fdl fof/k ea foy; u dk I kUnz k rki I sLora= gkrk gS

- (a) ekyyrk (b) ukezyrk  
(c) Okezyrk (d) ekyyrk

1/3½ 120g ; ij ; k 5 yHVj foy; u eami fLFr gS ; ij ; k dk I fØ; nØ; eku gS

- (a) 0.2 (b) 0.06  
(c) 0.4 (d) 0.8

1/4½ Viki tV ds , d ueus ds 500g es 0-2g flyk; kbM I kUnz k gS ppm ds : lk ea flyk; kbM I kUnz k gS

- (a) 250 (b) 200  
(c) 400 (d) 1000

1/5½ 10ml I knz  $H_2SO_4$  1/18 ekyy 1/2 dks 1 yHVj rd ruqfd; k tkrk gS ruqvEy dh yxHkx "kfDr gS

- (a) 0.18N (b) 0.09N  
(c) 0.36N (d) 18.0N

1/6½ , d vkn"lz foy; u og gS tks

- (a) jkmYV dsfu; e l s \_\_.kRed fopyu inf"kr djrk gSA
- (b) jkmYV dsfu; e l s/kukRed fopyu inf"kr djrk gSA
- (c) jkmYV dsfu; e l s dkbZ l Ec/k ugh j [krk gSA
- (d) jkmYV dsfu; e dk ikyu djrk gSA

1/7½ jkmYV dk fu; e fdl l s l Ecf/kr gSA

- (a) Rkuqfoy; uks dsok'lk nkc dk voueu
- (b) DoFkukrd dk mlu; u
- (c) fgekrd dk voueu
- (d) i jkl j .k nkc

1/8½ fuEufyf[kr ea l s dksu l k v.kd d; d xqk /keZ ugha gS

- (a) DoFkukrd dk mlu; u
- (b) fgekrd dk voueu
- (c) lkjkl j .k nkc
- (d) idkf"kd l fØ; rk

1/9½ 2m H<sub>2</sub>SO<sub>4</sub> dh ukeZyrk fuEu ea l sgksch

- (a) 2N
- (b) 0.4N
- (c) N/2
- (d) N/4

1/10½ idfr eadgy fdrus idkj dsfoy; u ra= l lko gSA

- (a) 6
- (b) 9
- (c) 10
- (d) 12

Answer :-

Q.N.	1	2	3	4	5	6	7	8	9	10
Ans	D	D	C	C	C	D	A	D	B	B

#### 4- vk; fud I kE;

- 1- ty dk 298 K ij pH eku gA  
 (a) 'kH; (b) 7 l svf/kd  
 (c) l kr (d) 7 l sde
- 2-  $H_2PO_4^-$  dk l a keh {kkjd gA  
 (a)  $HPO_4^{2-}$  (b)  $PO_4^{3-}$   
 (c)  $H_3PO_4$  (d)  $H_3PO_3$
- 3- izy fo | r vi ?kv; dk , d mnkgj .k gS  
 (a) ; ij ; k (b) veksu; e gkbMRDI kbM  
 (c) 'kdj k (d) l kSM; e , l hvS/
- 4- dk u l k izyre ckLVM {kkj gS %&  
 (a)  $ClO^-$  (b)  $ClO_2^-$   
 (c)  $ClO_3^-$  (d)  $ClO_4^-$
- 5-  $10^{-8}$  eksyj  $HCl$  dk pH eku gS &  
 (a) 8 (b) & 8  
 (c) 7 o 8 ds chp (d) 6 , oa 7 ds chp
- 6- fdl h foy; u dk  $pH = 5,4$  gS] dk gkbMRst u vk; u l kUnz k eksy i fr fyVj ea gksxA  
 (a) 0-398 (b)  $3.98 \times 10^{-6}$   
 (c)  $6.98 \times 10^{-6}$  (d)  $1.98 \times 10^{-6}$
- 7- , d vEy dh 'kDr ml dh bl iDrRr ij fuHkj djrh gA  
 (a) i kS/kWu xg.k djus dh

- (b)  $0.001 \text{ M NaOH}$   $\text{pH}$   $11$   $\text{g}$
- (c)  $0.001 \text{ M NaOH}$   $\text{pH}$   $3$   $\text{g}$
- (d)  $0.001 \text{ M NaOH}$   $\text{pH}$   $11$   $\text{g}$
- 8-  $0.001 \text{ M NaOH}$   $\text{pH}$   $11$   $\text{g}$
- (a)  $10^{-3}$  (b)  $3$
- (c)  $10^{-11}$  (d)  $11$
- 9-  $\text{pH}$   $11$   $\text{g}$
- (a)  $0.001 \text{ M NaOH}$   $\text{pH}$   $11$   $\text{g}$
- (b)  $0.001 \text{ M NaOH}$   $\text{pH}$   $3$   $\text{g}$
- (c)  $0.001 \text{ M NaOH}$   $\text{pH}$   $11$   $\text{g}$
- (d)  $0.001 \text{ M NaOH}$   $\text{pH}$   $11$   $\text{g}$
- 10-  $\text{pH}$   $11$   $\text{g}$
- (a)  $\text{HCOOH} + \text{HCOO}^-$  (b)  $\text{CH}_3\text{COOH} + \text{CH}_3\text{COO}^-$
- (c)  $\text{H}_2\text{C}_2\text{O}_4 + \text{C}_2\text{O}_4^{2-}$  (d)  $\text{H}_3\text{BO}_3 + \text{BO}_3^{3-}$

Answer :-

Q.N.	1	2	3	4	5	6	7	8	9	10
Ans	C	A	D	A	D	B	B	D	A	A

## 5- jkl k; fud m"ekxfrdh

- 1- fdl h vkn'kzxs dsl erkih; i z kj l s &
- vkrfjd Åtkz ea of) gkrh gÅ
  - , UFKYih de gkrh gÅ
  - , UFKYih l eku jgrh gÅ
  - , UFKYih dk eku de gkdj 'k; gks tkrk gÅ
- 2- Lor% i Øe og gsftl ea gkrk gS &
- Åtkz dk vifjorú
  - eDr mtkz ea deh
  - , UVki h ea deh
  - vkrfjd mtkz ea of)
- 3- fuEu ea l s dks l k dFku l gh ugha gS &
- $\Delta H = E - P\Delta V$
  - $\Delta E = q + \omega$
  - $\Delta S_{sys} + \Delta S_{surr} > 0$
  - $\Delta S_{fusion} = \frac{\Delta H_{fusion}}{T}$
- 4- tc fdl h ra= ea v0; oLFkk c<+ tkrh gS rks i fjorú dks dgk tkrk gS
- m"ek{ksi h
  - vLor%
  - m"ek' kkskh
  - Lor%
- 5- , d cn Fke l ¶lykLd ea cQl gS; g mnkgj .k gS % &
- cn fudk; dk
  - [kyk fudk; dk
  - foyfxr fudk; dk
  - m"ekxfrdh; fudk; ugha gS

- 6- fdl h vfhkfØ; k dk gkuk vl hko gS ; fn
- (a)  $\Delta H$  ,  $0a \Delta S$ ,  $+Ve$  gñ  
 (b)  $\Delta H$  ,  $0a \Delta S$ ,  $-Ve$  gñ  
 (c)  $\Delta H$ ,  $-Ve$  ,  $0a \Delta S$ ,  $+Ve$  gñ  
 (d)  $\Delta H$ ,  $+Ve$  gñ ,  $0a \Delta S -Ve$  gñ
- 7- fuEu ea l sfdl dh , UVki h U; ure gkrh gS &
- (a) Bkl (b) xfy Bkl  
 (c) nð fØLVy (d) ty eafoy; u
- 8- ngu , UFKYi h gkrh gS
- (a) geškk /kukkRed (b) 'kk;  
 (c) geškk \_\_.kkRed (d) /kukRed ; k \_\_.kkRed
- 9- , d dSykj h l eku gS
- (a) 0.4184J (b) 4.184J  
 (c) 41.84J (d) 418.4J
- 10- : ) k'e iØe dsfy, l gh gS
- (a)  $P\Delta V = 0$  (b)  $q = +w$   
 (c)  $\Delta E = q$  (d)  $q = 0$
- 11- fuEu ea l s dku l h bZkbzm tkZ dh l okZ/kd ek=k i nf'kr djrh gS
- (a)  $eV$  (b)  $v \times l$   
 (c)  $t \omega$  (d) dSykj h

Answer :-

Q.N.	1	2	3	4	5	6	7	8	9	10	11
Ans	C	B	A	D	C	D	A	C	B	D	D



## 6- jMkDI vfhkfØ; k o fo | q jkl k; fud l sy

- 1- vkDI hdj.k ea ikflr gsrh gS &
  - (a) byDVW dh ikflr
  - (b) byDVW dh deh
  - (c) vkDI hdj.k vad ea deh
  - (d) vkDI hdj.k vad ea dkbZ i fforZu ugha
- 2-  $K_2MnO_4$  ea  $Mn$  dh vkDI hdj.k l q; k gS
  - (a) \$ 2
  - (b) \$ 6
  - (c) \$ 7
  - (d) 0
- 3- ekud gkbMkstu byDVW ea  $H^+$  vk; ukadk l klz k gsrk gS
  - (a) 0.2M
  - (b) 0.1M
  - (c) 1M
  - (d) 0.001M
- 4- os q vi?kVu ea vkDI hdj.k gsrk gS &
  - (a) , s kM ij
  - (b) d f kM ij
  - (c) nksuka byDVW ka ij
  - (d) bua l s dkbZ ugha
- 5- 'kd l syka ea f?kd dk dk; l djrk gS &
  - (a)  $NH_4Cl$
  - (b)  $Na_2CO_3$
  - (c)  $PbSO_4$
  - (d)  $MnO_2$
- 6- l sy  $Ni/Ni^{2+}(1.0M) \square Au^{3+}(1.0M)/Au$  dk  $Ni^{2+}/Ni$  ds fy,  $E^0 = 0.25V$  ]  $Au^{3+}/Au$  ds fy,  $E^0 = 1.5v$  E.M.F. gA
  - (a) 1.25V
  - (b) -1.25V
  - (c) -1.75V
  - (d) 2.00V
- 7-  $E^0 = \frac{RT}{nF} \ln K$  l ehdj.k dgykrk gA
  - (a) fxCl l ehdj.k
  - (b) fxCl & gYe gkVt l ehdj.k
  - (c) uuLV l ehdj.k
  - (d) okUMj okYI l ehdj.k
- 8- vkDI htU dh vkDI hdj.k voLFk fdl ea 'k; gS &
  - (a) CO
  - (b)  $O_3$
  - (c)  $SO_2$
  - (d)  $H_2O_2$

9. I sy fLFkjkd dh bdkbz gS &

(a)  $vke^{&1}$  I  $eh^{&1}$

(b)  $vke$  I  $eh$

(c) I  $eh$

(d) I  $eh^{&1}$

10. I sy  $Zn/Zn^{2+} // Cu^{2+}/Cu$  ea \_\_. kRed by DVM gS &

(a)  $Cu$       (b)  $Cu^{2+}$       (c)  $Z_n$       (d)  $Z_n^{2+}$

Answer :-

Q.N.	1	2	3	4	5	6	7	8	9	10
Ans	B	B	C	A	D	C	C	B	D	C

## 7- jkl k; fud cy xfrdh

- 1- j l k; fud vfHkfØ; k dh nj fuHkj dj rh gS  
 1/4 1/2 i j ek. kq nØ; eku      1/2 1/2 rY; k dh nØ; eku  
 1/8 1/2 vk. kfod nØ; eku      1/8 1/2 l fØ; nØ; eku
- 2- fuEu ea l s dksu l h i Fke dksV dh vfHkfØ; k gS  
 1/a 1/2  $NH_4NO_2 \rightarrow N_2 + 2H_2O$   
 1/b 1/2  $2HI \rightarrow H_2 + I_2$   
 1/c 1/2  $2NO_2 \rightarrow 2NO + O_2$   
 1/d 1/2  $2NO + O_2 \rightarrow 2NO_2$
- 3- ; fn fd l h vfHkfØ; k dk rki  $10^\circ C$  l s  $50^\circ C$  rd c<k fn; k tkrk gS rks vfHkfØ; k ds ox ea of) gksxh &  
 1/a 1/2 10 xpk    1/b 1/2 16 xpk    1/c 1/2 32 xpk    1/d 1/2 5 xpk
- 4- , d vfHkfØ; k dh nj  $r = K[A]^{3/2}[B]^{-1/2}$  gS rks bl dh dksV gksxh &  
 1/a 1/2 2      1/b 1/2 1      1/c 1/2  $-\frac{1}{2}$       1/d 1/2  $\frac{3}{2}$
- 5- , d i Fke dksV dh vfHkfØ; k 32 feuV ea 75 i fr'kr i wkZ gksrh gS bl ds 50 i fr'kr i wkZ gksus ea l e; yxsxkA  
 1/a 1/2 16 feuV      1/b 1/2 8 feuV    1/c 1/2 4 feuV      1/d 1/2 32 feuV
- 6- i Fke dksV dh vfHkfØ; k ds ox fLFkjkd dk ek=d gS &  
 1/a 1/2 l d.M<sup>&1</sup>      1/b 1/2 esy yHvj<sup>&1</sup> l d.M<sup>&1</sup>  
 1/c 1/2 esy l d.M<sup>&1</sup>      1/d 1/2 yHvj esy<sup>&1</sup> l d.M<sup>&1</sup>
- 7- ; fn nj , oa nj fLFkjkd ds ek=d l eku gks rks vfHkfØ; k gksxh  
 1/a 1/2 'kØ; dksV      1/b 1/2 i Fke dksV

1/2 f}rh; dksV                      1/2 r}rh; dksV

8- i kj}hkd I kUnrk , oa v) }k; }ky ea I Ec}k gS

1/2  $a^{n-1}$                       1/2  $\frac{1}{a^{n-1}}$                       1/2  $a^{-n}$                       1/2  $\frac{1}{a}$

9- vf}hkfØ; k  $2HI \rightleftharpoons H_2 + I_2$  dsfy, vf}hkfØ; k dk osx  $[HI]^2$  ds I ekuij krh gksrk gS vr% vf}hkfØ; k gksrh

1/2 , dk. k}d                      1/2 f}v. k}d

1/2 i Eke dksV dh                      1/2 f}rh; dksV dh

10- fd I h vf}hkfØ; k dsnj fLFkj}kd ij rki dk i }kko n'kk}us okyk vkgh}u; I I ehdj. k gS &

1/2  $K = e^{-Ea/RT}$                       1/2  $K = \frac{Ea}{RT}$

1/2  $K = \log e \frac{Ea}{R}$                       1/2  $K = Ae^{-Ea/RT}$

Answer :-

Q.N.	1	2	3	4	5	6	7	8	9	10
Ans	D	A	B	B	A	A	A	B	B	D

## 8- ukfHkdh; j l k; u

- 1- jSM; k<sub>s</sub> DVho i nkFKZ l smRI ftZr ugha gkrk  
 $\frac{1}{a} \alpha$  fdj.k                       $\frac{1}{b} \beta$  fdj.k  
 $\frac{1}{c} i$  kftVku                       $\frac{1}{d} i$  kVku
- 2- ijek.kqce fuEu dsfl ) kr ij vk/kkfjr gS  
 $\frac{1}{a}$  ukfHkdh; l ay; u               $\frac{1}{b}$  ukfHkdh; fo[k.Mu  
 $\frac{1}{c}$  jSM; k<sub>s</sub> , fDVork               $\frac{1}{d}$  l ay; u o fo[k.Mu nksuka
- 3-  ${}^{60}_{27}\text{Co}$  jSM; k<sub>s</sub> fDVo gSD; kfid &  
 $\frac{1}{a}$  bl dk  $\frac{p}{n}$  vuq kr mPp gS  
 $\frac{1}{b}$  bl dk  $\frac{n}{p}$  vuq kr mPp gS  
 $\frac{1}{c}$  bl dh ijek.kq l d; k mPp gS  
 $\frac{1}{d}$  mi ; Dr ea l s dkbZ ugha
- 4- ukfHkdh; fj; DVj ea end ds: i ea iz Dr gkrk gS &  
 $\frac{1}{a}$  dMfe; e                       $\frac{1}{b}$   ${}^{235}\text{U}$   
 $\frac{1}{c}$  yM                       $\frac{1}{d}$  Hkkjh ty
- 5- mtkZ ds: i ea  ${}_{1}\text{amu}$  rF; gS &  
 $\frac{1}{a}$  100J                       $\frac{1}{b}$  931.1MeV  
 $\frac{1}{c}$  931.1Kcal                       $\frac{1}{d}$   $10^7$  ergs
- 6- fuEu vfHkfØ; k ea irhd X gS &  
 ${}^{23}_{11}\text{Na} + {}^1_1\text{H} \rightarrow {}^{23}_{12}\text{Mg} + X$



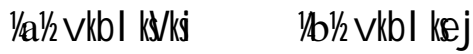
7- I okf/kd osku {kerk okyk fofdj .k gS &



8-  ${}_{92}^{238}X$  I sigys, d  $\alpha$  d.k rFkk ckn ea  $\beta$  d.k dsmRI tZu dsckn ijek.kqea U; Wkuka dh I  $\alpha$ ; k gksxh &



9- v.kqftuea I eku I  $\alpha$ ; k ea ijek.kqo byDVkU gksrs gS dgykrs gS &



10- ukfHkf d; vfHkf  $\emptyset$ ; k  ${}^9Be(p, \alpha)x$  ea x gS



Answer :-

Q.N.	1	2	3	4	5	6	7	8	9	10
Ans	D	B	B	D	B	A	C	D	D	B

## 9- I rg j l k; u

1- I KYI (*Sols*) geškk fuEu xqk inf'kŕ ugha djrs gš

$\frac{1}{a} \frac{1}{2}$  vo'kkšk.k       $\frac{1}{b} \frac{1}{2}$  fV.My i Hkko

$\frac{1}{c} \frac{1}{2}$  ŕjykš; wš'ku       $\frac{1}{d} \frac{1}{2}$  i škešus/hTe

2- j{lh dksykbM dh rjg dk; Zdjusokyk I ky gš&

$\frac{1}{a} \frac{1}{2}$   $AS_2S_3$        $\frac{1}{b} \frac{1}{2}$  ftyš/hu

$\frac{1}{c} \frac{1}{2}$  Au       $\frac{1}{d} \frac{1}{2}$  Fe(OH)<sub>3</sub>

3- dksyk; Mh d.k dk vdkj gšrk gš&

$\frac{1}{a} \frac{1}{2}$   $10^{-7} - 10^{-9}$  I eh dschp ea

$\frac{1}{b} \frac{1}{2}$   $10^{-9} - 10^{-11}$  I eh dschp ea

$\frac{1}{c} \frac{1}{2}$   $10^{-5} - 10^{-7}$  I eh dschp ea

$\frac{1}{d} \frac{1}{2}$   $10^{-2} - 10^{-3}$  I eh dschp ea

4- fuEu ea l s dksu I k i k; I gš&

$\frac{1}{a} \frac{1}{2}$  nŕ/k       $\frac{1}{b} \frac{1}{2}$  dk"B       $\frac{1}{c} \frac{1}{2}$  eD[ku       $\frac{1}{d} \frac{1}{2}$  ok; q

5- 0; ki kfjd fMVj tsV ea eŕ; r% gšrk gš&

$\frac{1}{a} \frac{1}{2}$  RCOONa       $\frac{1}{b} \frac{1}{2}$  RONa

$\frac{1}{c} \frac{1}{2}$  RNa       $\frac{1}{d} \frac{1}{2}$  ROSO<sub>2</sub>Na

6- , ekbyst  $\hat{e}kYVst^*$  }kjk mRi fj r i fØ; k gS &

$\frac{1}{2}$  LVkpZ & ekYVkst

$\frac{1}{2}$  ekYVkst & Xyrdkst

$\frac{1}{2}$  yDVkst & ekYVkst

$\frac{1}{2}$  ekYVkst & Xyrdkst \$ YDVkst

7- vfhkfØ; k  $2SO_2 + O_2 \xrightarrow[As_2O_3]{Pt} 2SO_3$  ea  $As_2O_3$  gS &

$\frac{1}{2}$  mRi j d  $\frac{1}{2}$  fo" k

$\frac{1}{2}$  .kkRed mRi j d  $\frac{1}{2}$  /kumRi j d

8- 10ml Au l ky ea 0-250 xte LVkpZ feykus ij 10 i fr'kr  $NaCl$  ds 1ml  
foy; u }kjk vo{ki .k ughagks i krk rks LVkpZ dh Lo.kz l d; k gksxh &

$\frac{1}{2}$  0-025

$\frac{1}{2}$  0-25

$\frac{1}{2}$  250

$\frac{1}{2}$  2-5

9- eD[ku , d dksy kM gA ; g curk gS tc &

$\frac{1}{2}$  ol k Bkd ds hu eaforfjr gksrh gS

$\frac{1}{2}$  ol k ds v.kq ty eaforfjr jgrs gA

$\frac{1}{2}$  ty] ol k eaforfjr jgrk gA

$\frac{1}{2}$  ds hu ty eafuyfEcr jgrk gA



- 10- fuEu ea l sfdl dk iz kx no Lugh dks ykbM cukus ea ugha gkrk &  
 1/a 1/2 LVkpZ                      1/b 1/2 xkn  
 1/c 1/2 ftyfVu                      1/d 1/2 /kkrg I YQkbM

Answer :-

Q.N.	1	2	3	4	5	6	7	8	9	10
Ans	D	B	C	A	D	B	B	C	C	D

## 10-1 P Gykd ds rRok d k j l k; u I

- 1- I cl svf/kd J[kyk n'kkZusokyk rRo gS  
 $\frac{1}{2}$  v k d l htu       $\frac{1}{2}$  l YQj  
 $\frac{1}{2}$  l yfu; e       $\frac{1}{2}$  l VY; fij; e
- 2- QkQkj l v.kq dk j l k; fud l # gS &  
 $\frac{1}{2}$  P<sub>1</sub>       $\frac{1}{2}$  P<sub>2</sub>       $\frac{1}{2}$  P<sub>3</sub>       $\frac{1}{2}$  P<sub>4</sub>
- 3- NH<sub>3</sub> v.kqfdl i d k j ds l d j . k l scurk gS &  
 $\frac{1}{2}$  dsp<sup>2</sup>       $\frac{1}{2}$  sp<sup>3</sup>       $\frac{1}{2}$  sp<sup>3</sup>d       $\frac{1}{2}$  d<sup>2</sup>sp
- 4- fuEukfdr ea l s d k u l k i z y r e v E y h; gS &  
 $\frac{1}{2}$  ClO<sub>2</sub>(OH)       $\frac{1}{2}$  ClO<sub>3</sub>(OH)  
 $\frac{1}{2}$  SO(OH)<sub>2</sub>       $\frac{1}{2}$  SO<sub>2</sub>(OH)<sub>2</sub>
- 5- fuEukfdr ea l s d k u t y ea l o k / k d f o y s gS &  
 $\frac{1}{2}$  NH<sub>3</sub>       $\frac{1}{2}$  PH<sub>3</sub>       $\frac{1}{2}$  AsH<sub>3</sub>       $\frac{1}{2}$  SbH<sub>3</sub>
- 6- fuEukfdr V k b z g y k b M k a ea l c l s d e { k k j d h; gS &  
 $\frac{1}{2}$  NF<sub>3</sub>       $\frac{1}{2}$  NCl<sub>3</sub>       $\frac{1}{2}$  NBr<sub>3</sub>       $\frac{1}{2}$  NI<sub>3</sub>
- 7- fuEukfdr ea d k u l k v . k q f = d k s k h; f } f i j k f e M h; gS &  
 $\frac{1}{2}$  BF<sub>3</sub>       $\frac{1}{2}$  CH<sub>4</sub>       $\frac{1}{2}$  PCl<sub>5</sub>       $\frac{1}{2}$  SF<sub>6</sub>
- 8- g d k u s o k y h x s gS &  
 $\frac{1}{2}$  NO<sub>2</sub>       $\frac{1}{2}$  NO       $\frac{1}{2}$  N<sub>2</sub>O       $\frac{1}{2}$  N<sub>2</sub>O<sub>3</sub>

- 9- ty dk mPp DoFkukad dk dkj.k mi fLFkr gS &  
 1/2 nkrk vkcah dh                      1/2 I g I a kst d cah dh  
 1/2 gkbMkst u cah dh                      1/2 ck.MjokYI cyka dh
- 10- LQjnhflr inf'kr djrk gS &  
 1/2 yky QkMkQkj I                      1/2 I Qn QkMkQkj I  
 1/2 dkyk QkMkQkj I                      1/2 xgjk yky QkMkQkj I
- 11-  $H_3PO_4$  gS &  
 1/2 f={kkj dh; vEy                      1/2 f}{kkj dh; vEy  
 1/2 mnkl hu                                      1/2 , d {kkj dh; vEy

Answer :-

Q.N.	1	2	3	4	5	6	7	8	9	10	11
Ans	B	D	B	D	A	A	C	C	C	B	B

## 10 & 2 - P & Cykl ds rRokadk j l k; u & II

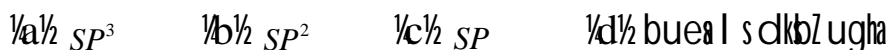
1- iZyre vi pk; d gS &



2- Xe dk dks I k qlyw kj kbM ugha gkrk gS &



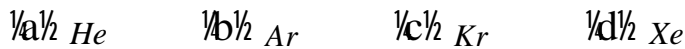
3-  $ClO_2^-$  ea dks I k I dj .k gkrk gS &



4- fuEu ea I s dks iZyre vEy gS &



5- He, Ar, Kr, Xe ea fdl ds ; kfxdka dh I q ; k de gS &



6- fuEukidr ea I s dks byDVkfud fol; kl gSykst ukads vire d{k ds fol; kl dks inf'kr djrk gS %&



7- fuEukidr mRd"V xS ka ea fdl ea vLVd ugha gkrk &



8- dks I k I okf/kd vEyh; gS &



9- mRd"V xS ka ds Øe'k% mtkLrj ea of) I smudsfuEukidr xq kka ea deh gkrh gS



1/2 DoFkukad

1/2 ?kuRo

10- vire d{k dk byDVkfud fol; kl  $ns^2np^6$  gkrk gS &

1/2 {kkjh; enk /kkrg

1/2 l Øe.k rRo

1/2 gSykst u

1/2 mRd"V xS

Answer :-

Q.N.	1	2	3	4	5	6	7	8	9	10
Ans	A	B	A	D	A	D	D	D	A	D

## 11- I ðe.k o var% I ðe.k rRokadk j l k; u

- 1-  $Mn$  dh mPpre vki I hdj .k voLFkk gsmi ds ; kfxd  

1a) $MnO_3$ ea	1b) $Mn_3O_4$ ea
1c) $KMnO_4$	1d) $K_2MnO_4$ ea
- 2- fuEu ea I s dks I k vk; u jaxhu foy; u nrk gS &  

1a) $Cu^+$	1b) $Zn^{++}$
1c) $Ag^+$	1d) $Fe^{++}$
- 3-  $Fe^{3+}$  ( $Z = 26$ ) ea v; qer byDVWka dh I d; k gS &  

1a) 4	1b) 5
1c) 6	1d) 3
- 4-  $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^6$  byDVWud foll; ki gS &  

1a) $Mn^{2+}$ dk	1b) $Fe^{2+}$ dk
1c) $Co$ dk	1d) $Ge$ dk
- 5- dSykekbu [kfut gS &  

1a) $ZnCO_3$	1b) $ZnS$
1c) $ZnSO_4$	1d) $ZnO$
- 6- dks I h I ðe.k /krqHki dks vipf; r dj gkbMstu epr djrh gS &  

1a) $Mn$	1b) $Fe$
1c) $Sc$	1d) $Pt$
- 7- fuEu ea I s dks I k rRo i fjorh I a kst drk ughan'kkzk gS &  

1a) $Ni$	1b) $Zn$
1c) $Cu$	1d) $Mn$

8- fdl h rRo dh i jek. kqI d; k 22 gSbl ds; kfxd eabl dh mPpre vkDI hdj .k  
I d; k gkxh &

1/a 1

2/b 2

3/c 3

4/d 4

9- fuEu eaI s dksu I k vEyh; vkDI kbMka dk I eug gS&

1/a  $CrO_3, Mn_2O_7$

2/b  $ZnO, Al_2O_3$

3/c  $CaO, ZnO$

4/d  $Na_2O, Al_2O_3$

10- fuEu eaI s dksu I k I De.k /kkq ugha gS&

1/a  $Fe; e$

2/b  $VbVfu; e$

3/c  $VxLVu$

4/d  $yM$

11- i je&fud vEy dk I gh I # gS&

1/a  $HMnO_4$

2/b  $HMnO_5$

3/c  $H_2MnO_4$

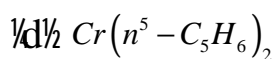
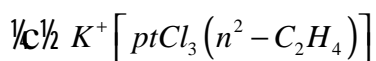
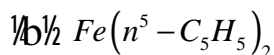
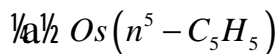
4/d  $H_2MnO_3$

Answer :-

Q.N.	1	2	3	4	5	6	7	8	9	10	11
Ans	C	D	B	B	A	B	B	D	A	D	A

## 12- mi l gl a ksth ; kfxcdk dk j l k; u

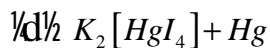
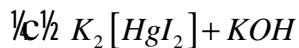
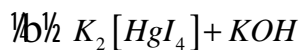
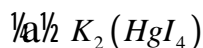
1- Qjkd hu gS &



2- ftXyj ukVk mRi jd dk iz kx gkrk gS &



3- ud yj vfhkdebl gS &



4-  $K_3[Fe(CN)_6]$  dk I.U.P.A.C. uke gS &





$\frac{1}{2}$  i k/s'k; e QjkgDI k; u/s/ (II)

$\frac{1}{2}$  i k/s'k; e gDI kl k; ukQj/s/ (III)

5-  $CuSO_4$  foy; u  $KCN$  l sfØ; k djds nrk gS &

$\frac{1}{2}$   $Cu(CN)_2$                        $\frac{1}{2}$   $Cu(CN)$

$\frac{1}{2}$   $K_2[Cu(CN)_4]$                        $\frac{1}{2}$   $K_3[Cu(CN)_4]$

6-  $K_3Cr(C_2O_4)$  ea  $Cr$  dh dks/kfMZu'sku l q; k vkj vkDI hdj .k voLFkk Øekuq kj gksxa &

$\frac{1}{2}$  4 vkj \$ 2                       $\frac{1}{2}$  6 vkj \$ 3

$\frac{1}{2}$  3 vkj \$ 3                       $\frac{1}{2}$  3 vkj 0

7- fyffk; e V/s/ gkbM's , Y; feus/ ea fyxsM gS &

$\frac{1}{2}$   $H^+$                                        $\frac{1}{2}$   $H$

$\frac{1}{2}$   $H^-$                                        $\frac{1}{2}$  buea l s dkbZ ugha

8- fuEukidr ea l s dksu l k fyxsM dhys/ cukrk gS &

$\frac{1}{2}$  , l hV/s/                               $\frac{1}{2}$  vkDI ty/s/

$\frac{1}{2}$  l k; ukbM                               $\frac{1}{2}$  veksu; k

9-  $dsp^2$  l dj .k dk mnkgj .k gS &

$\frac{1}{2}$   $[Fe(CN)_6]^{3-}$                        $\frac{1}{2}$   $[Ni(CN)_4]^{2-}$

$\frac{1}{2}$   $[Zn(NH_3)_4]^{2+}$                        $\frac{1}{2}$   $[FeF_6]^{3-}$

10-  $[CO(NH_3)_6]^{3+}$  l dty vk; u ea dkskYV dh i Hkkoh i jek.kq l q; k gksxh &

$\frac{1}{2}$  36                                       $\frac{1}{2}$  33

$\frac{1}{2}$  24                                       $\frac{1}{2}$  30

Answer :-

Q.N.	1	2	3	4	5	6	7	8	9	10
Ans	B	B	B	B	D	B	C	B	B	A

13- vkrDI htU ; Ør fØ; kRed l eug ij vk/kfjr  
dkcud j l k; u

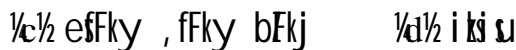
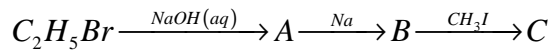
1- l kSM; e , FkkDI kbM dks  $C_2H_5Cl$  ds l kFk xeZ djus ij i kr gkrk gS &



2- Mkb, fFky bFkj dks l kUnz HI ds l kFk xeZ djus ij vkrk gS &



3- fuEufyf[kr vfHkfØ; k ea C mRi kn gS &



4- dYI h; e , l hVW dks dYI h; e QkeW ds l kFk xeZ djus ij i kr gkrk gS &



5- Dykjky gS &



6- fuEufyf[kr ea l s dksU l k veksu; ke;  $AgNO_3$  ds l kFk j tr nizk ughansrk

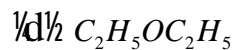
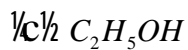
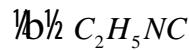
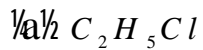


- 7- tc QkehZd vEy  $PCl_3$  ds l kFk vfHkd'ir fd; k tkrk gS rks i klr gkrk gS &  
 1/2 QkfeZd Dykj kbM 1/2 , l hfVy Dykj kbM  
 1/2 i kfi ukby Dykj kbM 1/2 eFky Dykj kbM
- 8- , d hvkekbM ij  $Br_2 + NaOH$  dh fØ; k l s i klr gkrk gS &  
 1/2 , l hfVd , fl M 1/2 ckeks l hfVd , fl M  
 1/2 eFky , ehu 1/2 , Fksu
- 9- l keku; l #  $(RCO_2)O$  }kj k i dV gkrk gS  
 1/2 , d bFkj 1/2 dhVksu  
 1/2 , d , LVj 1/2 , d vEy , sugkbMkbM
- 10- , fFky , d hvV  $CH_3MgBr$  l s vfHkfØ; k dj ds cukrk gS &  
 1/2 f}rh; d , Ydkgkly 1/2 r}rh; d , Ydkgkly  
 1/2 i kFkfed , Ydkgkly rFk vEy 1/2 vEy
- 11- dksu & l k ; kfxd vk; y vkQ fOUVj xhu ds uke l s tkuk tkrk gS &  
 1/2 Qsfuy cat ks V 1/2 Qsfuy l syhf l yV  
 1/2 Qsfuy , l hvV 1/2 eFky l syhf l yV

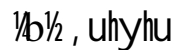
Q.N.	1	2	3	4	5	6	7	8	9	10	11
Ans	B	C	C	C	C	C	A	C	D	B	D

14- ukbVktu ; Ør fd; kRed l eog ij  
vk/kkfjr dkcfud j l k; u

1- , Fkhy , ehú dks  $CHCl_3$  rFkk  $KOH$  ds l kFk xel djus ij curk gS &



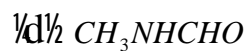
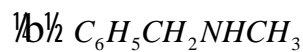
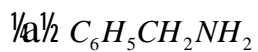
2- fuEukfidr ea dks l okf/kd {kkj dh; gksrk gS &



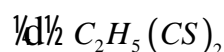
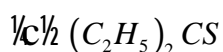
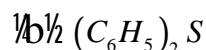
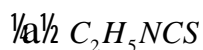
3- feJ.k dks , uhyhu l s i Fkd djus dh fof/k gS &



4- dks l k nfyre {kkj gS &



5- , fFky , ehú dks  $HgCl_2$  dh mi fFkr ea xel djus ij curk gS &



6- cãth u Mkb, tkfu; e Dykj kbM ds ty vi?kvu ij iklr gkrk gS &

1/a 1/2 ukb Vkr cãth u

1/b 1/2 ukb Vkr Qhuky

1/c 1/2 ukb Vkr Fku

1/d 1/2 cãth u

7- fuEukidr eãfoLQkV/d dkfu gS &

1/a 1/2 ukb Vkr cãth u

1/b 1/2 ukb Vkr Qhuky

1/c 1/2 ukb Vkr Fku

1/d 1/2 Vkr bukb Vkr cãth u

8- fuEu eãl sfdl eã -COOH l emg ughagS

1/a 1/2 l kbVd vEy

1/b 1/2 ySDVd vEy

1/c 1/2 fi fdd vEy

1/d 1/2 eSyksud vEy

9- l u-1984 eã Hkks ky =kl nh eã fj l usokyh xS a Fkh &

1/a 1/2  $CH_3 - N = C = O$

1/b 1/2  $CH_3 - C - N = S$

1/c 1/2  $CHCl_3$

1/d 1/2  $C_6H_5COCl$

10- ; kfxd X l sDykj kQel rFkk NaOH vfhkFØ; k djds, d vfr nãkD/k ; Ør ; kfxd nrs gS & X gS

1/a 1/2  $C_6H_5CONH_2$

1/b 1/2  $C_6H_5NH_2$

1/c 1/2  $C_6H_5CH_2NHCH_3$

1/d 1/2  $C_6H_5NHCH_3$

Answer :-

Q.N.	1	2	3	4	5	6	7	8	9	10
Ans	B	A	D	B	A	B	D	C	A	B

## 15- nšud thou eajl k; u

- 1- C; uk 5 eaC; wkmkbzu , oalvkbjhu dk vuq kr gsrk gS &  

$\frac{1}{a}\frac{1}{2} 1 \% 1$	$\frac{1}{b}\frac{1}{2} 2 \% 1$	$\frac{1}{c}\frac{1}{2} 3 \% 1$	$\frac{1}{d}\frac{1}{2} 1 \% 2$
---------------------------------	---------------------------------	---------------------------------	---------------------------------
  
- 2- P.V.C. , dyd dk uke gS &  

$\frac{1}{a}\frac{1}{2}$ , Fkhyhu	$\frac{1}{b}\frac{1}{2}$ VS/R/yw/kj ks Fksu
$\frac{1}{c}\frac{1}{2}$ Dykj ks Fkhu	$\frac{1}{d}\frac{1}{2}$ buea l s dkbZ ugha
  
- 3- cdsykbV ea Ohuky ds l kfk dks l k ; kfxd l a pr jgrk gS &  

$\frac{1}{a}\frac{1}{2}$ HCHO	$\frac{1}{b}\frac{1}{2}$ CH <sub>3</sub> OH
$\frac{1}{c}\frac{1}{2}$ CHOOH	$\frac{1}{d}\frac{1}{2}$ $\begin{array}{c} CH_2OH \\   \\ CH_2OH \end{array}$
  
- 4- i kfyej gS &  

$\frac{1}{a}\frac{1}{2}$ eBksv . kq	$\frac{1}{b}\frac{1}{2}$ ekbØksv . kq
$\frac{1}{c}\frac{1}{2}$ l cekbØksv . kq	$\frac{1}{d}\frac{1}{2}$ buea l s dkbZ ugha
  
- 5- , Li hjhu gS &  

$\frac{1}{a}\frac{1}{2}$ nnuk' kd	$\frac{1}{b}\frac{1}{2}$ Tojuk' kh
$\frac{1}{c}\frac{1}{2}$ eysj ; kj kskh	$\frac{1}{d}\frac{1}{2}$ a rFkk b nksuka
  
- 6- ckjDI fuEukfidr ds mRi knu ea i ed[k gsrk gS &  

$\frac{1}{a}\frac{1}{2}$ dksMØhe	$\frac{1}{b}\frac{1}{2}$ oshf' ka Øhe
$\frac{1}{c}\frac{1}{2}$ Dyhf l a Øhe	$\frac{1}{d}\frac{1}{2}$ i j¶; e
  
- 7- D.D.T. dks dgrs gS &  

$\frac{1}{a}\frac{1}{2}$ MkbDykj ka MkbQsfuy VkbDykj ks , Fksu	
$\frac{1}{b}\frac{1}{2}$ MkbgbMks MkbDykj ks VkbDykj ks , Fksu	

- $\frac{1}{c}\frac{1}{2}$  MkbQsfuy MkbefFky VrbDykg ks i ks u  
 $\frac{1}{d}\frac{1}{2}$  Mkb, ehukaMkbQsfuy VkyϕZ
- 8- fodfrdr fLijhV fo'kSk : i l siz ϕr gkrh gS  
 $\frac{1}{a}\frac{1}{2}$  vkSkf/k ea  $\frac{1}{b}\frac{1}{2}$  bZku ea  
 $\frac{1}{c}\frac{1}{2}$  okfuZ k cukusea  $\frac{1}{d}\frac{1}{2}$  Vkod rS kj djusea
- 9- bueal sfdl dk jkdV i ks sysV eabZku ds: i eami ; ksx ugha gkrk &  
 $\frac{1}{a}\frac{1}{2}$  nD gkbMst hu  $\frac{1}{b}\frac{1}{2}$  nD gkbMst u  
 $\frac{1}{c}\frac{1}{2}$  feVvh dk rsy  $\frac{1}{d}\frac{1}{2}$  nD vkDl kbM
- 10- dksyrkj ds iBkkth vkl ou l siklr ^e/; rsy\*\* eami fLFkr gkrk gS  
 $\frac{1}{a}\frac{1}{2}$  cat hu  $\frac{1}{b}\frac{1}{2}$  , UFkl hu  
 $\frac{1}{c}\frac{1}{2}$  usFkshu  $\frac{1}{d}\frac{1}{2}$  tkbyhu
- 11- 1% Qhuky foy; u gS &  
 $\frac{1}{a}\frac{1}{2}$  , BVhl sIVd  $\frac{1}{b}\frac{1}{2}$  l De.k jkSkh  
 $\frac{1}{c}\frac{1}{2}$  eySj ; k jkSkh  $\frac{1}{d}\frac{1}{2}$  , BVh fgLVkehu

Answer :-

Q.N.	1	2	3	4	5	6	7	8	9	10	11
Ans	C	C	A	A	D	A	A	A	D	C	B