

छत्तीसगढ़ माध्यमिक शिक्षा मण्डल, रायपुर



foKku

d{k k x oha

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i z u cfd

1/0 | k\$pr bdkb1/2

NÜkhl x<+ek/; fed f'k{k k e.My] jk; i j

vkedk

jk"Vh; i kB; p; kZ dh : i js[kk 2005 eaftu fpUrkvka dk mYys[k fd; k x; k gSml dsrkjrE; eain'sk dsgkbZLdny , oagk; j l dsMjh eav/; ; u djusokysfo | kFFkz ka ds l aak eafopkj djus , oa mudh l eL; kvka dk l ek/kku djus graq NRRhl x<+ek/; fed f'k{kk e.My iz Ru'khy g\$ rkd 'k\$kf.kd y{; ka dh i kflr gks l ds , oa f'k{kk dh xqkoRrk ea l qkkj gks l da


ijh{kkvka ds l e; fo | kFFkz ka ds eu eafpUrK , oa Hk; mRiUu gsrk gSfd ijh{kk ds h gksch\ ijh{kk eafdl idkj izu i Ns tk; a\$ dks l k izu ijh{kk dsfy, egROIwKz gks l drsg\$ bl graq foxr o"kk\$ ea e.My iz kl jr jgk g\$ fo"K; okj ekMy izu i = dks vc NRRhl x<+ek/; fed f'k{kk e.My ds ekU; rk i klr fo | ky; ka ea Hkstus ds l kFk&l kFk mUga e.My ds os l kbV ea ykM fd; k tk; xkA ijh{kk ds Hk; , oaruko l seDr j [kus dsfy, e.My }kjk gkbZLdny , oagk; j l dsMjh ds fo | kFFkz ka ds fy, fo"K; okj d{kk 9oha l s 12ohard izu cid r\$ kj fd; k x; k g\$ izu cid ea ijEijxR izuka ds vrfjDr uohu izuka dk l eko\$K fd; k x; k g\$ izu cid bdkbdkj , oae.My dh ijh{kk ; kstuk ds vuq kj r\$ kj fd; k x; k g\$ ftl l s vPNs vad i klr djus ds l kFk&l kFk ijh{kkfFkz ka ea fo"K; ds ifr : fp mRiUu gkschA

izu cid ds vHkko eaf'k{kdk\$ i kf'udka vK\$ fo | kFFkz ka dks i kB; i qrd ds vUr eafn; s x, ijEijxR izuka ij fuHk\$ jguk i M\$K g\$ bl l sfo"K; dk eW; ka du 0; fDrijd (Subjective) gks tkrk g\$ rFk fofHkUu 'k\$kf.kd mI\$; ka ds vk/kkj ij eW; ka du ugha gsrk g\$ bl h vko'; drk dks /; ku ea j [krs gq e.My us gkbZLdny 1/9oh\$ 10oh\$ rFk gk; j l dsMjh 1/11oh\$ 12oh\$ ds l Hkh fo"K; ds izu cid dk fuekZk fd; k g\$ bl izu cid l s f'k{kdk\$, oa fo | kFFkz ka ea fur uohu izuka ds fuekZk dh vHk: fp mRiUu gkschA

izu cid ea fo"K; dh mi yC/k 'k\$kd l kexh dks 'kkfey fd; k x; k g\$ bl ea uohu ek\$yd izuka dK\$ fo"K; oLr\$ f'k{k.k dsmI\$;] dfBukbZLrj vK\$ vadu dh xqkoRrk ds vuq kj l q afBr djdsj [kk x; k g\$ izu cid ea e.My dh ijh{kk ; kstuk ds vuq kj vfry?kq\$Ukjh;] y?kq\$Ukjh; , oa nh?k\$Ukjh; izuka dk l eko\$K fd; k x; k g\$ ifr; ksch ijh{kk dsfy, vH; kl graqoLr\$u"B izuka dk Hkh l eko\$K izu cid eafd; k x; k g\$ ftl l s ifr; ksch ijh{kkvka ds vH; kl ea l gk; rk feyschA ifrfnu] ifr l l rkg] ifrekg vK\$ ifro"Kz uohu izuka ds ckjs ea fo | kFFkz k\$ f'k{kdk\$ i kf'udk\$ ijh{kdk\$ vK\$ l keU; tu l sfo"K; okj e.My uohu izuka dks vkef=r fd; k tkoskA vki ds }kjk i\$kr fo"K; okj uohu izuka dks tkM\$elj ifro"Kz izu cid dk l a k\$ku e.My }kjk fd; k tkosk] ftl l s izu cid vf/kd ifjiwKz vK\$ vk/k\$udre gks\$ jg\$

ep\$svk'kk gSfd e.My }kjk tkjh izu cid fo | kFFkz k\$ f'k{kdk\$ i kf'udka , oa ijh{kdk\$ dsfy, mi; ksch fl) gkschA

'k\$kdkeukvka l fgr---


1/4s feat 1/2
vkbz, -, l -

I fpo

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

fo"K; %& foKku

d{kk nl oha

bdkbz & 01

j l k; fud vfhkfØ; k; a , oa egRoi wkZ j l k; fud ; kfxd

vfr y?kqñÜkjh; izu

izu 1& inkFkk&ea ifjorZu fdrus izdkj ds gkrsgå\

izu 2& j l k; fud cy xfrdh dksLi"V dhft; sA

izu 3& ykgsij tæ yxuk fdl izdkj dh vfhkfØ; k dk mnkgj.k gS\

izu 4& vfhkfØ; k dh nj ij mRij d dk D; k i Hkko i Mf k gS\

izu 5& vfhkfØ; k nj dks ifjHkkf"kr dhft; sA

izu 6& fdl izdkj dh vfhkfØ; k ea l kE; LFkfi r ugha gkrk gS\

izu 7& fdl izdkj dh vfhkfØ; k dks nks rhjka (⇒) }kjk inf'kz djrs gå\

izu 8& vxz vfhkfØ; k dk ox l e; ds l kFk ?kVrk gS tcf d i 'p vfhkfØ; k dk ox l e; ds l kFk c<f k gSA dñ l e; i'pkr~, dh fLFkr vk tkrh gSft l ea vfhkfØ; k dk ox nks ukafn'kkvka ea l eku gks tkrk gSA vfhkfØ; k dh bl voLFkk dks D; k dgrsgå\

izu 9& vfhkfØ; kvka dh og voLFkk ft l ea vk; fud fØ; kdkj dka rFkk mRi knka dk l klnz k ifjofrZr ugha gkrk gS D; k dgrsgå\

izu 10& CaCO₃ ea, d nD inkFkZ dh dñ cmsfeykusij CO₂ xS rsth l sfudy rh gSA feyk; s x; s nD inkFkZ dk uke , oa l = fyf[k; sA

izu 11& ckaVM&ykj h fl)kr ds vuq kj vEy dks ifjHkkf"kr dhft; sA

izu 12& l a keh {kkj fdl s dgrsgå\

izu 13& pH eku dksLi"V dhft; sA

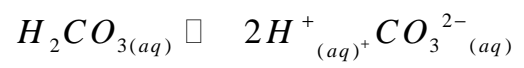
izu 14& l rjk ds tñ dk pH eku fdruk gkrk gS\

izu 15& ukS knj dks ty eafoys djusij foy; u B&k gks tkrk gSA bl vfhkfØ; k dks D; k dgrsgå\

- izu 16& di M_k /k_us d_s l k_M+d_k tyh; foy; u vEyh; gk_sxk vFkok {kkjh; A v_k D; k_a
- izu 17& iÑfr ea l cl smRre foyk; d dk_s g_s\ ml dk eku v_k nks mi ; k_s fyf[k; sA
- izu 18& l kYosveksu; k i_ze }kj k l k_M; e dkck_uv dsfuekZk ea i z, Ør nks dPpsi nkFk_z ds uke fyf[k; sA
- izu 19& [k_us d_s l k_M+d_k jkl k; fud uke v_k jkl k; fud l \neq fyf[k; sA
- izu 20& fojat d p_wkz dk jkl k; fud uke v_k l \neq fy[kdj nks mi ; k_s fyf[k; sA
- izu 21& l Qn j_a dk , d p_wkz i nkFkz ty ds l kFk fefJr djus ij ftll e ea ifjofr_r g_s tkrk g_s bl dk uke] l \neq , oank mi ; k_s fyf[k; sA
- izu 22& dk_p dk l kekl; l \neq fy[kdj bl s i fjHk_f"kr dhft ; sA
- izu 23& dk_p dks uhyk v_k gjk j_a nus ds fy; s dk_s l s i nkFkz feyk; s tkrsg_a\ muds uke v_k jkl k; fud l \neq fyf[k; sA
- izu 24& rki kuq_khru fdl s dgrsg_a\

y?k_mU_kj_h; izu

- izu 1& e_xuhf'k; e ds rkj dks xez djus ij og rhoz i_zdk'k ds l kFk tyrk g_sA bl ifjor_z dk uke fy[kdj ml snks m_nkgj .k }kj k Li "V dhft ; sA
- izu 2& , d l kekl; v_fHk_fØ; k $A+B \rightarrow C+D$ dh l gk; rk l s v_fHk_fØ; k nj dks Li "V dhft ; sA
- izu 3& vk; fud ; k_sx dks ds e/; l Ei luu g_us okyh v_fHk_fØ; k dks D; k dgrsg_a\ , d m_nkgj .k dh l gk; rk l s bl s Li "V dhft ; sA
- izu 4& vEy v_k {kkj ea rhu i_zek v_rj fyf[k; sA
- izu 5& fuEu v_fHk_fØ; kv_ka ea dk_s l k vEy g_s\ v_k D; k_a\



- izu 6& $\frac{N}{1000} HCl$ foy; u dk pH eku Kkr dhft ; sA
- izu 7& pH ds rhu egRo fyf[k; sA
- izu 8& fuEu fyf[kr v_fHk_fØ; k dk uke fy[kdj bl s Li "V dhft ; s &



izu 9& vkgf; I ds vud kj nk&nksmnkj .kka l fgr vEy , oa {kkj dks Li"V dhft; A

izu 10& fuEufyf[kr in kFkk dks ypl vEy] ypl {kkj ea foHkDr dhft; sA



izu 11& H₂SO₄ , d rhoz vEy gS tcf d CH₃COOH , d nqy vEy gSA D; ka \ Li"V dhft; sA

izu 12& 'kq ty dk pH eku fdruk gkrk gS \ vks D; ka \ 'kq ty ds pH eku dh x.kuk dhft; sA

izu 13& fdl h foy; u ea gkbMktu vk; u l klnzk 10⁸³ xke vk; u ifr yHVj gSA bl foy; u dk pH eku Kkr dhft; sA

izu 14& fl) dhft; s% $\frac{K_1}{K_2} = K$

izu 15& nksfoy; u A , oaB ds pH eku Øe'k%4 , oa10 gSA bl eadks foy; u vEyh; rFkk dks {kkjh; gksk \ vks D; ka \

izu 16& I heV ds fuekZk ea iz q r rhu dPps in kFkk dsuke , oa l = fyf[k; sA I heV dk teuk l e>kb; A

izu 17& <yoka ykgs l s bLi kr cukus dh cl ej fof/k dk ukekdr fp= cukb; sA

izu 18& dkp ds fuekZk ea fuEu inka dks Li"V dhft; s&

1/1½ iz q r in kFkZA

1/2½ jkl k; fud vfhkØ; k; a A

1/3½ dkp dk rki kud khru A

nh?kz mUkj; izu

izu 1& bLi kr cukus dh I heu ekfVZu dh [kys ry HkVvh dk fuEu fclnq/ka i j o.ku dhft; s&

1/1½ ukekdr fp= A

1/2½ jkl k; fud l ehdj.k A

1/2 fof/k dh 3 fo'k'krk; a A

izu 2& pmsdsi RFkj l spuk i klr djusdh HkVh dk l fp= o.ku dj Li "V dhft; sfd HkVh dk rki 1000° c l svf/kd ugha gkusfn; k tkrk gSA D; ka \

izu 3& vk; fud l kE; dks i Hkfor djus okys pkj dkj dka dks Li "V dhft; s A

izu 4& , d l keU; mRØe.kh; vfHkØ; k fuEuku kj l Ei Uu gks jgh gS %&

$A + B \rightleftharpoons C + D$ bl vfHkØ; k ds l kE; fLFkj ka k ds fy; sfl) dhft; &

$$K = \frac{[C][D]}{[A][B]}$$

izu 5& "NRrhl x<+ea l heV m | ks dk Hkfo"; mTtoy gSA** Li "V dhft, A NRrhl x<+ ea l heV QDVjh dgk dgk gS \ muds uke fyf[k; s A

&&00&&

bdkbz & 02
i kÑfrd l d k/ku

vfr y?kqñÜkjh; izu

izu 1& osrRo ftueaLora= byDVku gkrs gârFkk tksbyDVku R; kx dj /kuk; u cukrs gâ D; k dgykrs gâ \

izu 2& esMyhQ dk vkorZfu; e fyf[k; sA

izu 3& vkorZl kj .kh ds l eng , d ea fLFkr rRoka dks {kkjh; /kkrq dgrs gâ A D; ka \

izu 4& gkbMkst u v/kkrq gkrs gâ s Hkh ox&, d ea j [kk x; k gSA D; ka \

izu 5& , d srRoka dks D; k dgrs gâ ftuea /kkrq vksj v/kkrq nkaks ds xqk i k; s tkrs gâ \

izu 6& {kkjh; enk /kkrq afdl s dgrs gâ \ vksj D; ka \

izu 7& a-Cykd rRo fdl s dgrs gâ \ vksj D; ka \

izu 8& s-Cykd rRoka dks i fjHkkf"kr dhft; sA

izu 9& l Hkh /kkrq; Å"ek rFkk fo | r ds l pkyd gkrs gâ A D; ka \

izu 10& vHkh rd Kkr rRokaeadk& l h /kkrq Å"ek rFkk fo | r dh l okre pkyd (Best Conductor) gSA vksj D; ka \

izu 11& l kSM; e /kkrq dks feVVh ds rsy ea j [krs gSA D; ka \

izu 12& ^ngyHkZ enk /kkrq a* fdl s dgrs gâ \

izu 13& l kSM; e /kkrq i kuh l sgYdh gSA D; ka \

izu 14& l a ksth byDVku fdl s dgrs gâ \

izu 15& dñ /kkrq/ka ds vkñ l kbM mHk; /keñ i Ñfr ds gkrs gâ A D; ka \

izu 16& l fØ; rk Jskh dks i fjHkkf"kr dhft; sA

izu 17& gesvkbV vksj ckñ l kbM v; Ld dk uke vksj l = fyf[k; sA

izu 18& [kfut vksj v; Ld eanksvrj fyf[k; sA

izu 19& l Hkh v; Ld [kfut gkrs gâ i jUrq l Hkh [kfut v; Ld ugha gkrs gâ A D; ka \
Li "V dhft; sA

izu 20& dkñj ds nks v; Ldks ds uke vksj l = fyf[k; sA

- izu 21& I {kkj.k dks ifjHkkf"kr dhft ; sA
- izu 22& feJ /kkrqfdl sdgrsg\ nks mnkgj.k nhft ; sA
- izu 23& vk; ju /kkrqdk fu"d"kzk fdl v; Ld l sfd; k tkrk gS\ ml dk uke fy[kdj jkl k; fud l = fyf[k; sA
- izu 24& fdu rRoka dks v/kkrq dgrsg\ vksj D; ka \
- izu 25& gkbMkst u ds iæ[k mi ; ksx fyf[k; sA
- izu 26& vHkh rd Kkr rRoka ea l cl s vf/kd fo | r __.kkRedrk fdl rRo dh gS\ vksj D; ka \
- izu 27& vkorZl kj.kh ea fLFkr mi /kkrq/ka ds uke o l dsr fyf[k; sA
- izu 28& , fFky , Ydkgy dk IUPAC uke vksj jkl k; fud l = fyf[k; sA
- izu 29& fd.ou fdl sdgrsg\ , d mnkgj.k fyf[k; sA
- izu 30& ifj'kq) , Ydkgy fdl sdgrsg\
- izu 31& ugkus vksj di Mk- /kks ds l kcu ea dks l k {kkj iz Ør fd; k tkrk gS\ vksj D; ka \
- izu 32& , fl fVd vEy ds nks mi ; ksx fyf[k; sA
- izu 33& viektD fdl sdgrsg\

y?kqñUkj h; izu

- izu 1& l kcu dk LFkku viektD us ysfy; k gSA D; ka \ dkbZ rhu dkj .k fyf[k; sA
- izu 2& , d xS ftl dk ijek.kq Øekad 1 gS dk uke , oa v.kq l = fy[kdj iz ksx'kkyk ea cukus dh fof/k dk uke kadr fp= cukb; sA
- izu 3& og dks l h xS gS tks Toyu'khy gS ml dk uke , oa l dsr fy[kdj ml ds l eLFkkfudka ds vkjs[k [khp dj Li"V dhft ; sA
- izu 4& ^NRrhl x<+[kfut l ank dh nf"V l sl Eiluu jkT; gSA** mi ; Ør mnkgj.k ndj Li"V dhft ; sA
- izu 5& /kkrq/ka , oa v/kkrq/ka ea 4 HkkSrd xqkka ea varj fyf[k; sA
- izu 6& HktZ fdl sdgrsg\ HktZ eq; r%fdl izdkj ds v; Ldka ds fy; sfd; k tkrk

- gS\ bl fØ; k l sv; Ld ea eq; r% dks l s ifjorZu gksrgs\
- izu 7& fuLrki u D; k gS\ fuLrki u fdl idkj ds v; Ldka ds fy; sfd; k tkrk gS\ bl l sv; Ld ea dks l s ifjorZu gksrgs\ fyf[k; sA
- izu 8& , Y; feuka rki h; fof/k D; k gS\ l fp= Li"V dhft; sA
- izu 9& l akkj .k dks i hkkfor djus okys 4 dkj dka dks l aks ea l e>kb; sA
- izu 10& nks/kkrvka ds l ekah feJ .k dks D; k dgrsgs\ bl dk uke fy[kdj bl dscukus ds 4 dkj .k fyf[k; sA
- izu 11& v/kkrvka dh vkDI htU l sfØ; k gksus ij D; k cursgs\ mudh iÑfr ds h gkrh gs\ , d mngkj .k ndj l e>kb; sA
- izu 12& l fe fohkkftr Ni pwkZ dh mi fLFkr ea, d xS dk mi; ksx rsy dksouLi fr ?kh ea cnyus ds fy; sfd; k tkrk gS bl xS dk uke fy[kdj gksus okyh i fØ; k dks Li"V dhft; sA
- izu 13& NRrhl x<+ea geV/kbV v; Ld ikr gksus okys ftyka ds uke fy[kdj ykgs ij yxh tæ dk jkl k; fud uke , oa l = fyf[k; s rFkk tæ l scpko ds nks mik; fyf[k; sA
- izu 14& cgyd dks i fjHkkf"kr dhft; sA i kÑfrd , oa l ays"kr cgyd ea rhu varj fyf[k; sA
- izu 15& PVC dscukus dh fof/k fy[kdj bl ds , d xqk , oa , d mi; ksx dks fyf[k; sA
- izu 16& Vlyku dk jkl k; fud uke , oa l = fyf[kdj bl ds nks xqk , oa nks mi; ksx fyf[k; sA
- izu 17& viektZ D; k gS\ viektZ l kcu l sJ" B gksrgsA dkbZ rhu dkj .k fyf[k; A
- izu 18& viektZ , oa l kcu ea 4 varj fyf[k; sA

nh?kz mÜkj h; izu

izu 1& fuEufyf[kr ; kSxd ea fØ; kRed l enj dh igpku dj muds IUPAC uke fyf[k; sA

(i) HCOOH, (ii) CH₃OH, (iii) CH₃CH₂OH

(iv)
$$\begin{array}{c} \text{CH}_2\text{OH} \\ | \\ \text{CHOH} \\ | \\ \text{CH}_2\text{OH} \end{array}$$

izu 2& og dksu l h x\$ g\$ tks tyusea l gk; d g\$ml s iz kx'kkyk eacukus dh fof/k dk l fp= o.ku dhft; sA ml x\$ ds nks mi ; kx Hkh fyf[k; sA

izu 3& /kkrq/ka , oa v/kkrq/ka ea jkl k; fud xqkka ds vk/kkj ij 5 varj fyf[k; sA

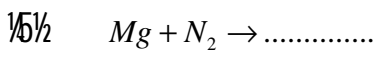
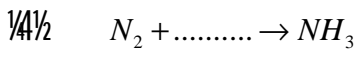
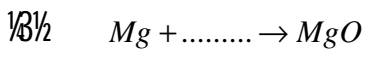
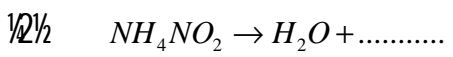
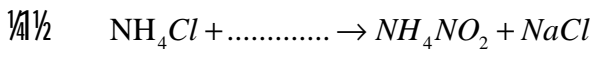
izu 4& , d x\$ tksok; p.My ea yxHkx 78% ik; h tkrh g\$ dks iz kx'kkyk eacukus dh fof/k dk o.ku fuEu fclnq/ka ea dhft; s &

1/1 1/2 uke , oa v.kq l #] 1/2 1/2 jkl k; fud l ehdj.k

1/3 1/2 uke kdr js[kfp= 1/4 1/2 nks ied[k mi ; kx A

izu 5& no voLFkk ea ik; s tkusokyh v/kkrq dk uke , oa l dr fy[kdj vkorZ l kj.kh ea ml ds LFkku dh foopuk dhft; sA

izu 6& fuEufyf[kr l ehdj.k i wkZ dhft; s rFkk iR; d i nkFkZ dk ml ds uhps uke Hkh fyf[k; s &



izu 7& vk; u i klr djus dh okR; k HkVvh dk uke kdr fp= [khdj bl ea gkusokyh jkl k; fud f0; kvka dks fyf[k; sA

izu 8& onkaeamYy\$[kr ^l kejl * uked is i nkFkZ dk jkl k; fud uke , oa l # fy[kdj 'khjs }kjk bl ds fuekZk dh fof/k dks l ehdj.k ndj Li "V dhft; sA

izu 9& , d dkckDI fyd vEy ftl ea fl jds ds l eku xdk gkrh g\$ dk uke , oa l # fy[kdj fd.ou fof/k }kjk bl ds fuekZk dks l fp= l e>kb; sA

izu 10& , fl fVd vEy l sfuEufyf[kr d\$ s i klr djksA l ehdj.k ndj Li "V dhft; &

1/1 1/2 l k\$M; e , l hv\$ / 1/2 1/2 , fFky , l hv\$ /

1/3 1/2 vekfu; e , l hv\$ / 1/4 1/2 gkbMkst u

izu 11& l ay\$kr cgyd ds 5 mnkgj.k fyf[k; sA

&&00&&

bdkbz & 03
Åtkz ds L=kr

vfr y?kqñÜkjh; izu

- izu 1& ØMk dk ijk uke fyf[k; sA
- izu 2& Åtkzdsuohu L=krka dsuke crkb; s\
- izu 3& n'; izdk'k ea ikbz tkusokyh fofHkUu jækæ dsuke Øe l sfyf[k; sA
- izu 4& l w z izdk'k ds iæq[k vo; oka dsuke fyf[k; sA
- izu 5& ?kMh , oaf[kyk&ka eadk& l h l sy yxk; h tkrh gS\ bl l sy ea iz ðr gkusokys nks rRoka dsuke fyf[k; sA
- izu 6& l ksyj dðj ea xksh; ijkorð yxkus l sD; k ykHk gksk \
- izu 7& BM dsfnuka ea baxhBh ds ikl cBus l sgeam"ek dh vultkr ds sgksh gS\
- izu 8& Hkkjr dsfdl h nks ijek.kq'kfDr l a æka dsuke fyf[k; sA
- izu 9& dkp fdu fofdj .kka dks vo'kk&"kr djrk gS\
- izu 10& l ksyj dðj ds nks ykHk fyf[k; sA
- izu 11& iou pDdh dks i pkfyr djus dsfy, nks l hek, Wfyf[k; sA
- izu 12& ukfHkdh; fj; DVj eadk&&dks l k inkFkZend ds: i eami; kx fd; k tkrk gS\
- izu 13& N-x- ds nks ty fo | r mRi knu dñka dsuke fyf[k; sA

y?kqñÜkjh; izu

- izu 1& ck; kx& ds iæq[k ?kVdka dsuke fy[kdj] bl x& ds nks mi; kx fyf[k; sA
- izu 2& , d s rhu dkjdka dsuke fyf[k; s tks ok; q dks xfr nrs gâ \
- izu 3& ukfHkdh; Åtkz ds rhu ykHk crkb; s\
- izu 4& dks yk fdu&fdu : i ka ea ik; k tkrk gS\
- izu 5& iou Åtkz l s dkbz rhu ykHk fyf[k; sA
- izu 6& ijkc&xuh izdk'k rFkk vojDr izdk'k earhu vlurj fyf[k; sA

- izu 7& C.N.G. D; k gS\ bl dk mi ; ks fdu {ks=ka ea gkrk gS\
- izu 8& fdl bZku dk m"eh; eku l okZ/kd gkrk gS\ uke fyf[kdj ml dsm"eh; eku dks fyf[k; sA
- izu 9& l wZds vlnj vuojr ÅtkZ mRi fÜk ds dkj .k dks fyf[k; sA
- izu 10& ${}^2_1H + {}^2_1H \rightarrow {}^4_2He + \dots\dots\dots$
 ¼gkbMkstu ds nks ¼ghfy; e½
 gYds ukfHkd½
 ¼1½ l ehdj .k dks i wkZ dhft ; sA
 ¼2½ i nf' kZ vfHkfØ; k ds uke fyf[k; sA
 ¼3½ ; g vfHkfØ; k fujUrj dgkWi j gkrh gS\

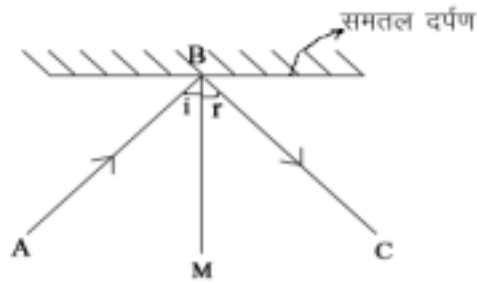
nh?kZ mÜkjh; izu

- izu 1& ck; ksS fuekZk ds xfcn l a æ dk ukekfidr js[kkfp= cukb; sA
- izu 2& ØMk D; k gS\ bl ds eq; mnæS ; fyf[k; sA
- izu 3& vkn'kZ bZku D; k gS\ bl ds i kpb fo'kSkrrk, Wfyf[k; sA
- izu 4& l ksj l sy ds i kpb mi ; ks fyf[k; sA
- izu 5& ukfHkdh; fj; DVj D; k gS\ bl ds fØ; k fof/k dks l e>kb; sA

&&00&&

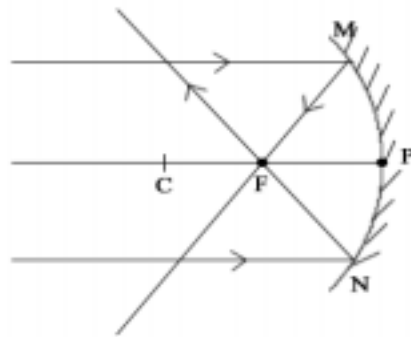
bdkbZ & 04
 izk'k & fo|q & pEcdRo

vfr y?kqñÜkjh; izu



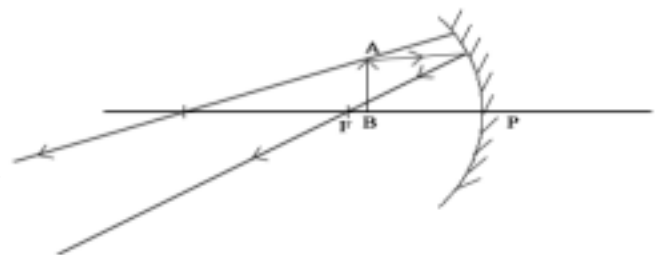
izu 1&

mi jkDr fp= eacrk; sfd AB, BC, BM D; k inf'kr djrh gS



izu 2&

s MN ,d vory nizk gS rks fp= ea inf'kr l dsk{kjka duke fyf[k, ,oa ifjHkkf"kr dhft, A



izu 3& fdj.k iFk iwZ dhft, &

izu 4& fuEu eaiZ Dr nizk dk uke fyf[k, &
 ¼½ eksj okgu ds ihNs dk V\$Qd n[kus dsfy,
 ½½ MKDVj }kjk dku] ukd] xyk vkfn dh tkp ea

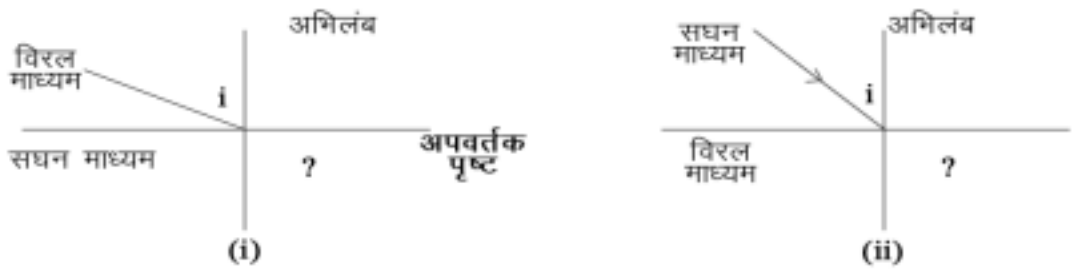
izu 5& fuEu fLFkr; ka ea dks I k nizk iz Dr djksfyf[k, &
 $\frac{1}{4}\frac{1}{2}$; fn nizk dsI Eeq[k j [kh oLrqdk ifrfca I nD I h/kk rFkk oLrqI sNk/k cusA
 $\frac{1}{2}\frac{1}{2}$; fn nizk dsI Eeq[k oLrqdk ifrfca mYnk o oLrqI sNk/k cusA

izu 6& ml nizk dk uke fyf[k, ftI ea%&
 $\frac{1}{4}\frac{1}{2}$ js[kh; vko/kZu dk eku I nD , d I sde gksrk gS
 $\frac{1}{2}\frac{1}{2}$ js[kh; vko/kZu dk eku 1] 1 I sde ; k 1 I svf/kd gksrk gSA

izu 7& I a keh QkdI fdl sdgrsg\ ; g fdl nizk ea ikr gksrk gS\

izu 8& ; fn vory nizk dh QkdI njh 20 I eh gsrksml dh oOrk f=T; k Kkr djka

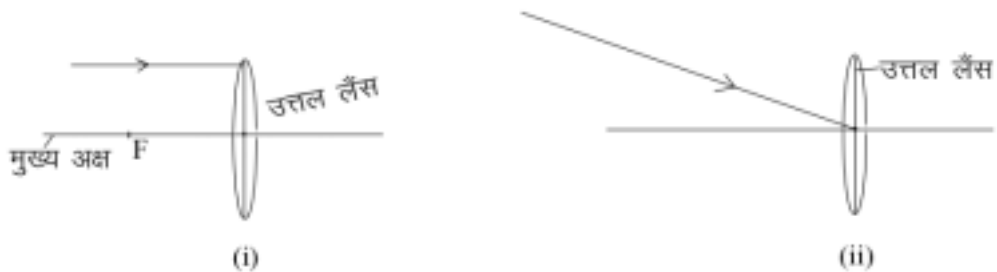
izu 9& fuEu fdj.k iFk dks iwZ dhft, &



izu 10& ; fn gok dsI ki \$k dkp dk mi orZkd $\mu_g = \frac{3}{2}$ gksrksdkp dsI ki \$k ok; qdk viorZ μ_a Kkr dhft, A

izu 11& ghjsdk viorZkd 2 gSA ghjsea izdk'k dh pky D; k gksx \

izu 12& fdj.k iFk iwZ dhft, &



izu 13& ifrfca ns[kdj mUky yI o vory yI dh igpku fdl izdkj fd;k tk I drk gS\ fyf[k, A

- izu 14& mUky y8 dsI Eed[k j [kh oLrq; fn y8 dsQkdI ij fLFkr gSrkS i frfcEc dh fLFkfr] i Nfr crkb; sA
- izu 15& us= dh ^l eatu {kerk** fdl sdgrsg8\
- izu 16& ¶; ut cYc ea i kuh Hkj dj ns[kus I sv{kj cM9fn [kkbz nrs g\$ D; ka \
- izu 17& xfr'khy vko'sk dh xfr dh fn'kk dk Kku fdl Hkk8rd jkf'k ds }kjk gkrk g\$. bl Hkk8rd jkf'k dk uke fy[kdj i fjHkkf"kr dhft, , oa ek=d fyf[k, A
- izu 18& ^, fei ; j** fdl Hkk8rd jkf'k dk ek=d g\$ \ ml Hkk8rd jkf'k dh i fjHkk"kk fyf[k, A
- izu 19& 10 vke ds5 i frjksk I ekarj Øe ea tM9gks rks i fj.kkeh i frjksk Kkr dhft, A
- izu 20& foHko o /kkjk dks fdl ; æ I sekik tkrk g\$\
- izu 21& fuEu dk I dr crkb; s%&
- ¼½ /kkjk fu; æ=d] ½½ I sy] ¾½ cVjh] ¼½ lyx dqt h ¼[ky h½
- izu 22& ¶; ut rkj ds nks i æ[k xqk fyf[k, A
- izu 23& iR; korhZ /kkjk o fn"V /kkjk dks I e; xkQ ds: i ea inf'kr dhft, A
- izu 24& bysDVd id ea fdl feJ /kkrq dk mi; ks fd; k tkrk g\$\ bl ds vo; o fyf[k, A
- izu 25& fo|¶ vi?kVu fdl sdgrsg8\ bl fØ; k ea fo|¶ mtkZ dk : i krj.k fdl ea gkrk g\$\
- izu 26& i kFkfed I sy D; k g\$\ bl ds nks mnkgj.k nhft, A
- izu 27& fo|¶ pñcdh; ij.k I ædkh ¶lyææ ds nk; sgkFk fu; e fyf[k, A
- izu 28& pñcdh; {ks= dh rho'rk dks i fjHkkf"kr dhft, A ; g I fn'k jkf'k gSvFkok vfn'k jkf'k fyf[k, A
- izu 29& pñcdh; cy js[kk, W, d nW js dks dHkh Hkh ugha dkVrh] dkj.k Li"V dhft, A
- izu 30& mnkl hu fcnqfdl sdgrsg8\ bl fcnqij ; fn dkbZfnDI ph I pZj [kh tk, rks crkb; sog fdl fn'kk ea Bgjsxh \
- izu 31& ^pñcdh; ; kE; kRrj** , oa ^Hkksksfyd ; kE; kRrj** dks i fjHkkf"kr dhft, A
- izu 32& Hkw pñcdh; rRoka ds dny uke fyf[k, A

y?kqñUkj h; i zu

izu 1& fuEu dFku ds vk/kkj ij vory nizk l s cuus okys i frfcEc dk fdj.k i Fk [k h f p a &

dFku%& ^i frfcEc dh iÑfr okLrfod i frfcEc dh vkÑfr & mYV k , o a i frfcæ dk foLrkj oLrqdscjkj gSA**

izu 2& vkHkl h , o a o k L r f o d i f r f c æ e a 3 i æ [k v a j d h f t , A

izu 3& ^f d l h v o r y n i z k d h O k d l n i j h m l d h o Ø r k f = T ; k d h v k / k h g k r h g S A ** b l v o / k k j . k k d k v k o ' ; d i f j i F k c u k d j b l s f l) d h f t , A

izu 4& , d v o r y n i z k d s e [; v { k i j / k p l s 3 0 l e h d h n i j h i j f L F k r o L r q d k i f r f c æ o L r q d s Å i j g h c u r k g S r k s n i z k d h O k d l n i j h r F k j s [k h ; v k o / k L U K k r d h f t , A

izu 5& ^f u j i s k v i o r L u k d ** , o a ^ l k i s k v i o r L u k d ** d k s i f j H k k f " k r d h f t , A

izu 6& fuEu dkj d k a i j f d l h i n k F k z d s v i o r L u k d d h f u l H k j r k L i " V d h f t , &

¼½ e k / ; e d h H k k s r d v o L F k k i j] ½½ i d k ' k d s j a x i j

¾½ e k / ; e d s t k M s d h i Ñ f r i j

izu 7& fuEu l # d h 0 ; q i f r r v k o ' ; d f p = c u k r s g q d h f t , &

$$g\mu w \times w\mu g \times g\mu a = 1$$

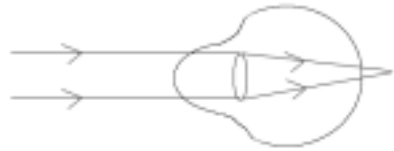
t g k a , w , g Ø e ' k % o k ; j t y v k s d k p d s f y , i z Ø r g S A

izu 8& ^g h j s d k p e d u k ** i d k ' k d h f d l ? k V u k d k s b a x r d j r k g S \ m D r ? k V u k d h 2 i æ [k ' k r z f y f [k , A

izu 9& ^i s j L d k s ** e a i w k z i j k o r b d f i T e d k i z k x f d l i d k j f d ; k t k r k g S \ L o P N L i " V f d j . k i F k c u k b ; s A

izu 10& ^, d 0 ; f D r f u d V d h o L r q d k s L i " V n s [k i k r k g S y f d u m l s n i j d h o L r q L i " V f n [k k b z u g h a i M f h ** c r k b ; s o g 0 ; f D r f d l n f " V n k s k l s i h f M f g S \ b l n k s k d k d k j . k c r k r s g q f u o k j . k d s m i k ; f y f [k , A

izu 11&



दोष युक्त नेत्र

mi jkDr fp= dsvk/kkj ij crkb; sfd 0; fDr dks

dku l k nfv nksk gs\ bl nksk dsfuokj.k dsfy, D; k ; qDr vi ukuh i Mxkh ftl l sfd og Li "V ifrfca nsk l dsfdj.k i Fk dh l gk; rk l s l e>kb; sA

izu 12&

ekuo us= vkj dsearhu iedk vl ekurk, afyf[k, A

izu 13&

fdlgh nks fLFkj vko'kka ds e/; yxus okys vkd"zk k ; k ifrd"zk cy l cakh fu; e dk dFku fyf[k, , oabl fu; e dh l gk; rk l s , dkd vko'k dks ifjHkkf"kr dhft, A

izu 14&



mi jkDr xkQ fdl fu; e dh vkj baxr djrk gsuke fyf[k, , oabl dh l gk; rk l s ^ifrjksk** dks ifjHkkf"kr dhft, A

izu 15&

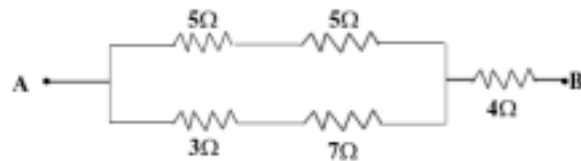
fdl h pkyd dsml xqk dks D; k dgrs gsftl dsdkj.k og vi usea idkfg gksus okyh /kkjk dk fojksk djrk gs\ bl xqk dks iHkkfor djus okys iedk dkjdka dsuke fyf[k, A

izu 16&

fdl h pkyd inkFkZ dsml vfHkyk{kf.kd xqk dk uke fyf[k, tks pkyd dh yackbz o {ks=Qy ij fullkj ugha djrk A bl xqk dh ifjHkk"kk fyf[k, A

izu 17&

A o B dschp rj; ifrjksk Kkr dhft, &



izu 18&

fo | r mtzkdk 0; ki kfjd ek=d D; k gs\ uke fyf[k, , oabl eafdrustny gksrs gskkr dhft, A

izu 19&

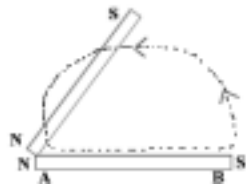
^vfrHkkj.k** , oa ^y?kq Fku** dks ifjHkkf"kr dhft, , oa bu nksuka ?kVukvka l s l j {kk %cpu% ds mik; fyf[k, A

izu 20& fuEu l syks dsfo | r vi ?kV÷] d f k k M] , ukM fyf[k, &

¼½ 'ktd l sy] ½½ l hl k l pk; d l d

izu 21& ^jksVstu** us, d fo'kSk i zdkj dsfdj .kka dh [kkst dh Fkh A ml fdj .k dk uke fyf[k, , oaml ds2 xqk o 2 mi ; kx fyf[k, A

izu 22& ^de nkc ij xS kaeafu | r dk i zdkgr gksuk** fdl ?kVuk dks i nf' kr djrk gS bl ?kVuk dsfy, iz r mi dj .k dk LoPN ukekfdp fp= cukb; sA



izu 23&

Nf=e p fcd cukusdh fp= eai nf' kr fof/k dk uke fyf[k, , oaNm+AB fdl i zdkj p fcd r gks tkrk gSA l e>kb; sA

izu 24& fuEu dkj .kka l sp fcd dk p fcd Ro fdl i zdkj u"V gks tkrk gSLi "V dhft , &

¼½ p fcd dks i hVus l s ½½ p fcd dks xeZ djus l s

¾½ vl; p fcdh; oLrqka l sl a fdr djus l sA

izu 25& ^p fcdh; j {kd** D; k gS \ bl dk fueZk fdl i zdkj fd; k tkrk gS \

izu 26& ^p fcdh; cy j s [kk** dks i fj Hkkf"kr dhft , , oabl ds3 i zdkj xqkka dks fyf[k, A

izu 27& ^gekjh i Foh Lo; a, d cM+ p fcd dh Hkkar dk; Z djrh gS* bl dFku ds i {k ea rhu i ek .k fyf[k, A

izu 28& vki dks ykgs dh nks l e: i NM+nh xbz gSftues l s, d vo'; gh p fcd r gA vki dS s i rk yxk; xafd nksuks NM+ p fcd r gS vFkok ughaA

izu 29& ; fn i Foh ds p fcd Ro dk {kfrt ?kVd 0-36 v k LVM gS v k s ueu dks k 45° gS rks ml LFku ij i Foh ds p fcd h; {ks= dh l a w k z r h o r k Kkr dhft , A

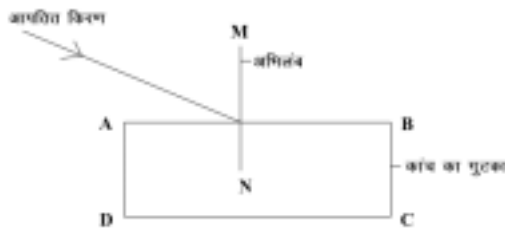
y?kqñÜkj h; izu

izu 1& ; fn mÜky nizk dh Qkd l njih £, oLrqdh njih u rFkk i frfca dh njih v gks rks buds chp i kjLi fjd l cak crkus okys l = dks fl) dhft , A

izu 2& ^tc dkbz oLrqvory nizk ds Qkd l , oaoØrk dñz dse/; gkrh gS rks ml dk

i frfcæ oØrk dlnzl sijscurk gsrFkk okLrfod gkrk gSA** bl I 9 kãrd dFku
 dk mi ; kx djrsqg fdl h vory nizk dh QkdI njih Kkr djusdh fof/k dk
 o.ku fuEu fclnq/ka ds vk/kkj ij dhft, & ¼1½ ukekãdr j[kk fp=]
 ½2½ voyksdu rkfydk] ½3½ nks I ko/kkfu; kã/A

izu 3&



mi jkDr fp= dks iwZ djrsqg I afnra fu; e dksfyf[k, , oabl
 fu; e dk mi ; kx djrsqg iz kx'kkyk ea dk ds xv/ds dk vi orZkad Kkr
 djus dh fof/k dk o.ku fuEu 'kh'kZka ds vk/kkj ij dhft, & ¼1½ fl) kar]
 ½2½ voyksdu I kfj.kh] ½3½ nks I ko/kkfu; kã/A

izu 4&

izk'k dks oØh; ekxZeapykusdsfy, fdl fl) kar dk mi ; kx djrsqg\ bl
 fl) kar ij vk/kkfjr ; qDr dk LoPN ukekãdr fp= cukrsqg ml dh I j puk , oa
 dkbZ3 iæq[k mi ; kx fyf[k, A

izu 5&

ekuo us= dk LoPN ukekãdr fp= cukb; sA

izu 6&

tc fdl h oLrqdk ^LFkk; h i frfcæ** i klr djuk gks rksge fdl ; æ dk iz kx
 djrsqg\ bl ; æ ds iæq[k Hkkxka dk uke fyf[k, , oadk; fof/k Li"V dhft, A

izu 7&

, d , d k ; æ ftl dh I gk; rk I s vkdk'kh; fi .Mka dks vkof/kZr : i ea n[kk
 tkrk g\$ dk Li"V LoPN ukekãdr fp= cukb; sA

izu 8&

R vke okysn i frjks'kka dk ifj.kkeh i frjks'k nR i klr djusdsfy, i frjks'kka dk
 dksu I k I a kstu djuk i Mxk A mDr I a kstu dh I gk; rk I s rhu i frjks'kka
 R₁ R₂ R₃ dsfy, ifj.kkeh i frjks'k dh x.kuk dhft, A

izu 9&

, d I y ftl dk mi ; kx ge : d&: d dj vYi I e; rd /kkjk i ðkfgR djus
 dsfy, djrsqg dk uke fyf[k, , oamDr I y dk LoPN ukekãdr fp= cukrs
 qg dk; Z fof/k fyf[k, A

izu 10&

, d , d h ; qDr dk o.ku fuEu 'kh'kZka ds varxZ dhft, tks fo | q mtkZ dk
 : i karj.k ; kã=d mtkZ ds: i ea djrk gS&

¼1½ LoPN ukekãdr fp=] ½2½ dk; Z fof/k

izu 11& fol tū ufydk ea 0.01 mm i kjs dk nkc , oa 10,000 okV dk mPp foHkoka rj
yxkus ij dk& I h ?kVuk gkrh gS\ bl ?kVuk I sfudyusokyh fdj.k ds i k p
iæq[k xqk fyf[k, A

izu 12& Hkwpēcdh; vo; oka dks ifjHkkf"kr djrsgq muea ij Li j I ædk 0; Dr djusokys
I = dk ifriknu dhft, A

izu 13& fdl h Ñf=e n.M pēcd dk mÙkj h /kp HkkSksyd nf{k.k fn'kk dh vkj j [kdj
pēcdh; cy js[kk [khp us I ædkh iz kx dk o.kū fuEu 'kh"kdka ds vk/kkj ij
dhft, &

¼½ i k; kfxd fp=] ½½ iz kx fof/k] ¾½ nks iæq[k I ko/kkuh A

&&00&&

bdkbz & 05
t6 if0; k, W

vfr y?kqñÜkjh; izu

- izu 1& ekuo 'kjhj esä k; s tkus okys l cl scMh ikpd xñFk dsuke fyf[k; sA
- izu 2& ikpu ræ dsfdl Hkkx ea l V; gylst dk ikpu gkrk gS\
- izu 3& gekjseq ea ik; s tkus okys , d vo'ksh vx dk uke fyf[k; sA
- izu 4& euq; ds eq ea ik; h tkus okyh ykj xñFk; ka dsuke fyf[k; sA
- izu 5& ikpu dk D; k vFkZgS\ LVkpZ ds ikpu l sHkktu dk dkñ l k vo; o iklr gkrk gS\
- izu 6& miokl ds l e; geaÄtkz'kjhj ds vlnj dgkñ l s iklr gkrh gS\ bl egRoi wkZ inkFkZ dk fuekZk fdl l s gkrk gS\
- izu 7& izk'k dsfdl jak ea izk'k l äyšk.k dh f0; k l cl s de gkrh gS\
- izu 8& izk'k dsfdl jak ea izk'k l äyšk.k dh f0; k l cl s vf/kd gkrh gS\
- izu 9& izk'k l äyšk.k dh f0; k ea dke vkus okyh dPps inkFkZ dsuke fy[kks\ bl f0; k l smRi l lu gkus okyh vkDI ht u xS fdl inkFkZ l s iklr gkrk gSA
- izu 10& , d s tho dk uke crkb; sftuds'kjhj eajDr dk jak uhyk gkrk gS\
- izu 11& fu"kpudks i fjHkkf"kr dhft; sA
- izu 12& ; kekupzk fdl sdgrsgñ\
- izu 13& Qynkj i kška ea iñiu , oaQy fuekZk dsfy, fdl ikni gkekñ dk fNMelko djuk pkfg, A
- izu 14& gekjh Ropk ds }kjk mRl tZu dh f0; k ds s gkrh gS\ bl dk , d egRo fyf[k; A
- izu 15& l gthfork D; k gS\ mnkgj.k ndj Li"V dhft; sA
- izu 16& i Fkj jksx D; k gS\ ; g jksx fdl ds dkj.k gkrk gS\
- izu 17& jDr ds FkDdk teusea l gk; d i kñ/hu dsuke fyf[k; s\
- izu 18& fdl : f/kj d.k dks 'kjhj dk l j{kk igjh dgk tkrk gS\
- izu 19& E.C.G. vñ E.E.G. dk ijk uke fyf[k; sA

- izu 20& ekrkvka ea n/k fuekz k dks mnñfi r djus okys gkeku dsuke fyf[k; sA
- izu 21& uj ,oa eknk tuu vaka ds }kjk L=kfor gkus okys , d&, d gkeku dsuke fyf[k; sA
- izu 22& iydka dk >iduk ,oa Nhduk fdl izdkj dh fØ; k gS \ bl dh ifjHkk"kk fyf[k; sA
- izu 23& , d snks thoka dsuke fyf[k; s tks l M&xys inkFkk l svi uk thou fuokg djrs gS \ bl i kSk.k fof/k dsuke fyf[k; sA
- izu 24& 'ol u xqkkad ds l = fyf[k; sA
- izu 25& vkuo'ka'kd foKku ds tud dksu gS \

y?kqñUkj h; izu

- izu 1& l uekadg D; k gS \ buds i æ[k dk; Z dks fyf[k; sA
- izu 2& : f/kj cfd D; k gS \ oržeku ea bl dh vko' ; drk D; ka gS \
- izu 3& izdk'k vñk fØ; k i .kz gfje ds fdl Hkkx ea gks k gS \ bl Hkkx dk dny ukekad r fp= cukb; sA
- izu 4& Rh dkjd fdl sdgrsgS \
- izu 5& vkuo'ka'kd foHkkurk ds rhu dkj .k fyf[k; sA
- izu 6& fuEu tUrka ea mRI tñ vaka dsuke crkb; s &
 $\frac{1}{4}\frac{1}{2}$ >hækj $\frac{1}{2}\frac{1}{2}$ gkbMK $\frac{1}{3}\frac{1}{2}$ pi Vh Ñfe $\frac{1}{4}\frac{1}{2}$ eut;] $\frac{1}{5}\frac{1}{2}$ dpyk $\frac{1}{6}\frac{1}{2}$ dkdj k p
- izu 7& mRI tñ ds rhu egRo dks fyf[k; sA
- izu 8& oDd ds jkxh dks Mk; fyf l ea D; kaj [kk tkrk gS \ dkj .k l fgr Li "V dhft; sA
- izu 9& i q: nHkou fdl sdgrsgS \ mnkgj .k l fgr Li "V dhft; sA
- izu 10& , d ik: fi d v.Mi dk ukekad r fp= cukb; sA
- izu 11& D.N.A. vkj R.N.A. ea rhu vUrj fyf[k; sA
- izu 12& okl DVkeh , oa V; DVkeh dk vFkz Li "V dhft; sA
- izu 13& vfu"ka'kd tuu D; k gS \ bl ds nks egRo crkb; sA

- izu 14& vkDI hu D; k gS\ bl ds rhu dk; Zfyf[k; sA
- izu 15& ew# fuekZk dh fØ; k ea oj.kkRed i u%vo'kkSk.k D; k gS\ Li"V dhft; sA
- izu 16& fd.ou ds rhu 0; ki kfjd egRo crkb; sA
- izu 17& rEckdw ds rhu 0; ki kfjd egRo crkb; sA
- izu 18& i kSkka ea vf/kd Åpkbã rd i kuh p<us ds nks dkj.k fyf[k; sA
- izu 19& ekLVj xffk fdl s vkSj D; ka dgrs gS\
- izu 20& ykxka dks vk; kMhu ; Ør ued fuR; I ou djus dh I ykg D; ka nh tkrh gS\
rhu dkj.k fyf[k; sA

nh?kz mÜkj; izu

- izu 1& : f/kj I eg D; k gS\ buds izdkjka dk o.ku dhft; sA
- izu 2& eut; ds ikpu r# dk fp= cukdj fuEu v#ka dks ukekfidr dhft; s&
¼½ , i f.MDI] ½½ ; Ñr] ¾¾ eyk'k;] ¼¼ dkyu] ½½ vXuk'k;
- izu 3& fl) dhft; sfd izdk'k I aySk.k ea vkDI htu xS fudyrh gS\
izu 4& vkDI h , oa vukDI h 'ol u ea ikp vlrj fyf[k; sA
- izu 5& jDr ea co₂ xS dk ifjogu fdl rjg gsrk gS\ o.ku dhft; sA
- izu 6& : f/kj , oa yfl dk ea pkj vlrj fyf[k; sA
- izu 7& fuEu ij fVli .kh fyf[k; s&
¼½ SA ukM] ½½ mRi fjorZ] ¾¾ ij kx.k
- izu 8& thu D; k gS\ buds i ed[k fo'kSkkrkvka dks fyf[k; sA
- izu 9& xeZcrZ dks vpkud Nwysus ij vkg-- ds I kFk eg dk [kyuk] gkFk dk QkS u
gVk ysk dks I h fØ; k gS\ bl fØ; k dh ifjHkk"kk , oa fØ; kfof/k fy[kdj
ukekfdr i Fk n'kkb, A
- izu 10& eut; eafy# fu/kkj .k dk doy ukekfidr vkj[k cukb; sA

&&00&&

bdkbz & 06
gekjk i ; kbj.k

vfr y?kqñÜkjh; i zu

- izu 1& vktksu ijr ; k vktksu e.My D; k gS\
- izu 2& i ; kbj.kh; i nllk.k fdl s dgrsgs\
- izu 3& ok; qdks i nll'kr djusokys dkbz 4 i æq[k xS h; i nllkd fyf[k; sA
- izu 4& Lopkfyrokgu l s dksu l k i nllk.k mRi uu gksrk gS\
- izu 5& eukjat u ds l k/kukads iz kx l smRi uu i nllk.k dk uke fy[kdj ml ds jkdFkke ds nks mik; fyf[k; sA
- izu 6& ikfjLFkfrd l rnyu l svki D; k l e>rs gks\
- izu 7& ikñfrd l d k/ku D; k gS
- izu 8& ijkcSuh fofdj.kka ds 2/nkz nti Hkko fyf[k; sA
- izu 9& vtö fuEuhñr i nllkd ds dkbz nks mnkgj.k fyf[k; sA
- izu 10& vktksu ijr dk {k; gks jgk gSA D; ka \ dkbz nks dkj.k fyf[k; sA
- izu 11& vEyh; o"kkZ dks Li"V dhft; sA
- izu 12& vEyh; o"kkZ ds nks i æq[k ?kVd xS ka ds uke , oa l = fyf[k; sA
- izu 13& /ofu , oa 'kkj ea nks i æq[k varj fyf[k; sA
- izu 14& of'od m".krk (Global Warming) dks Li"V dhft; sA
- izu 15& vktksu ijr dks gkfu i gpkusokys j l k; u dk uke fyf[k; sA
- izu 16& D; k gksk ; fn okrkj.k ea CO₂ dh i fr'kr ek=k ea of) gks tk; \ l {k ea Li"V dhft; sA

y?kqñÜkjh; i zu

- izu 1& tö fuEuhñr i nllkd , oa vtö fuEuhñr i nllkd earhu varj fyf[k; sA
- izu 2& i ; kbj.k l rnyu ea ekuo dh Hkfedk D; k gksuh pfg, \ fdllgh rhu fcllñy/ka dks l e>kb; sA

- izu 3& xhu gkml i Hkko fdl sdgrsgā\ xhu gkml i Hkko dsfy; smRrjnk; h xS ka dk mYyq[k dhft; sA
- izu 4& ikÑfrd l d k/ku D; k gS\ ekuo mu ij fdl idkj fuHkj gS\
- izu 5& ok; qds l ?kVd vo; oka dsuke mudh i fr'kr ek=k ds l kFk fyf[k; sA
- izu 6& ikÑfrd l d k/ku dsdkbz 6 ¼N% mnkgj .k fyf[k; sA
- izu 7& ok; q inñk.k dsfy; s thok"e bz kuka dk vi wkz ngu gh eq; dkj .k gSA Li"V dhft; sA
- izu 8& tšod ?kVd rFkk vtšod ?kVd i; kbj .k dsjpukRed Hkkx gāA l e>kb; sA

nh?kz mÜkjh; izu

- izu 1& ty inñk.k fdl sdgrsgā\ ty inñk.k dsdkbz pkj dkj .k fyf[k; sA
- izu 2& ok; q inñk.k dks ifjHkkf"kr dhft; sA ok; q inñk.k dh jkdFkke dsdkbz 5 mik; fyf[k; sA
- izu 3& enk dsfoÑr gks l s dks l k inñk.k mRi l u gks k gS\ bl dk uke fy[kdj bl dh jkdFkke ds ikp mik; fyf[k; sA
- izu 4& ty inñk.k dks Li"V dhft; sA ty inñk.k dsdkbz pkj dkj .k fyf[k; sA
- izu 5& ty inñk.k dh jkdFkke , oafu; æ .k vkt dh l cl sieq[k l eL; k gSA D; ka \ Li"V dhft; sA bl inñk.k dh jkdFkke dsdkbz rhu mik; fyf[k; sA
- izu 6& ty inñk.k dsfy; sekuo gh mÜkjnk; h gSA bl dFku dks ikp fclnq/ka }kj k Li"V dhft; sA
- izu 7& /ofu inñk.k dks ifjHkkf"kr djrs gq s bl dsdkbz pkj dkj .k fyf[k; sA
- izu 8& /ofu inñk.k dsfu; æ .k dsdkbz ikp mik; l q>kb; sA
- izu 9& ty dk l j{k.k dsdkbz ikp mik; crkb; sA
- izu 10& enk inñk.k ds4 dkj .kka dks fy[kdj euq; dsfy; s bl dsegRo dks ifri kfnr dhft; sA

&&00&&

ifjfk'kV

Kku vk/kkfjr izu &

- izu 1& vfhkfØ; k nj dks ifjHkkf"kr dhft, A
- izu 2& ctLVM&ykWh vEy dks ifjHkkf"kr dhft, A
- izu 3& dkp dk l keku; l = fy[kdj bl s ifjHkkf"kr dhft, A
- izu 4& l heV dsfuekZk esāz, Dr rhu dPps inkFkz dsuke, oal = fyf[k, A
- izu 5& s rRok dks ifjHkkf"kr dhft, A
- izu 6& l fØ; rk Jskh dks ifjHkkf"kr dhft, A
- izu 7& geVkbV vkj ctDI kbV v; Ld dk uke vkj l = fyf[k, A
- izu 8& viektZl fdl sdgrsgā\
- izu 9& u= dh l eatu {kerk dks ifjHkkf"kr dhft, A
- izu 10& pfcdh; {k= dh rhork dks ifjHkkf"kr dhft, A
- izu 11& fuji{k viorZukd, oal ki {k viorZukd dks ifjHkkf"kr dhft, A
- izu 12& vfrHkkj.k, oay?kq Fku dks ifjHkkf"kr dhft, , oabu nksuka?kVukvka l scpus ds mik; fyf[k, A
- izu 13& Hkw pfcdh; vo; ; ka dks ifjHkkf"kr djrsgq mueaijLij l cak 0; Dr djusokys l = dk ifriknu dhft, A
- izu 14& ; kekupak dks ifjHkkf"kr dhft, A
- izu 15& rEckdwds l ou l sgkusokyh pj 'ol u jkska dsuke fyf[k, A]
- izu 16& i kÑfrd l d k/ku dks ifjHkkf"kr dhft, A
- izu 17& vkstku ijr dks gkfu i gpkusokys j l k; u dk uke fyf[k, A
- izu 18& ok; qds l ?kVd vo; oka dsuke mudh ifr'kr ek=k ds l kfk fyf[k, A

vocksk ij vk/kkfjr izu &

- izu 1& CaCO₃ ea, d nō inkFkZ dh dN cmsfeykus ij CO₂ xS rsth l sfudyrh gā

feyk; s x; s nð inkFkZ dk uke , oa l ≠ fyf[k, A

izu 2& I Qn jæk dk , d pwnkZ inkFkZ ty dsl kFk fefJr djusij ftll e ea ifjofnr gks tkrk gSA bl inkFkZ dk uke] l ≠ , oa 2 mi ; ks fyf[k, A

izu 3& dkp dks uhyk vkj gjk jæk nus ds fy, dk u l sinkFkZ feyk, tkrsga\ muds uke vkj jkl k; fud l ≠ fyf[k, A

izu 4& fuEufyf[kr inkFkZ dks ypl vEY] ypl {kkj ea foHkDr dhft ; sA



izu 5& H_2SO_4 , d rhoz vEY gS tcf d CH_3COOH , d nqj vEY gSA D; ka \ Li"V dhft ; sA

izu 6& vk; ju /kkrdk fu"d"kZ k fdl v; Ld l sfd; k tkrk gS\ ml dk uke fy[kdj jkl k; fud l ≠ fyf[k, A

izu 7& vHkh rd Kkr rRoka ea l cl svf/kd fo | r __. kkrRedrk fdl rRo dh gS\ vkj D; ka \ Li"V dhft , A

izu 8& l qe foHkft r fufdy pwnkZ dh mi fLFkr ea, d xj dk mi ; ks rjy dksouLi fr ?kh ea cnyus ds fy, fd; k tkrk gSA bl xj dk uke fy[kdj gkus okyh ifO; k dks Li"V dhft , A

izu 9& og dk u l h xj gS tks tyus ea l gk; d gS\ ml s iz ks'kkyk ea cukus dh fof/k dks fuEu fclnq/ka ij Li"V dhft , &

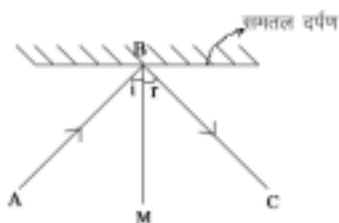
¼½ jkl k; fud l ehdj .k] ½½ nks iedk l ko/kkfu; kW

izu 10& onka ea mYyf[kr "l kejl ** uked is inkFkZ dk jkl k; fud uke , oa l ≠ fy[kdj 'khjs }jk bl ds fueZk dh fof/k dks l ehdj .k ndj Li"V dhft , A

izu 11& C.N.G. D; k gS\ bl dk mi ; ks fdu {ks=ka ea gkrk gS\

izu 12& fdl bZku dk m"eh; eku l okZ/kd gkrk gS\ uke fy[kdj m"eh; eku fyf[k, A

izu 13&



mi jkDr fp= eacrk; sfd AB, BC, BM D; k gS

- izu 14& ^, fEi ; j** fdl Hkkšrd jkf'k dk ek=d gS \ ml Hkkšrd jkf'k dh ifjHkk"kk fyf[k, A
- izu 15& pŕcdh; cy js[kka , d nŕ js dks dHkh ugh dkVrh \ dkj.k Li"V dhft, A
- izu 16& ^ghjsdk peduk** i dĸ'k dh fdl ?kVuk dks bāxr djrk gS\ mDr ?kVuk dh 2 iæĸ'k 'krž fyf[k, A
- izu 17& ^, d 0; fDr fudV dh oLrqdksLi"V nŕ[k i krk gSyfdu bl snj dh oLrqLi"V fn[kkbZ ugha i M-fh** crkb; sog 0; fDr fdl nŕ"V nŕšk l si hfM-f gS\ bl nŕšk dk dkj.k crkrs gq fujkdj.k ds mik; fyf[k, A
- izu 18& tc fdl h oLrqdk ^LFkk; h i frfcæ** i klr djuk gks rksge fdl ; æ dk iz kx djrsgS\ bl ; æ ds iæĸ'k Hkkxka dk uke fyf[k, , oadk; Zfof/k Li"V dhft, A
- izu 19& fdl h pkyd ds ml xqk dks D; k dgrsgŕftl ds dkj.k og vi usea i dĸgr gks us okyh /kkjk dk fojšk djrk gS\ bl xqk dks i Hkkfro djus okys 4 iæĸ'k dkj dka ds uke fyf[k, A
- izu 20& ykxks dks vk; kMhu ; ņr ued fur; l ņu djus dh l ykg nh tkrh gSD; ka \ dkbZ 3 iæĸ'k dkj.k fyf[k, A
- izu 21& D; k gksk ; fn okroj.k ea co₂ dh i fr'kr ek=k ea of) gks tk, \ l ŕki ea Li"V dhft, A
- izu 22& enk ds foŕr gks l s dks l k i nŕk.k mRi l u gksrk gS\ ml dk uke fy[kdj bl ds jkdFkke ds i kŕ mik; fyf[k, A

vuĸz kx , oa dks ky vk/kkfjr izu &

- izu 1& <yokŕy kgs l s bl i kr cukus dh cŕ ej fof/k dk uke kŕdr fp= cukb; s A
- izu 2& , d xŕ ftl dk ijkek.k Øekd 1 gŕ dk uke , oa v.kq l ŕ fy[kdj iz kx'kkyk ea cukus dh fof/k dk uke kŕdr fp= cukb; s A
- izu 3& og dks l h xŕ gŕ tks Toyu'khy gS\ , oa ftl ds rhu l eLFkkfud gks rsgS\ muds l eLFkkfudks ds vkjs[k [kŕpdj Li"V dhft, A
- izu 4& , d xŕ tksok; ŕ. My ea yxHkx 78% i kbZ tkrh gŕ dks iz kx'kkyk ea cukus dh fof/k dk o.kŕ fuEu fcŕnŕ/ka ea dhft, &

1/4 1/2 uke , oa v.kq l ŕ]	1/2 1/2 jkl k; fud l ehdj.k
1/3 1/2 uke kŕdr js[kŕfp=	1/4 1/2 nks iæĸ'k mi ; kx

- izu 5& vk; ju i klr djus dh okR; kkkVVh dk ukekfidr fp= [khp dj ml ea gkus okyh jkl k; fud fØ; kvka dks fyf[k; sA
- izu 6& ck; ks x\$ fuekzk ds xq;n l a æ dk ukekfidr js[kkfp= cukb; sA
- izu 7& izk'k dh oØh; ekxZeapykusdsfy; sfdl fl)kar dk mi ; ksx djrsga\ bl fl)kar ij vk/kkfjr ; qDr dk LoPN ukekfidr fp= cukrsgg smI dh l j puk , oa dkbZrhu iæ[k mi ; ksx nhft ; sA
- izu 8& fp= }kjk Li"V dhft , fd izk'k l a y\$sk.k ea vkDI htu x\$ fudyrh g\$ \

&&00&&

fo"K; %& foKku

d{kk nl oha

bdkbz & 01

vfr y?kpmÙkj; i ž u

- 1- LkkE, kOkLFkk fdLks dgRks gš
- 2- LkkEkkU, kRk% RkkIk Ck<kUks Ikj vfHkfØ, kk dh nj D, kka Ck< TkkRkh gš
- 3- LkkEkkU, k vfHkfØ, kk vka Eka RkkIk Ck<kUks Ikj vfHkfØ, kk dh nj Ikj D, kk IkEkkOk IkMškk\
- 4- UKEkd dk Tkyk Eka ?kYkUkk HkkERkd Ikfj OkRkØk gš, kk jkLkk, kfUkd Ikfj OkRkØk\
- 5- jkLkk, kfUkd vfHkfØ, kk Eka LkEk, k ds LkkFk vfHkdKjd dh LkkæRkk Eka D, kk Ikfj OkRkØk gkškk gš
- 6- vfHkfØ, kk dh nj , Oka vfHkdKjdka dk Lkkæ. k Eka D, kk Lkækak gš
- 7- vfHkdKjdka dk Lkkæ. k ?kVUks Ikj jLkk, kfUkd vfHkfØ, kk Ikj D, kk vLkj IkMškk\
- 8- Bkš. k vfHkdKjd ds Ik" B {kšQYk dk vfHkfØ, kk dh nj Lks D, kk Lkækak gš
- 9- D, kk mRikjd dh mikfLFkfrk vfHkfØ, kk dh nj dks Ikfj OkfRkØk djRkh gš
- 10- $C + O_2 \rightarrow CO_2 + 94.3 \text{ Kcal}$ fdLk Ikækj dh jLkk, kfUkd vfHkfØ, kk gš
- 11- mnkLkUk fokY, kUk ds fyk, pH dk Ekkuk fykf[k, \
- 12- Tkyk dh fokf' k"V m" Ekk dk Ekkuk fykf[k, \
- 13- Tkyk ds fgEkkad , Oka DOKFkUkkad dk Ekkuk fykf[k, \
- 14- Tkyk Eka gkbMRS"Uk vksj vkDkLkT"Uk dk vk, kRkUkkREkd vUkkkRk fykf[k, \
- 15- /kkOkUk LkkØ/k dk jkLkk, kfUkd Lkwk fykf[k, \
- 16- CkRkYkYjka Eka Ekinq Tkyk dk Ikzkkškk D, kka djRks gš

y?kpmÙkj; i ž u

- 1- , d LkkEkkU, k vfHkfØ, kk $A + B \rightarrow C + D$ gš vfHkfØ, kk nj ds fyk, Lkwk fykf[k, \
- 2- LkkE, k fLFkjkað K dk Ekkuk fdUk&fdUk dkjdka Ikj fuKkij djRkk gš\

- 3- fLk) dhfTk, fd $PCl_5 \rightleftharpoons PCl_3 + Cl_2$ mRØEk.kh₃k vfHkfØ₃kk gS
- 4- vEYk , Oka {kkj dh lks/RUk vOk/kkj .kk fYkf [k, \
- 5- $[OH^-] = 10^{-3}$ OkkYks {kkjh₃k fokYk₃kuk dk pH Ekkuk fYkf [k, \
- 6- D₃kk gkRkk gS TkCk TKYk dh fØ₃kk fUKEUK Eka Lks dj₃kh TkkRkh gS
 - 1- dSYLk₃kEk dkCkkbM Lks
 - 2- XkEkZ dkCkØk Lks
 - 3- Ykkkj Lks
 - 4- dSYLk₃kEk vkØLkkbM LkA
- 7- fUKEUK ,kSxkdka ds jLkk₃kFUKd UkkEk , Oka Lkwk fYkf [k, &
 - 1- /kkOkuk LkkbMk
 - 2- UkkEd
 - 3- fokjākd Pkwkz
 - 3- CkEdk LkkbMk A
- 8- LkkSM₃kEk CkkbØkCkkØk/ dks XkEkZ djUks lkj dkØk&dkØk Lks ,kSxkd lkkIRk gkRks gS
- 9- D₃kk gkRkk gS TkCk fokjākd Pkwkz dks Okk₃kq Eka [kYk NkM nBks gS
- 10- fTKILkEk Lks IYkkLVj vkØD lksjLk dLks lkkIRk fd₃kkTkkRkk gS
- 11- LkhEkØV ds lkkjāhkdk TEkkOk dks jkdUks ds fYk, D₃kk fEYkk₃kk TkkRkk gS
- 12- QQkYkknkj bLlkkRk fdLks dgRks gS
- 13- RkkLkLkg dkPk dk jkLkk₃kFUKd UkkEk fYkf [k, \
- 14- Ykkgs Lks bLlkkRk CkUkkUs ds fYk, dkCkØk fdLk : lk Eka fEYkkRks gS
- 15- 'kqd gkbMRātkuk DYkkjkbM XkLks UkhYks fYkVEkLk dks YkkYk Ukgha djRkh TkCkfd gkbMRØYkkj d vEYk UkhYks fYkVEkLk dks YkkYk dj nBkh gS dkj .k fYkf [k,

nh?kz mÙkj; i z u

- 1- vk₃kFUKd LkkE₃kOkLFkk Lks D₃kk LkEkØkRks gS vk₃kFUKd LkkE₃k lkj fok | Øk vIk?kV₃-k dh lkkñfRk dk D₃kk lkkkkOk lkmØkk \
- 2- LkkSM₃kEk DYkkjkbM ds mnkgj .k }kj k fLk) dhfTk, fd vk₃kFUKd vfHkfØ₃kk, a Hkh mRØEk.kh₃k RkFkk XkFRkd gkRks gS \
- 3- m"EkK lkfjØkRkØk ds vk/kkj lkj jkLkk₃kFUKd fØ₃kkvka dk Økxkhñdj .k dhfTk, \
- 4- pH LdYk ds vk/kkj lkj fokYk₃kuk dks ØkxkhñRk djRks gq , d&, d mnkgj .k nhfTk, \
- 5- m"EkK{kØkh , Oka m"EkK' kØkh vfHkfØ₃kkvka Eka vBkj fYk [kA



bulk nskkka vfhkfØ, kvvka dks lkgPkkuk dj bukEka 3 vBkj fykf[k, \

bdkbz & 02

vfr y?kqmÜkj; i zu

- 1- s CYkkd RkRokka ds UkkEk fykf[k, \
- 2- Ekñk /kkRkq/ka ds vBkEk d{k Eka fdRkUks bYkDVñk gkBks gS
- 3- OkR, kkhkêh Eka Yksgk fuEkz k gBkq Pkqk D, kka fEKYkk, kk TkRkk gS
- 4- 22 dS/ LkkBks dk D, kk RkRk, kz gS
- 5- Lkqkj .k lkj pH dk D, kk Ikñk IkMRkk gS
- 6- mLk fEkJ/kkRkq dks D, kk dgrks gS fTkLdk , d vOk, kOk lkkjk gkBkk gS
- 7- fok | Bk Pkqckdh, k IkFkDdj .k fokf/k dk lk, kkkk fdLk lkdkj ds v, kLdka dks Lkfaerk djUks gBkq fd, kk TkRkk gS
- 8- EkXuSY, kEk ds Ekq, k vOk, kOk Rfkk mUkdh IkFR' kRk Ek«kk Eka OkRkkb, ks
- 9- PkEdnkj /kkRkq/ka ds UkkEk fykf[k, \
- 10- dEl, kwj fPkLk Eka fdLk mlk/kkRkq dk lk, kkkk gkBkk gS
- 11- UkkbVñkUk dk TkOk/kkfj, kka ds fyk, D, kk EkRok gS
- 12- LkkOkz/kd fok | Bk /kuh ds nks RkRokka ds UkkEk fykf[k, \

y?kqmÜkj; i zu

- 1- /kkRkqj v/kkRkq , Oka mlk/kkRkq dks OkkhñRk dj&
1- LkkM, kEk 2- fLkykdñk 3- dkckzk 4- EkXUkf' k, kEk A
- 2- IkRKYk (Bross) D, kk gS
- 3- /kkRkq a fok | Bk/kukh IkñfRk dh gkBkh gS D, kka
- 4- LkckLks vf/kd fØ, kk' khYk , Oka LkckLks dEk fØ, kk 'khYk /kkRkq ds UkkEk fykf[k, \

- 5- fVUK (S_n) ds v₃kLd dk UkkEk , Oka Lkwk fYkf [k, \
- 6- Ckan [kk | lknkFkkz ds fMCCka Eka dkkLk Lkh XkLk Hkj h TkkRkh gS vksj D₃ka \
- 7- jkLkk₃ fUkd Lkwk fYkf [k, \
 - 1- dksj .MEk 2- MksYkkEkkbV 3- IYkkLVj vkwD IksjLk 4- CkkDLkkbVA
- 8- vkwDLkkbM vksj dkCkkBks/ v₃kLdka ds vkwDLkhdj .k gBkq lk₃kDRk fokf/k fYkf [k, \
- 9- lk₃kkk' kkYkk Eka UkkbVks₃ fUk XkLk CkUkkRks LkEk₃ k qYkkLd dks /kEkh XkFRk Lks XkEkZ fd₃kk TkkRkh gS D₃ka
- 10- dkMj RkkCkk ds Rkhuk fEkJ /kkRkq dk UkkEk , Oka mlk₃kkk fYkf [k, \
- 11- /kkRkq₁EkZ Eka dkd dh mlk₃kkXkRkk fYkf [k, \
- 12- vIk: lkrkk lknf' kzk djUks OkYks Rkhuk v/kkRkq/ka ds UkkEk fYkf [ka
- 13- DYkksj huk] CkEkhuk] vk₃kkSMUk vkOkRkZ Lkkj .kh ds fdLk OkXkZ Eka j [ks Xk₃ks gA

nh?kz mUkj h; i z u

- 1- ÖkkXk IYkkOkUk fokf/k Eka fUkfgRk fLk) kzk fYkf [k, \
- 2- fdLkh Rkhuk fEkJ /kkRkq ds UkkEk Ok Lk₃kVUk fYkf [k, \
- 3- lk₃kkYkUk dh jkLkk₃ fUkd fØ₃kk fokf/k fYkf [k, ₃kg fdUk v₃kLdka ds Lkkae.k Eka lk₃kDRk gkRkk gS
- 4- RkkCka ds 'kks₃kUk dh fok | Bk&vIk?kVUkh fokf/k dk LkFPk₃ Ok.kzk dhfTk, \
- 5- TkYk dk fok | Bk vIk?kVUk fdLk lk₃dkj gkRkk gS bLk fØ₃kk dk LkEkhdj .k Hkh fYkf [k, \
- 6- fUkEuk fØ₃kkvka ds LkRkqYkRk LkEkhdj .k nhfTk, &
 - 1- vk₃kjUk gkbM₃DLkkbM UkEkh dh mlk₃LFkFRk Eka vkwDLk₃TKUk Lks fØ₃kk djRkk gA
 - 2 CO + FeO --->
 - 3 FeO + O₂ ----> Fe₂O₃
 - 4 FeO + SiO₂ ----> FeSiO₃

- 7- Ikzkkk'kkYkk Eka gkbMRSJKUK CKUKKUKS dh fokf/k dk fUKEu fCkany/ka ds vk/kkj Ikj Ok.kk dhfTk, & 1- fPk«k 2- LkEhdj.k 3- 'kkskuk fokf/k
 - 8- UkkbVRSJKUK dh fUKEUK Eka Lks jkLkk,kfUkd fØ,kk FYkf[k, & 1- vkDLkhtKUK 2- dkCkK 3- gkbMRSJKUK 4- dSYLk,kek dkCkKbM A
 - 10- vkDLkhtKUK ds IjEkkf.Okd Xkqk FYkf[k, \
- v/; k; &05

vfr y?kqñUkj; i zu

- 1- ,Ydkgkñk dk LkkEKKU,k Lkwk FYkf[k, \
- 2- fXYkLkjñk dk jkLkk,kfUkd Lkwk FYkf[k, \
- 3- Ekf«kñk ds nks HkksRkd Xkqk CkRkKb,ks
- 4- dæh,k Rk«kdk Rk«k dks IkHkkfokRk djUks OkkYks , Ydkgkñk dk UkkEk , Oka Lkwk FYkf[k, \
- 5- ,khLV Eka dkSk &dkSk Lks , ækkbELk Ikk,ks TkkRks gæ
- 6- Ikñkj , Ydkgkñk ds mlk,kk«k CkRkKb,ks
- 7- TkkbEkk , TkkbELk dk mlk,kk«k , fFYk , Ydkgkñk CKUKKUKS ds IkfØ,kk dk d«Yk LkEhdj.k nhfTk, \
- 8- IkñfRkd CgYkd ds nks mnkgj.k FYkf[k, \
- 9- Lk«kUK CgYkd fdLks dgRks gæ mnkgj.k FYk[kks \
- 10- XYk«'k,yk , LkhfVd vEYk dk Lkwk FYkf[k, \
- 11- , LkhfVd vEYk ds nks mlk,kk«k FYkf[k, \

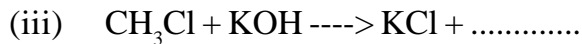
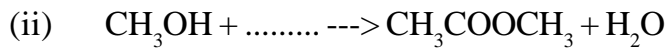
y?kqñUkj; i zu

- 1- EkfFYk , Ydkgkñk dk jLkk,kfUkd Lkwk IUPAC dk UkkEk , Oka , Ydkgkñk dk Ikdkj FYkf[k, \
- 2- fUKEUFYkf[kRk ,kk«kdk ds jkLkk,kfUkd Lkwk FYkf[k, \ 1- 'kDdj 2- , LkhfVd vEYk 3- PVC 4- VYkñk
- 3- Lk«k Lks , fFYk , Ydkgkñk fUkEkkz k dk jkLkk,kfUkd LkEhdj.k nhfTk, \
- 4- fCUKKYSks ds RkYk dk mlk,kk«k djRks gq LkCkK CKUKKUKS dh fokf/k dk Ok.kk dhfTk, \

6- PVC ÇukukUks dh fOkf/k] Xkqk , Oka mlk, kkkk fykf [k, \

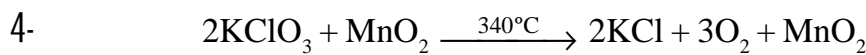
nh?kz mÜkj; i z u

1- LkEkhdj .k lkwk dhfTk, &



2- Lkkckqkhdj .k dh fOkf/k , Oka LkEkhdj .k nhfTk, \

3- vIkEkTkzd D, kk g\$ bLkdh fOk' k\$Rkk, a , Oka mnkgj .k nhfTk, \



bLk jkLkk, kfUkd vfhkfØ, kk ds vk/kkj lkj lkz kkkk' kkykk Eka ÇukUks Okykh Xk&k ds fOkf/k dk fPk«k Çukkrks gq Ok. kzk dhfTk, \

5- UKEkh, kDkRk OkRkkOkj .k Eka Ykks dh PkTka lkj dN fnUka lk' PkkRk , d lkjRk ÇukRkh g\$ bLkdk jkLkk, kfUkd Lkwk ds Lkkfk UkkEk fykf [k, \ bLks ÇukUks dh lkfØ, kk Hkh LkEkÖkkb, k\$

bdkbZ & 03

vfr y?kqÜkj; i z u

1- Ekgkj k"V^a , Oka jkTkLFkkUk Eka fLFkRk lkjEkk .kq 'kfDRk Lkq«k dæ dk UkkEk fykf [k, \

2- TkHkk' Ek b«Uk ds mnkgj .k fykf [k, \

3- Ukkfhkdh, k fj, kDVj ds b«Ukka ds UkkEk fykf [k, \

4- Ukkfhkdh, k fj, kDVj Eka dMfEk, kEk dk D, kk dk, kz g\$

5- Lkkyj Lkyk Eka fdLk RkRk dk mlk, kkkk gkRk g\$

y?kqÜkj; i z u

1- Lk\$ Tkyk m"Ekd Eka dkykh LkRkg ds LFkkUk lkj Rkkks ds Vî «k dk lkz kkkk fd, kk TkRkk

gS D₃kka \

- 2- Lkksj IkkkYk Lks LkKj ÅTkkz dks dSks LkKkfgRk djRks gS
- 3- L.P.G. fdLks dgrks gS bLkds vOk₃kOk vksj mlk₃kkk fykf[k, \
- 4- B.A.R.C. dk 'kCn fOkLRkkj dja lkj k ukkEk
- 5- ÅTkkz lkkfIRk gBkq XkSj lkj jkKkRk JKkka dk Pk₃kUk vOk' ₃kd gS D₃kka
- 6- Lkksj LkYk fLkfykdUk Ok TKEkUk₃kEk ds D₃kka CkUk, TkkRks gS
- 7- IkOkUk ÅTkkz dks UkOkhUkhñRk ÅTkkz D₃kka dgk TkkRk gS

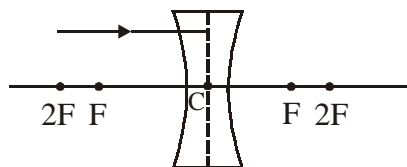
nh?kz mUkj; i zu

- 1- UkkfHkdh₃k fj₃kDVj ds lkkPk HkkXk gkRks gS Ikk₃kd HkkXk dk ukkEk fykf[kdj dk₃kz fykf[k, \
- 2- Lkksj RkkkUk₃kqDRk dk Ok.kk fUkEUk fCkq/ka ds vk/kkj lkj dj&
- 1- fPk« 2- kqDRk Eka m"Ek{k₃k jkcdUks ds mlk₃k 3- dkPk dh lkEh dk mlk₃kkk 4- CkDLk dks dkYks jkLk Lks D₃kka jkLk TkkRk gS
- 3- nks LkksYkj dDj Ekks, d dkPk Lks <dk gS nUkj k [kYk gS fdLkEka [kkUk TkYnh lkdxk vksj D₃kka \
- 4- D₃kk IkOkUk Lks fOk | Pk ÅTkkz lkkIRk dh Tkk LkdRk gS₃ kfn gk Rks dSks \ LkFPk« LkEkOkk₃ks

bdkbz & 04

vfr y?kqUkj; i zu

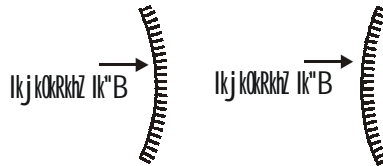
- 1- fUkEUk vkjs[k dks vlkUk mUkj lkqLRkd Eka [kPkDj YkLk ds lkzk'k fdj.k dk lkFk lkj k dhfTk, \



- 2- 5 LksEk- ÅPkkbz dh , d OkLRkq vOkRkYk nlk.kz Lks 20 LkEk- njh lkj fLFkRk gS A lkRkfcEk dh fLFkRk lkñRk Ok ÅPkkbz kRk dhfTk, A nlk.k dh QkdLk njh 10

LkEkh- gA

- 3- LVAV YkkbV vksj LkPkZ'YkkbV Eka Ikz,kpRk nIk.kz dk UkkEk FYk[kA
- 4- nIkz k CkukkUs ds FYk, dkPk Ikj fdLk RkRok dh IKRkZ YkXkkbz TkkRkh gS Ikj kOkRkhZ Ik"B vIkj kOkRkhZ Ik"B A



fn₃ ks Xk₃ ks fn₃ ks Xk₃ ks fPk«k Eka nIkz kka dks IkgPkuk dj UkkEk FYk[kA

- 5- , d YkLk dh QkdLk njih \$50 LkEkh- gA mLk YkLk dh {kEkRk vksj IkZ'fRk CkRkkb₃ ks
- 6- fdLkh YkLk Ikj vIkfRkRk Ikzk'k fdj .ka vIkOkRkZk ds Ik' PkkRk vksj vf/kd QYk TkkRkh gS YkLk dh IkZ'fRk FYk[k, \
- 7- IkwkZ Ikj kOkRkZd fIkZ'Ek ds nks mlk₃ kOkk FYk[k, \
- 8- Ikzkf' kRk RkURkq ds nks mlk₃ kOkk FYk[k, \
- 9- dkPk Eka Ikzk'k dh PkYk 2×10^8 EkVj @LkcdM gSRkks Okk₃ qEka Ikzk'k dh PkYk KkRk djA $\frac{1}{2}u = c/v^{1/2}$
- 10- EkkUKok Uksk Eka fLkfy; jh EkkLk Iks'k₃ kka dk dk₃ kz FYk[k, A
- 11- ₃kfn ghj k (diamond) dk vIkOkRkZkKad 5 gSRkks ghj s Eka Ikzk'k dh PkYk D₃kk gkOkh\
- 12- ₃kfn Okk₃ q ds LkklkSk dkPk dk vIkOkRkZkKad 9@6 gS Rkks dkPk ds LkklkSk Okk₃ q dk vIkOkRkZkKad KkRk dhfTk, \

nh?kz mUkj; i z u

- 1- XkksYkh₃ k nIkz k Lks LkOkk/kRk fUkEuk dks LIk"V dhfTk, & 1- nIkz k /kqk 2- QkdLk 3- QkdLk njih 4- Ekq₃ k v{k A
- 2- vIkOkRkZkKad vksj OkkRkd dks k Eka , d fUkf' PkRk LkOkk gkRk gS nkskka ds CkPk ds LkOkk dks O₃ kAd ds : Ik Eka LFkkfIKRk dhfTk, RkFk OkkRkd dks k dks IkEkfOkRk dj Uks OkkYks nks dkjd FYk[k, \
- 3- Ikzkf' kd RkRkq dk D₃kk vk'k₃ k gS bLkdh Lk₃ Pkuk dks LkEkOkkRks gq nSukd TkhOkk Eka bLkds nks mlk₃ kOkk FYk[k, \

- 4- , d vOkRkYk Yk&k dh QkdLk njih 25 Lk&kh- gSbLk Yk&k Lks 15 Lk&kh- njih j [kh OkLRkq ds IkfRkfCkEck dh fLFkFRk , Oka Ik&NfRk Kkrk dhfTk, \
- 5- , d Xkks'kh,k nIkZ k dh OkØRkk f«kT,kk 30 Lk&kh- gSnIkZ k dh QkdLk njih dh Xk.kUkk dhfTk, \
- 6- vOkRkYk nIkZ k }kjk nh Xkbz OkLRkq dh fLFkFRk Ok IkfRkfCkEck dh fLFkFRk ds vk/kkj Ikj IkfRkfCkEck Kkrk dj&

ØEkkad	OkLRkq dh fLFkFRk	IkfRkfCkEck dh fLFkFRk
1	vUKURk Ikj	QkdLk Ikj
2-	OkØRkk dæ Lks Ikjs	QkdLk Ok OkØRkk ds CkhPk
3-	OkØRkk dm Ikj	OkØRkk dæ Ikj
4-	QkdLk Ikj	vUKURk Ikj
5-	QkdLk Ok 'kh'kZ ds Ek/,k	nIkZ k ds IkhNs A

- 7- D,kk Qks/k&kfQd d&skjs Eka Yk&k dh QkdLk njih dEk T,kknk dh Tkk LkdRkh gS. D,kka \ d&skjs Lks CkUkk IkfRkfCkEck dh Ik&NfRk v&sj v&dkj CkRkkb,k&

v/; k; &09

vfr y?kqUkjh; i zu

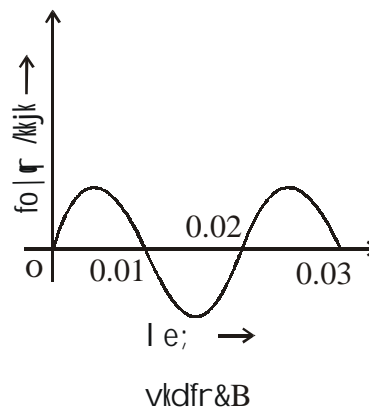
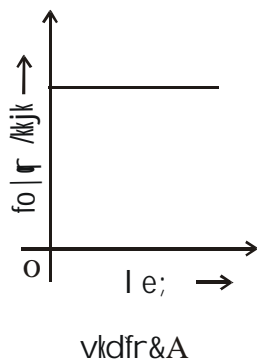
- 1- vkOks'k dk s.I. Ekk«kd fYkf [k, \
- 2- nks vkOks'kka ds Ek/,k njih Ck<kUks Ikj Ikfj .kkEkh RkhOk&Rkk Ikj D,kk Ik&kkOk IkM&kk \
- 3- , dkd vkOks'k D,kk gS
- 4- , d ,kUUV fOk | &k dk vk'k,k LIk"V dhfTk, \
- 5- ?kjkka Eka fOk | &k Ikfj IkFk dk IkfjEkkIk CkRkkb,k&
- 6- , d , EIk,h,kj /kkjk Lks D,kk LkEkØRks g&
- 7- fOk | &k [k&kkka Eka Ekk&s Rkkjkka dk mIk,k&kk fd,kk TkkRkk gS D,kka \

y?kqñÜkj h; i z u

- 1- fOk | Bk {k&k dh RkhOkRkK dks IkfjHkkf'kRk dj bLkdk Ekk«kd fYkf[k, \
- 2- fOk | Bk fOkHkOk D,kk gS bLkdk s.I. Ekk«kd fYkf[k, \
- 3- fOkHkOkkBkj , Oka /kkjk ds Ek, k XktQ [kñPk, \
- 4- fPk«k ds }kjk IkfRkj k&k ds Js kh ØEk Lk&kksT kUk dks Ikf' kRk dj&
- 5- IkfRkj k&k ds LkEkBkj ØEk Lk&kksT kUk dk j\$ kkfPk«k CkUkkb, ks

nh?kz mÜkj h; i z u

- 1- fOk | Bk Ikfj IkFk Eka Ikz kDPRk gk&ks OkYks fdUgha IkBk vOk, kOkka ds UkkEk , Oka IkBkhd fYk [k&
- 2- Ikz k&k' kkyk Eka v&Ek ds fUk, kEk dk LkR, kKkUk dk Ok. k&k fUkEkU fCk&g/ka ds vk/kkj Ikj dj& 1- Ikfj IkFk dk j\$ kkfPk«k 2- Ik&k. k Rkkykdk 3- IkEk[k LkOk/kkfUk, kka
- 3- fUkEkUk Eks nks Ikzdkj ds fOk | Bk /kkjk LkEk, k XktQ fn, ks Xk, ks g\$ mUga ns[kdj fUkEkUk Ikz Uka ds mRRkj nhfTk, \



- 1- buk nks&kka XktQ Eka dk&k&dk&k Lks Ikzdkj dh fOk | Bk /kkjk, j g\$
- 2- buk Ikzdkj dh fOk | Bk /kkjkvka dk , d L«kk&k fYkf[k, \
- 3- XktQ vkñfRk & Eka nh Xkbz fOk | Bk /kkjk dk EkkUk D,kk g\$
- 4- XktQ ds vk/kkj Ikj nks&kka fOk | Bk /kkjkvka Eka v&Bkj fYkf[k, \
- 4- v&Ek ds fUk, kEk ds LkR, kKkUk gBkqvEkhVj] OkksVVEkhVj] d&kh] Cks/jh Pkkykd Rkj dh vkOk' ,kdRk gk&kh g\$ bLkds Ikfj IkFk dk j\$ kkfPk«k CkUkkb, ks LkR, kKkUk gBkq Ik&k. k Rkkykdk CkUkdj nks LkOk/kkfUk, k; fYkf[k, \

- 5- fUKEUkFYkF [krk Lkŷkka ds fOk | Bk vIk?kV~k] dŷkkM RkFkk LkkM ds vk/kkj Ikj vBkj CkRkkb, k& YkdYkkk.kh Lkŷk] 'ktd Lkŷka
- 6- , d ?kj Eka IkfRkfnUk 40 OkkŷV ds 4 Vî ōkYkkbV] 100 OkkV ds 2 CkYck 6&6 ?k/s RkFkk 60 OkkŷV ds 4 Ikā[ks 8 ?k/s PkYkRks gŷA ŷfn IkfRk ŷkUkV fOk | Bk dh nj 2-00 : Ik, ks gS Rkks , d EkghUks Eka fd, ks TkkUks OkkYks fOk | Bk nkEk dh Xk.kukk dhfTk, \
- 7- nij n'khZ dk mlk, kkkk gEk nij dh ōLkRkq/ka dks nŷ[ukks Eka djRks gŷA bLkh vkOk/kUk {kEkRkk fdLk Ikākj KkRk djRks gŷA bLkds }kj k CkUks IkfRkfcck dh jPkUk dks jŷ[kkfPk«k ds }kj k LkEkŌkkb, kŷA
- 8- fOk | Bk Ikz kkkk ds LkEk, k gEka dŷN fOk' kŷk LkkOk/kkFuk, k; j [kukh Pkfg, vU, kFkk gEkks ŷYk, [krkjUkkd gks LkdRkk gŷA fOk | Bk Ikz kkkk Eka fLFkFRk Eka vFRkHkkj .k ōk Yk?kq IkFkUk dks LkEkŌkkb, kŷA
- 9- 2Ω] 3Ω] RkFkk 6Ω ds Rkhuk IkfRkj kŷkka dk LkEk, kŷkUk fUKEUk 'krkkā Ikj dhfTk, \
1- U, kkkRkEk IkfRkj kŷk IkIRk gka 2- vf/kdRkEk IkfRkj kŷk IkIRk gka

v/; k; &10

vfr y?kqŷkjh; i ŷ u

- 1- fOk | Bk Ikā.k Eka fdLk Rkkj dk mlk, kkkk gkRkk gŷA
- 2- fOk | Bk 'kfDRk dk Ekk«kd ŷYkF[k, \
- 3- fn"V /kkj k dh vkOkfRRk fdRkUk gkRkh gŷA
- 4- ?kjŷkw Ikfj IkFk Eka ŷ, kŷk fdLk ŌEk Eka YkXks gkRks gŷA
- 5- 'ktd Lkŷk Eka , UkkM fdLkdk CkUk gkRkk gŷA
- 6- fOk | Bk /kkj k ds PkŷCkdh, k IkHkkŌk dh [kkŷk fdLUks dh \

y?kqŷkjh; i ŷ u

- 1- fOk | Bk /kkj k dk m"Ek, k IkHkkŌk ŷYkF[k, \
- 2- IkR, kkkRkhhZ /kkj k , ōka fn"V /kkj k Eks Rkhuk vBkj CkRkkb, kŷA
- 3- fOk | Bk /kkj k ds jLkk, kFkd IkHkkŌk dh mlk, kŷkRkk ŷYkF[k, \
- 4- M.R.I. RkdUkhd dk fPkfdRLkk {kŷk Eka D, k mlk, kkkk gŷA
- 5- ?kjŷkw fOk | Bk Ikfj IkFkka Eka fOk | Bk mlkdj .k LkEkŷkj ŌEk Eka TkkM/s TkkRks gŷA dkj .k

nhfTk, \

nh?kz mÜkj; i ʒ u

- 1- 'ktd Lkyk dk UkkEkkfdRk fPk«k CkUkkb,ks
- 2- LkhLkk LkØkkykd Lkyk dk dskYk UkkEkkfdRk fPk«k CkUkkb,ks
- 3- fok | Øk mlkdj .kka dk Ikzkkk djRks LkEk,k fdUk&fdUk LkkOk/kkfUk,kka dk /,kkUk j [kUkk Pkkfg, \
- 4- , &ks fok | Øk mlkdj .k fTkUkLks m"EkK lktRk dh TkkRkh g& mUkEka dN /kkRkq/ka ds LFkkUk Ikj fEkJ/kkRkq dk Ikzkkk fd,kk TkkRkk gS D,ka

v/; k; &11

vfr y?kqÜkj; i ʒ u

- 1- PkqCkdh,k LkØZ gEkskk mRRkj nf{k.k fn'kk Eka gh D,ka BgjRkh g&
- 2- , dka d /kØk Lks D,kk LkEkÖRks g&
- 3- mnkLkhUk fCkanq dh lkgPkkUk d&ks dj LkdRks g&
- 4- v.kq PkqCkd Lks D,kk vk'k,k g&
- 5- PkqCkdh,k lknkFkkz ds RkhUk mnkgj .k nhfTk, \

y?kqÜkj; i ʒ u

- 1- , dka d /kØk ds fYk, dYkkEck dk Lkwk fYkf [k, \
- 2- PkqCkdh,k j {k.k gBkq UkjEk Ykks ds dk gh mlk,kkk D,ka djRks g&
- 3- mnkLkhUk fCkanq Ikj lkfj .kEkkh {kssk 'kØ,k gkRkk gS D,ka
- 4- lFØkh ds ?kqkØk djUks Lks mLkds PkqCkdh,k vØk,kØka Ikj D,kk lkhkkØk lkmØkk\
- 5- PkqCkdh,k j {k.k ds D,kk mlk,kkk g&

nh?kz mÜkj; i ʒ u

- 1- fLk) dhfTk, & $V = H \tan\theta$
- 2- PkqCkdh,k RkØkUk Lks D,kk vk'k,k gS bLkds D,kk nØlkfj .kEk gks LkdRks g&
- 3- Hk&PkqCkd ds Pkkj Xkqkka dh O,kk [,kk dhfTk, \

- 4- Pkqckd ds vkf. Qkd fLk) kRk dh Rkhuk Ekq[.k vfhkXkghRkk fykf[k, \
- 5- Pkqckd dk mRRkjh /kqk HkkSkksYkd nf{k.k dh vkj gkSkS lkj Pkqckdh.k CkYk j[.kk, j fdLk lkdkj [khpkh Tkk LkdRkh gS bLk gBkq D,kk LkkOk/kkfuk, kkj j [kh Tkkukh Pkkfg, \

bdkbz & 05&06

vfr y?kqñÜkjh; i zu

- 1- Tkukuk XkñFk Lks L=kfORk gkSkS OkYks nks gkEkKk ds UkkEk fykf[k, \
- 2- lkkSkka Eka lkñTkuk fØ,kk fdLk gkEkKk ds dkj.k gkRkh gS
- 3- A.C.T.H. D,kk gS ,kg fdLk XkñFk Lks L=kfORk gkRkk gS
- 4- Rkñkdk Eka lkñkfgRk gkSkS OkYks gkEkKk dk D,kk UkkEk gS
- 5- Lkj hCkYkEk ds nks dk, kz fykf[k, \
- 6- vYkñkd Tkukuk dh Tkhokk.kq fUkEkz k fOF/k fdUk TkhOkka Eka gkRkh gS
- 7- OkkLkDvKk D,kk gS
- 8- Eknk Tkukuk Rkñk dh nks XkñFk, kka ds UkkEk fykf[k, \
- 9- ,kqEdka Eka fdLk lkdkj dk dks' kdk fOHHkTkuk gkRkk gS
- 10- fykñk fuk/kkj .k XkqkLkuk dk UkkEk fykf[k, \
- 11- fOkk, kkñ h (Alleles) D,kk gS
- 12- , d Lkñdj ØkLk Eka Tkhuks/kbIk vkj Qhukks/kbIk vUkñkRk CkRkkb, ks
- 13- bfM, kkkkkEk D,kk gS
- 14- EkkukOk Eka fdRkUks fykñk XkqkLkuk gkSkS gS
- 15- vIkukz lkhkkfORk D,kk gS
- 16- Okk, kq ds vOk, kOkka ds UkkEk fykf[k, \
- 17- Ekukñ, k ds fyk, fdRkUks MSLkCkYk Lks vf/kd /Okfuk gkfkdkjd gS
- 18- C.F.C. dk lkñk UkkEk CkRkkb, ks
- 19- vEYkh, k Ok"kkz ds fyk, fTKEEkñkj Xkñkka ds UkkEk fykf[k, \

- 20- B&S lkn's k Eka Xkbuk gmlLk lkhkkok dk mlk, kkkk dlsks dj LkdRks gS
- 21- vkhDLkhtkuk ghEkkykksckuk Lks TkM/dj vkhDLk&ghEkkykksckuk UkkEd ,kksXkd CkURkk gs bLk fØ,kk dks LkEkhdj .k }kjk n'kkb,ks
- 22- ,kfn Ekkukok Ok" k.k Lks V&V&VhjKuk UkkEd gkEkBok dk vf/kd L<<kkok.k gks Rkks D,kk gkXkk\

y?kqñÜkj h; i z u

- 1- lkh, kjk XkFk Lks L=kfokRk gkks OkYks fdUgha Rkhuk gkEkLk ds UkkEk FYkf [k, \
- 2- ,LVkFkuk dk D,kk dk, kz gS
- 3- U, kj kkk dk LOKPN UkkEkfdrk fPk«k CkUkkb,ks
- 4- LkkbVksdkbfuk gkEkLk ds Rkhuk dk, kz FYkf [k, \
- 5- Eks#jTTkw ds Pkkj dk, kz FYkf [k, \
- 6- fdUgha Rkhuk vBk%«kkOkh XkFk, kka ds UkkEk FYkf [k, \
- 7- lkhk: nhOkuk (Regeration) D,kk gS , d mnkgj .k ndj FYkf [k, \
- 8- lkjXk.k D,kk gS ,kg fdRkks lkdkj dk gkRkk gS
- 9- , d lkt: flkd v.Mlk dk UkkEkfdrk fPk«k CkUkkb,ks
- 10- jTks'kEkZ vFkokk __RkqJkok D,kk gS
- 11- EkVj Eka , d Lkdj ØLk dk js[kh, k fPk«k CkUkkb,ks
- 12- dñ XkqkLkuk L o v vdkj ds fn[kkbZ lkmRks gS mukdk UkkEk FYk[kdj fPk«k CkUkkb,ks
- 13- lksdfj ,kfvd , Oka ,kudfj ,kfvd XkqkLkuk Eka Rkhuk vBkj FYkf [k, \
- 14- D.N.A. ds vOk, kokka ds UkkEk FYk [k
- 15- Tkhokuk dh mRikfuk Eka vkhDLkhtkuk ØkRk dk Ok. kzk dj
- 16- fdLk Ekkukok ,kjkYk TksMk Lks YkMdk ,kk YkMdh lksn gkRkk , d LkhhkOkuk Ekk«k gS. LIK"V dhfTk, \
- 17- Tkhok' Ek bZkuk ds nguk Lks dksk&dsk Lkh XkS,ka CkURkh gS
- 18- 'kjk Lks Ekkukok vdkka Rk«kka lkj D,kk lkhkkok gkRkk gS

- 19- vTkk fUkEukh~Rk jLkk_kUkka ds mnkgj .k nhfTk, \
- 20- Ekñk Lkj {k.k ds RkhuK mlkk_k fykf [k, \
- 21- Tkhokk' Ek bAkUk dks TkykkUks Lks dkCkZk MkbZ vkDLkkbM ds vYkkokk fukdYkUks OkkYkh nk Xk&kka ds UkkEk fykf [k, Tks vEYk Ok"kkZ ds fyk, mRRkj nk_kh gS

nh?kz mUkjh; i t u

- 1- EkkUok EkfLRk"d dk UkkEkbfDRk fPk«k CkUkkb_kS
- 2- IkFRkOkRkhZ fØ_kk dks fUk_kk«kRk djUks OkkYks vAk dk UkkEkbfDRk fPk«k CkUkkb_kS
- 3- fUkEuk dk_kkZ Lks Lk«k/kRk gkEkKk dk ds UkkEk fykf [k, &
 - 1- : f/kj Eka Tkyk dh Ekk«kk dk fUk_kk«k.k
 - 2- 'kØk.kp/ka dk fUkEkKz.k mRRkSTkRk djUks OkkYks gkEkKk
 - 3- XYk«k«k dk mlkki Pk_k djUks OkkYk gkEkKk
 - 4- nØ/k (Milk) dk fUkEkKz.k , Oka JOk.k A
 - 5- YkXkd vAkka dk fOkdkLk djUks OkkYk gkEkKk
- 4- IkSkkka Eka fUk"kbUk fØ_kk ds Pkj .kka dk Ok.kZk dhfTk, \
- 5- EkUkq_k Eka Ukj TkUkUk Rk«k dkUkkEkbfDRk fPk«k CkUkkb_kS
- 6- vFuk"ksd TkUkUk (Pantherogensis) D_kk gS mnkgj .k LkfgRk fykf [k, \
- 7- Tkhokk Eka mRikfUk dk fEkyj&_kjs ds Ik_zkkk dk Lkfpk«k Ok.kZk dhfTk, \
- 8- dkCkZkd fOkdkLk dh vkskFjUk IkfjdYIkUk dk Ok.kZk dhfTk, \
- 9- IkR~fRkd Lk_kk/kUkka dk Lkj {k.k D_kk gS vkSj D_kka vkOk' _kd gS
- 10- Ekñk Lkj {k.k ds lkkPk mlkk_k LkØkkb_kS
- 11- ÅTkkz Lk«V fUkOkkj .k ds mlkk_k fykf [k, \
- 12- EkUkq_k Ik_kkZk.j .k dks nØkkkfkORk dj jgg gS LIk"V dhfTk, \

OKLRkqUK" B Ikz Uk &

d{kk nl oha
bdkbZ & 01

, d 'kCn Eka mRRkj nhfTk, &

- 1- [kkUks dk LkkB/k dk Lkwk & NaHCO₃
- 2- ØksEk, kEk vkD LkkbM dkPp dks dksk Lkk jxk nBkk gS 1/2g 1/2
- 3- fik?KYks dkPp dks /kh&/khjs B/k djUkk &&&&&1Rkk1kkUkq khRkUk1/2
- 4- OkR, kkhkEh Eka Ekq, kRk% fdLk v, kLd dk mlk, kkkk djRks gS 1/2g EkS/kbV1/2
- 5- IkekYkRkEk {kkj dk pH gkRkk gS 1/4 1/2
- 6- fUKLRkkIKUK fØ, kk Eka dksk Lkh Xksk Ckkgj fUkdYkRkh gS 1/2CO₂1/2
- 7- CksLKEkSV dk vkfOk" dkjd dksk gS 1/4Tkkk.kQ, fLIKMUk1/2

fjDRk LFkkUkka dh IkfRkZ dhfTk, &

- 1- vk?kkrk Ok/kukhZ kRkk, Oka RkU, kRkk &&&&dk Xkqk gS 1/4kkRk1/2
- 2- 'kq) TkYk dk pH &&&gkRkk gS 1/7 1/2
- 3- 'kq) LkkBkk &&&&&djsv/ dk gkRkk gS 1/24 1/2
- 4- LkhEkA/ dks TkYnh Lkq'kkUks ds fyk, &&&&&fEkYkRks gS 1/4tII e1/2
- 5- TkYk dh fOkf'k"V m"EkK dk EkkUk &&&&&gkRkk gS 1/41 1/2
- 6- /kkOkUk LkkB/k Eka TkYk ds &&&&&&v. kq LkEkkgRk gkRks gS 1/410 1/2
- 7- Ukhkkw jLk dh IkfRk &&&&&gkRkh gS 1/4vEYkh, k1/2

Lkgh LkSkak TkSfM, kS&

- | | | |
|----|-----------------|--------------------------------|
| 1- | V | Ck |
| | A Tkxk | fDYkcdj |
| | B LkhEkA/ | PbS |
| | C Lkckqk IkKUKh | TkYk, kSfTRk vk, kju vkD LkkbM |

- D XkS'kblkk {kkj h, k fOkYk, kUk
- 2- A fOkj Tkad Pkwkz $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$
- B fTKILkEk CaCO_3
- C dhYkS/ CaOCl_2
- D Pkwkk IKRFkj dkp ds VpMf

Lkgh fOkdYIk PkqUk, kS

1- Lkq'kk Pkwkk dk jLkk, kFUkd Lkwk gS

- (a) CaCO_3 (b) CaO (c) NaOH (d) Ca(OH)_2
(mRrj & CaO)

2- LkYOkS vEkksUk, kEk fOkf/k Lks CkUk, kk TkRkk gS

- (a) LkSM, kEk gkbMRDLkbbM (b) Ukek d
(c) LkSM, kEk dkCkkkS/ (d) LkSM, kEk Ckbbd/CkCkS/
1/4mRrj & l kSM; e dkckkS/1/2

3- dkskYV vkDLkbbM Lks dkPk dks jk IkIRk gkRkk gS

- (a) gjk (b) UkhYkk (c) YkkYk (d) IkhYkk
1/4mRrj & uhyk1/2

4- TKYk dk fgEkkd gkRkk gS

- (a) 0°C (b) 110°C (c) 100°C (d) 98°C
1/4mRrj & 0°C 1/2

5- CkLV/M Ykkjh ds vUkq, kkj lks/Rk nkRkk lknkFkZ dgYkRks gS

- (a) vEYk (b) {kkj (c) RkRk (d) fEkJ.k
1/4mRrj & vEy1/2

Lkgh XkYkRk CkRkbb, kS

1- vfHkFØ, kk dh nj RkkIk Ck<kUks Ikj Ck<Rkh gS mRRkj Lkgh

2- [kkUks ds Lkbb/k dk Lkwk Na_2CO_3 gkRkk gS mRRkj XkYkRk

- 3- Tkyk dk DOKFukkad 100 Lk/hxk/ gkRk gA mUkj & Lkgh
- 4- EkUkj,k dk jDRk {kkjh,k lkaNFRk dk gkRk g& mRRkj Lkgh
- 5- OkkVj Xksk Eka CO , Oka N₂ gkRk gA mRRkj XkYkRk
- 6- vUkRØEk.kh,k fØ,kk vRkRk% LkEkIRk gk TkkRk gA mUkj Lkgh
- 7- fokjākd Pkwkz Lks UkOkTkkRk DYkkj huk Xksk EkRkRk gkRk gA mRRkj LkghA

bdkbz & 02

, d 'kCn Eka mRRkj nhfTk, &

- 1- dN /kkRkq/ka ds Ik"B lKj fdLkdh lKjRk CkUk TkkUks ds dkj .k PEkd Ukghafn [kkbz nRk & ¼vkDLkbbM dh lKjRk½
- 2- v₃Ldka Lks LOKRkæk Ok 'kq) vOkLFkk Eka lKIRk dh TkkUks OkkYkh lKfd₃kkvka dks D₃kk dgRks g& ¼kkRkq fuk" d"Kz k½
- 3- ÖkkXk mRlYkkokuk fokf/k fdLk lKdkj ds v₃Ldka ds LkUæ.k ds fYk, lKzkkXk fd₃ks TkkRks g& ¼LYQkbM½
- 4- Ykgs Eka Tkak YXkUkk fdLkd mngj .k g& ¼kkRkq LkqkKj .k½
- 5- gkbMRSTkuk Ok vkDLkhtkuk fØ,kk dj i kUkh dk fUkEkz k djRks gA bLk fØ,kk Eka RkhOkz fokLQk/ gkRk gS dkRk Lk fØ,kk gA ¼m"Ek{kKkh vfHkfØ₃kk½
- 6- dkbz Xksk gS Tkks Uk Rkks LOk₃ka TkykRk gS Uk TkykUks Eka Lkg₃kd gS UkEk CkRkbb₃k&(N₂)
- 7- dkCkZk ds LkFk TkM dj dN lKjEkk.kq vTkkUks fokf' k"V Xkqkka ds LkFk , Oka vYkXk lkgPkkuk CkUkkRks gA , Lks CkUks LkEkng dks D₃kk dgRks g& & ¼Ø₃kkREkd LkEkng½ A
- 8- vPkj Eka fLkj ds ds : lK Eka dkRk Lk vEYk mlk₃kkk fd₃kk TkkRk gA ¼ fLkVd vEYk½A

fjDRk LFkkukka dh lKIRk dhfTk, &

- 1- TEks gg vEYk dks &&&&&vEYk dgRks gA ¼YkS' k; y , LkfvD vEYk½
- 2- lKkKj , YdkgkKk Eka lKs/RyKj , YdkgYk vkj &&&dk fEkJ .k gkRk gA ¼CkSTkuk½
- 3- ¶YkKsj Uk ds Ckkn LkCkLks vf/kd __.k fok | RkRk &&&&&&gA ¼vkDLkhtkuk½
- 4- lKzkkXk' kYk Eka vkDLkhtkuk gRkq EkXUkTk Mkbz/kDLkbbM vkj &&&&ds fEkJ .k dks XkEkz fd₃kk TkkRk gA ¼kks/S' k₃kek DYkkj½

- 5- $0k, k\bar{g}k\bar{a} / Yk$ Eka UkkbV \bar{r} STkUK &&&IkFRk' kRk gkRkh gA $1/78\frac{1}{2}$
- 6- NaCl, d &&&&&, kksXkd gA $1/40k$ | Bk LkakkSTkh $\frac{1}{2}$
- 7- n \bar{r} kZ FTkYks ds nYYkhj kTkj k {k \bar{s} k ds Ykk \bar{g} v, kLd dk mlk, k \bar{r} k&&&&Lk \bar{a} k \bar{a} k Eka fd, k \bar{r} TkRkRk gS & $1/4HkYkkbz$ bLlkkRk Lk \bar{a} k \bar{a} k $\frac{1}{2}$

mfPRk Lk \bar{a} k Tk \bar{s} M, ks &

- | | | |
|------|--|--------------------------------|
| [A]. | v | Ck |
| | dkCk \bar{r} k \bar{r} / v, kLd | \bar{O} k, k \bar{s} kkbV |
| | vkDLkkbM v, kLd | Mk \bar{s} kk \bar{r} kkbV |
| | LkYQkbM v, kLd | CkDLkkbV |
| | g \bar{s} kkbM v, kLd | Xk \bar{s} k \bar{r} kk |
| [B] | {kkj /kkRkq | d&CYkkd ds RkRk |
| | {kkj h, k Ek \bar{r} k /kkRkq | OkXkZ 1 ds RkRk |
| | Lk \bar{O} Ek. k /kkRkq | f&CYkkd ds RkRk |
| | n \bar{r} Yk \bar{r} k Ek \bar{r} k /kkRkq | OkXkZ 2 ds RkRk |

Ckg \bar{r} OkdYIk \bar{h} , k Ik' Uk &

- 1- dk \bar{r} kj fUk"d"kZ k g \bar{r} kq lkn \bar{O} Ek g&
- 1- LkkU \bar{a} .k] HkT \bar{r} k \bar{r}] IkXkYkUk] Ck \bar{r} .k \bar{r} Ekjhdj.k
 - 2- HkT \bar{r} k \bar{r}] IkXkYkUk] LkkU \bar{a} .k] Ck \bar{r} .k \bar{r} Ekjhdj.k
 - 3- Ck \bar{r} .k \bar{r} Ekjhdj.k] LkkU \bar{a} .k] IkXkYkUk] HkT \bar{r} k \bar{r}
 - 4- LkkU \bar{a} .k] IkXkYkUk] Ck \bar{r} .k \bar{r} Ekjhdj.k] HkT \bar{r} k \bar{r} mRrj & $1/4\frac{1}{2}$
- 2- Tk \bar{r} k fUk \bar{r} ks \bar{r} kh fOkYk, kUk g&
- | | |
|------------------------------|---|
| 1- {kkj h, k OkLQ \bar{s} | 2- {kkj h, k \bar{O} k \bar{r} ks \bar{r} |
| 3- nk \bar{r} kk \bar{a} | 4- dk \bar{r} Z vU, k mRrj & $1/8\frac{1}{2}$ |
- 3- fEkJ /kkRkq a CkUkkUks Lks &
- 1- XkYkUkk \bar{a} d vf/kd gks TkRk \bar{r} ks gA

- 2- /kkRkq dh LkfØ,kRkk Ck< TkkRkh g&
- 3- /kkRkq UkjEk gks TkkRkk g&
- 4 /kkRkq <kYkUks ,kkk,k CkUk TkkRkk g& mRrj & 1/2 1/2
- 4- gkbMRSTkUk fdLkLks fØ,kk dj EkfKkKkKkY CkUkkRkk g&
1. C 2. CO 3. Ca 4. H
- mRrj & 1/2 1/2
- 5- vkDLkhtkUk Ok UkkbVRSTkUk dk fEkJ.k Ñf<kEk 'OkLkUk Eka mlk,kk&kh g&
- 1- 1% 2- 4% 3- 1% 4- 2%
- mRrj & 1/4 1/2
- 6- , dh fYfTkkk lknkFKZ ds : lk Eka mlk,kk&kh fd,kk TkkRkk g&
- 1- OkfEk& vEYk 2- , fFKYk , YdkgYk
- 3- EkfFKYk , YdkgYk 4- , LkhfVd vEYk A mRrj & 1/3 1/2
- 7- Lk&kkUk CkgYkd dk mnkgj.k g&
- 1- Okk,kfUkd DYkkg kbM 2- lkk&/huk
- 3- U,kfDYkd vEYk 4- CkdYkkbV mRrj & 1/4 1/2
- 8- vkDLk , fLkFVYkhuk TkkYkUk Lks /kkRkq/ka dh CkSYM& Ok dfV& dh TkkRkh g& bLk TokYk dk Rkkk gk& g&
- 1- 2800°C 2- 3200°C 3- 3500°C 4- 2500°C
- mRrj & 1/2 1/2

LkR,k , Oka vLkR,k lk' Uk&

- 1- , fFKYk , YdkgYk dk IUPAC UkkEk , Fk&kk& vEYk g& 1/4 lghi
- 2- jEk Eka , YdkgYk dh Ekk<kk 40&45 lkfRk' kRk g& 1/4 kYkRk 1/2
- 3- Lkk&æRk v,kLd dks OkLRkq dh mlkFLfFRk Eka XkEkZ djUk lkkYkUk dgYkkRkk gS A 1/4 kYkRk 1/2
- 4- RkROkka dks /kkRkqj v/kkRkqj mlk/kkRkq , Oka fEkJ/kkRkq Eka OkXkh&Rk fd,kk Tkk LkdRkk g& 1/4 kYkRk 1/2

- 5 Ek&Uksy, kEk Eka , Y, k&Ekf&Uk, kEk v&sj Ek&Uk&f' k, kEk /kkRkq a fEKYkh g&k&kh g&A 1/4.kgh1/2
- 6- QQk&Y&kn&j R&k&k&k Eka 98 Ik&f&Rk' k&Rk 'k& R&k&k&k g&k&Rk g&A 1/4.kgh1/2
- 7- Okk, k&q&k&Uk Eka ghfy, kEk 85 Ik&f&Rk' k&Rk R&k&f&k g&kb&M&R&f&Uk 15 Ik&f&Rk' k&Rk dk f&E&J .k H&k&j k Tk&R&Rk g&A 1/4.yr1/2
- 8- 'kk&j k Uk&b&V&R&f&Uk dk v&Ok, k&Ok g&A 1/4.kgh1/2

bdkb& 03

, d 'k&n Eka m&R&R&kj nh&f&Tk, &

- 1- dk, k&Z dj&Uks dh {k&E&R&k&k d&ks D, k&k dg&R&ks g&A m&R&R&kj &Å&T&k&Z A
- 2- L&k&y&k&Z Eka Å&T&k&Z m&R&I&k&f&Uk dk dk&j .k $H + H \rightarrow He$ C&k&U&R&R&k g&A b&L&k f&Ø, k&k d&ks D, k&k Uk&E&k n&R&ks g&A m&R&R&kj &L&k&f&Uk f&Ø, k&k A
- 3- L&k&sj Å&T&k&Z d&ks f&Ok | &R&k Å&T&k&Z Eka C&kn&Y&k&U&ks Ok&Y&ks L&k&f&Uk d&ks D, k&k dg&R&ks g&A \ m&R&R&kj & L&k&sj L&k&f&Uk A
- 4- L&k&sj L&k&f&Uk f&du&k v) &R&py&d&ka ds C&k&U&ks g&k&B&ks g&A m&R&R&kj &f&L&k&f&Y&k&du&k , O&ka X&k&f&Y&k, k&E&k
- 5- L&k&T&kh&O&ka Eka Å&T&k&Z L&f&k&k&U&k&R&k&j .k dh l&g&Y&kh d&M&h d&k&Ok g&A g&js l&k&B&ks
- 6- H&k&j&R&k E&ks l&k&j&E&k&k .k&q&Å&T&k&Z ds m&l&k, k&k&B&k ds f&Y&k, m&R&I&k&nd Uk&j&sj k Eka , d d&æ [k&k&f&Uk X&k, k&k g&SA , g& fd&L&k j&k&T, k E&ks g&A m&R&R&kj l&kn&f&Uk A
- 7- l&k&f&R&, k&ka ds g&js j&B&k g&k&B&ks ds dk&j .k D, k&k g&A DY&k&sj k&f&O&Y&k dh m&l&k&f&L&f&R&k A
- 8- n' , k l&k&dk' k dk R&k&j&B&k n&f&, k&Z f&d&R&k&U&k g&k&R&k g&A $1/4 \times 10^{-7}$ l s 7×10^{-7} ds C&h&P&k&Z

f&j&DR&k L&f&k&k&U&ka dh l&k&f&R&k&Z dh&f&Tk, &

- 1- Uk&k&f&H&k&dh, k f&j , DV&j Eka &&&&&f&Ok [k&M&U&k dh n&j dh f&U&k, k&f&e&k&R&k dj&R&kh g&A 1/4.d&M&f&E&k, k&E&k dh NM&1/2
- 2- , k&j&S&U&k, k&E&k &&&dh f&Ø, k&k L&ks f&Ok [k&M&R&k g&k&R&k g&A 1/4.uk&f&H&k&dh; fo [k&M&u&1/2
- 3- l&k&O&U&k P&k&f&D&d, k&ka dk n&f&Uk &&&&&&&g&A 1/4.M&u&e&k&d&Z
- 4- X&k&B&k&k Uk&n&h l&k&j C&k&U&k C&k&Z&k &&&&&f&Ok&O&k&n dk f&Ok' k, k j&g&A 1/4.V&g&j&h C&k&k&1/2
- 5- 1 ev. dk E&k&k&U&k &&&&&&&&&&&&T&k&f&Uk g&k&R&k g&A 1/41-602 $\times 10^{19}$ J
- 6- BARC dk E&k&f&, k&k&Y&k, k &&&&&E&ka g&A 1/4.E&k&f&C&k&b&Z

- 7- Lkylz lfrk lkdM &&&&&Tlvk ÅTkkz mRLkFTkRk djRkk g& $\frac{1}{3}-86 \times 10^{26} \frac{1}{2}$
- 8- Lkylz ds ØkM Eka gkbMRSTKUK Ukkfhkd feYkdj ghfYk, kEk CkUkkRks g& bLkdh [kkst'k TKEKUK ØkSkfUkd &&&&Uks dh Fkh A $\frac{1}{9}$ CkFks

mfpRk Lk&k'k TkkSM, k&

- | | | |
|----|-----------------|------------------------|
| 1- | Eknd | dMFEk, kEk |
| 2- | v) PkkYkd | Hkkjh TKYk |
| 3- | fok [k&Uk dh nj | fLkfykdKUK]XkSYk, kEk |
| 4- | Lk&kkYkd | fLkfykdKUK |
| 5- | Lkkyj Lkyk | RkkCkk |

CkgfOKYlkh, k lk' Uk &

- 1- bñjk Xkk/kh lkjEkk. kq vUkkk&kkuk d& LFkkfIRk g&
- | | | | |
|--------------|----------|------------|---------------|
| 1- dYkKD dEk | 2- dks/k | 3- Ukj k&k | 4- Rkkjklkj A |
|--------------|----------|------------|---------------|
- mRrj & $\frac{1}{4} \frac{1}{2}$
- 2 Tkuj&sj ds fLkV HkkXk dks dgk TkkRkk g&
- | | | | |
|----------|---------|----------|-------------|
| 1- jk&sj | 2- LV&j | 3- d&R&j | 4- jkk&ks/j |
|----------|---------|----------|-------------|
- mRrj & $\frac{1}{2} \frac{1}{2}$
- 3- Ukkfhkdh, k fok [k&Uk dks vkLkkUkh Lks lk&kz Ukg& dKv&
- | | | | |
|----------------|-------------------|-------------|-----------------|
| 1- ,kj&Uk, kEk | 2- lYkw/k&Uk, kEk | 3- Fkk&j&Uk | 4- XkSYk, kEk A |
|----------------|-------------------|-------------|-----------------|
- mRrj & $\frac{1}{4} \frac{1}{2}$
- 4- lk&Uk PkDdh d ks PkYkkUks ds fYk, Øk, kq dh PkkYk vk&' ,kd g&
- | | | | |
|------------|------------|------------|--------------|
| 1- 15 Km/h | 2- 16 Km/h | 3- 17 Km/h | 4- 18 Km/h A |
|------------|------------|------------|--------------|
- mRrj & $\frac{1}{4} \frac{1}{2}$
- 5- Lk& ÅTkkz Lks Lk&k'k Ukg& g&
- | | | | |
|-------------|---------------|----------|------------------------|
| 1- Lk& Lkyk | 2- Lk& lks&yk | 3- nk&ka | 4- Ukkfhkdh, k ÅTkkz A |
|-------------|---------------|----------|------------------------|
- mRrj & $\frac{1}{4} \frac{1}{2}$

LKR_k , Oka vLKR_k CkRkbb_k&

- 1- UkkFHkdh_k LkYk_kUk Eka UkkFHkdh_k fOk [kA/Uk Lks dEk ÅTkkz fUkdYkRkh gS A XkYkRk
- 2- TkhOkk' Ek bZkUk Eka dks_kYkk] Iks/RSYk; e IktÑfRkd Xk&ka vkrks gA LkghA
- 3- IkFokh Ikj Lkkj ÅTkkz dk vOk' kksk.k nj YkXkHkXk 1-4 fdYkks TkYk IkfRk LkdA/ OkXkEkHVj gA Lkgh
- 4- UkkFHkdh_k vfhkfØ_kk Eka UkkFHkd ds vOk_kOk Ikfj OkfRkRk Ukgha gkRks& XkYkRk
- 5- ØMk dk Ekq_kkYk_k UkkXkIkj Eka gS &XkYkRk
- 6- Lkkyj dDj Eka HkksTuk IkakUks Lks fOkVkfEkUk Uk"V Ukgha gkRks & XkYkRk A
- 7- Lkqkz YkXkHkXk 7_kk 8 vjOk Ok"kk& Lks ÅTkkz IknkUk dj jgk gA Lkgh A

bdkbZ & 04

,d 'kCn Eka mRRkj nhfTk, &

- 1- vki RkUk dks k vkj IjkOkRkZk dks k dk EkkUk Eka D_kk LkEkKURkKk gA ¼LknOk CjkKckj½
- 2- OkLrkfOkd IkfRkfckEck Eka IkfRkfckEck dLkk CkURkKk gA ¼mYVk RkFkk Ikn& Ikj i kI_k½
- 3- Tkck OkLrkq vUkURk Ikj gks Rkks vOkRkYk nIkz.k dk IkfRkfckEck gkRkk gA ¼mYVk Ok Nks/k½
- 4- OkgUkka ds IkhNs dh OkLrkq dks nq_kUks ds fYk, dkkk Lkk nIkz.k mlk_kk&k gkRkk gA ¼vOkRkYk nIkz.k½
- 5- Tkck Ikdk'k fOkjYk Lks Lk?kUk Ekk/_kEk Eka TkkRkh gS Rkks mLkdak EkkXz D_kk gkRkk gA ¼vfhkYkEck dh vkj OkpRkh gS
- 6- ghjk fdLk ?kVUk ds dkj.k PkEdnkj fn [kRkKk gA ¼kwkz vkrkfjd IjkOkRkZk½

fjDRk LFkkUkka dh IkfRkZ dhfTk, &

- 1- Ikwkz vkrkfjd IjkOkRkZk Eka ØhfRkd dks k dk EkkUk vktkRkUk dks k Lks &&gkRkk gA ¼dEk½
- 2- Pk' Ekka Eka nij nf"V fUkOkj.k ds fYk, &&Yk&k dk Ikzkk&k djRks gA ¼mRRkYk Yk&k½
- 3- Uks& }kjk OkLrkq dk IkfRkfckEck &&gkRkk gA ¼mYVk Ok OkLrkfOkd½
- 4- nij dh OkLrkq LkkQ RkFkk fUkdV dh OkLrkq/kqkYkh fn [kUks Ikj &&& Uks& nk&k gkRkk gA ¼nij nf"Vnk"½

5- ?kja Eks EkhVj Eka CkgUks OkYkh /kkj &&&&, Elkhkj dh gkRkh g& ¼ , Elkhkj ½
mfPRk Lk&ak TksM, &

- | | | |
|-------------------|---|-----------------------|
| 1- IkkfEkd LkYk | A | LkhLkk LkPkk, kd LkYk |
| 2- f}Rkh, kd LkYk | B | 'kq'd LkYk |
| 3- fok Rk CkYk | C | UkkbØkEk |
| 4- bYkDVhd Ikk | D | V&LVUk |

mRRkj & 1. (A), 2. (A), 3. (D), 4. (C)

CkgfOkdYIkh, k Ik' Uk &

1- Å"Ekk dk LkPkj .k Ik&k'k dk dsk Lkk vOk, kOk djRkk g&

- | | | |
|---------------------|-------------------|------------|
| 1- IkkC&Kkhd fdj .k | 2- vOkjDRk fdj .k | |
| 3- n' ,k Ik&k'k | 4- UkhYkk Ik&k'k | mRrj & ¼ ½ |

2- OkkLRkOkd LkYkkh, k ds fdRkUks LkEk, k Ik&Z LkYkZ fn [kkbz nRkk g&

- | | | |
|--------------|----------------|------------|
| 1- nks fEkUV | 2- Pkkj fEkUV | |
| 3- 1 ?k&/k | 4- vk/kk ?k&/k | mRrj & ¼ ½ |

3- Uks& Eka IkfRkfkEkCk CkURkk g&

- | | | |
|-----------------|---------------|------------|
| 1- dkfUkZkk Eka | 2- jfVUkk Eka | |
| 3- vkbfjLk | 4- Ik&Ykh Eka | mRrj & ¼ ½ |

4- v&Ek ds fUk, kEkUkkk, kjj IkfRkjsk fok | Rk /kkj k ds Ek, k Lk&ak gkRkk g&

- | | | |
|-------------------------|--------------------|------------|
| 1- vUkØEkIkRkh | 2- O, kqØEkUkkkRkh | |
| 3- buEk&ks dk&Z Ukgha A | | mRrj & ¼ ½ |

5- Hkw Pk&CkdRk ds RkRk Ukgha g&

- | | |
|--------------------------------------|------------|
| 1- fndIkRk dk dka k | |
| 2- UEkUk dks k | |
| 3- Pk&Cdh, k {ks& dk {kSRkTk ?kVdka | |
| 4- Pk&Cdh, k {ks& dk m/OkkZkj ?kVd A | mRrj & ¼ ½ |

- 6- PkqCdh₃ k CkYk j s[₃kk, a lKjLlkj gkRkh g&
- 1- LkEkRkRkj 2- Lik' khz 3- j s[₃kh₃k 4- dkbz Ukgha A mRrj & 1/1 1/2
- 7- d fkkM fdj .ka gkRkh g&
- 1- __.kkokS' kRk 2- /kukkokS' kRk 3- mnkLkhuk 4- bukEka Lks dkbz Ukgha A
- mRrj & 1/1 1/2

LKR₃ k vLKR₃ k NkaV, &

- 1- vkkFRkRk fdj .k] lkjokFRkRk fdj .k vkj vfHKYkEck , d gh RkYk Eka gkRks g& LKR₃ k
- 2- mRRkYk nIkz k Eka CkUk IkFRkFckEcK OkLRq Lks Nks/kj Lkh/kk Ok vkHkLkh gkRkk g& LKR₃ k
- 3- mRRkYk nIkz k dh QkdLk njh __.kkREkd gkRkh g& vLKR₃ k
- 4- Ikzk' k , d Ekk/ kEk Lks nIkj s Ekk/ kEk IkokS k dj Rkk gS Rkks mLkdh vkkfUk Ok j& CknYkRkk g& vLKR₃ k A
- 5- mnkLkhuk fCkq lkj PkqCdh₃ k Lkpz mRRkj & nf{k .k fn'kk Eka Bgj Rkh g& vLKR₃ k

bdkbz & 05

, d 'kCn Eka mRRkj fYkf[k, &

- 1- Ekkukok 'kj hj dh LckLks CkMh IkkPk d Xk&Fk gS & , kNrk
- 2- fdLk j& ds Ikzk' k Eka Ikzk' k Lk&YkSk .k dh fO₃kk RkT'k gkRkh g& YkYk
- 3- Ekkukok 'kj hj Eka dYk vLFk₃kka dh Lk₃kk gkRkh g& 206
- 4- NVlk.khz dYk' k IknIk fdLk Ikzkj dk IkkSkk g& dhVHK{khA
- 5- dhVHK{kh IknIk fdLk RkRk dh dEkh ds dkj .k dhV [kkRks g& N₂
- 6- , khLV Eka dkok Lkk , & kkbELk mlfLFkrk gkRkk g& TkkEkst
- 7- vUkDLkh 'OkLkuk Eka fdRkUks dYkjsjh ÅTkkz EkDRk gkRkh g& 21Kg Cal.
- 8- jDRk LkEkog dh [kkT'k dh Fkh& YkM&LVbkj
- 9- TkYk Eka NaHCO₃ fEkYkkUks lkj Ikzk' k Lk&YkSk .k dh XkFRk Eka D₃kk lkfj OkRkDk gkRkk g& Ck<Rkh g&
- 10- dRkq/k Eka mRLkTkk fdLk v& ds }kj k gkRkk g& UksYhfM₃ kKA

**fjDRk LFkkukka dh IkfRkz dhfTk, **

- 1- vEkhCkk &&&&&&&fØ,kk }kjk HkkfTkuk Xkq.k djRkk gA
- 2- Ikzk'k Lka Yksk.k dh Ikzk'kh,k fØ,kk gfjRk YkOkd ds &&&&&Eka LkEIKUk gkRkh gA
- 3- Nks/h vRk dk lkgYkk HkkXk 'U' vdkj dk gkRkk gS fTKLk &&&dgRks gA
- 4- 'kdjk dk 'OkLUk Xkqkkad &&&&&& gkRkk gA
- 5- vkDLh 'OkLUk dh fØ,kk Eka &&&& ATP RkSkj gkRks gA
- 6- Ekkuk an,k IkfRk fEUKV &&&&Ckj /kMdRkk gA
- 7- &&&ds LkEk,k Ik.kjz Ckan jgRks gA
- 8- EkNYkh Eka 'OkLUk &&&&ds }kjk gkRkk gA
- 9- LkOkf«kd jDRk nrkk &&&LkEkj gA
- 10- Ökhkk mRLkTKk fØ,kk &&&&}kjk gkRkk gA
- 11- IkfRkOkRkhz fØ,kk dk fuk,kak.k &&&&&&&ds }kjk gkRkk gA
- 12- &&&&&gkEkLk QYkka ds lkdUks ds fyk, fTKEkRkj gA
- 13- vXk EflRk"d dk &&&LkqkUks dk Kkuk djkrkk gA
- 14- an,k /kMdUk dh 'kq vRk lkkj &&&&XkkB Lks gkRkh gA
- 15- &&&& gkEkLk dh dEkh Lks CkSkkkkuk jkk gkRkk gA

Lkgh Lkakk TkfM,ks &

- | | | |
|----|--------------------|---------------------------|
| 1- | 'OkLUk jksx | OkDd |
| 2- | EEG | , MjhukYkhuk gkEkLk |
| 3- | vRk LkqEk | , FkhfYkuk gkEkLk |
| 4- | LkdVdkYkhuk gkEkLk | EflRk"d dh fØ,kk' khYkrkk |
| 5- | QYkka dk lkdUk | nEkk |

Lkgh fkdYIk Pk_kUk dj&

- 1- , d LkLFk EkUk_k ds 'kj hj dk RkkkEkUk gkRkk g&
 1- 100°F 2- 95°C 3- 98.4°F 4- 98.4°C
 mRRkj & 98-4 Qj bkgbV
- 2- LkkkZkkd jDRk Xkkgh LkEkj g&
 1- A 2- B 3- AB 4- O
 mRRkj & AB
- 3- EkUk_k dk lkekck mRLkTkhz vkk g&
 1- ân 2- kDd 3- RkPk 4- jDRkA
 mRRkj & kDd
- 4- gkbMAYkk , d lkdkj dk lkkkk g&
 1- TkYkh_k 2- LFkYkh_k
 3- Ek: LFkYkh_k 4- dhVHk{kh mUkj TkYkh_kA mRRkj & TkYkh_k
- 5- lkkkka Eka TkMka Lks lkkUk dk mlkj dh vkj lfkjkgUk djRkk g&
 1- YkkkEk mRkd 2- TkkbYEk mRkd
 3- lfkUk_kk; 4- RkPk mRkd mRRkj TkkbYEk mRkd A
 mRRkj & TkkbYEk mRkd
- 6- vkkLkh 'kLkUk Eka kTkkz EkDRk gkRkh g&
 1- 21 2- 30 3- 38 4- 40 mRRkj & 38

Lkgh XkYkRk NkV_k&

- 1- QhRkkNfEk , d lkj Tkhkh g& 1/2Lkgh1/2
- 2- gjs lkdk'k Eka lkdk'k LkYkSk.k RkhkRkk Lks gkRkh g& 1/2XkYkRk1/2
- 3- bFkkbYk , YdkjYk dk Lkk C₂H₅OH g& 1/2Lkgh1/2
- 4- lk.kj dz fnUk ds LkEk_k Ckm jgRks g& 1/2XkYkRk1/2
- 5- /kEkfUk_kka dh fnkkj f'kjvka dh RkYkUk Eka Ekks/h gkRkh g& 1/2Lkgh1/2

- 6- T.B. , d Tkhokk.kq TkfURk jkkk g& ¼kgh½
- 7- EkkUKk , d ,kjdks/syk d Tkhok gSA ¼kYkRk½
- 8- EkfLRk" d dk gkbkkkEYkEkLk Hk[Fk&I,kkLk dh LkPkUk nBkk g& ¼kgh½
- 9- vkDLkhtkuk kf) gkEkEk g& ¼kgh½
- 10- RkPk Lkgk,kd mRLkTkhZ v&k g& ¼kgh½
- 11- LOkLFk EkUkq,k dk jDRkPkik 120 80 gkRk g& ¼kgh½
- 12- fOkVfEkUk K vkqk ds LOkLF,k Lks Lk&k/kRk g& ¼kYkRk½
- 13- 'OkLkuk fO,kk Eka ÅTkZ ATP ds : Ik Eka LkPkRk gkRk g& ¼kgh½
- 14- OkLk dk 'OkLkuk Xkqkkad 1 Lks dEk gkRk g& ¼kgh½

bdkbZ & 06

, d 'kCn Eka mUkj nhfTk, &

- 1- UNEP dk Ikjk UkEk fykf[k, \
- 2- vk&tkk IkjRk fdLk fdj.k dks Okk,k&k/Myk Eka vkUks Lks jk&Rk g& Ikj k&RkUk fOkfdj.k A
- 3- Okk,kq Eka UkkbV&tkuk fdRkUk IkfRk'krk gkRk g& 78-08 IkfRk'krkA
- 4- vEYk,k Ok"kkZ dk dkj.k D,kk g& H₂SO₄
- 5- LPG Ekq,k vk,kok g& C,kw&k
- 6- fdLk X&kk Ikk.kokk,kq dgRks g& vkDLkhtkuk
- 7- Ekink dks nq'krk djUks OkYk jLk,kuk dk&k Lk g& Mh-Mh-Vh-A

fjDRk LFkkuk dh Ik&RkZ dhfTk, &

- 1- Okk,k&k&k dk Ekq,k vk,kok &&X&kk g& fEkF&k
- 2- Okk,kq Eka vkDLkhtkuk &&IkfRk'krk g& 21 IkfRk'krkA
- 3- Okk,k&k/Myk Rkkik kf) ds fyk, fT&Eknj X&kk &&g& dk&Rk MkbvkDLk&M A
- 4- XkYk YkdMh ds TkYUks Lks &&&X&kk fuf&Rk gkRk g& (CO)
- 5- , d Ikk&h LRkj Lks n&kj's Ikk&h LRkj Rkd d&Yk &&& ÅTkZ Ik&kfgRk gkRk g& 10%

- 6- Xkxkk Tkyk Eka &&&dk gfkUkdjd TkhOkk.k q lkk,kk TkkRkk gA dksYkQkEkZ OkXkZ A
- 7- LkkEkku,k CkkRkPkRk dh /Okfuk &&&MfLkCkyk gS 60 A

mfrj l cdk tkMks &

- | | |
|-----------------------------|------------------------|
| 1- Xkxkk gkÅLk XkS | A. O ₃ |
| 2- , Yk-lkh-Tkh- | B. CO ₂ |
| 3- Ckk, kxkxk | C. EkhFkSk |
| 4- vOkjDRk fdj.k vOk' kkskd | D. C ₃ kwSk |
- mRrj & 1. (B), 2. (D), 3. (C), 4. (A)

LkR,k vLkR,k NkAV,ks &

- 1- QLYk PkØ Lks Ekin dh mOkj.k 'kfDRk Ck<Rkh gA LkR,k
- 2- Xkxkk gkÅLk lkhkkOk Lks RkkIkEkku Eka Okf) gkRkh g& LkR,k
- 3- vEYkh,k Ok"kkZ ds ?kVd Ekin dks lknf"Rk djRks gA LkR,k
- 4- /Okfuk lknf.k dk LkOkkZ/kd lkhkkOk Rk&<kdk Rk&k lKj lKMRkk g& LkR,k
- 5- DYKsj huk Lks lkkukh dh v'kq) nij gks TkkRkh gA LkR,k
- 6- UksOkhd RkkIkEkku Okf) Lks /kqka dk CkQZ fik?kyk Tkk,kxkk& LkR,k A

CkgOkdYlkh,k lKz' Uka ds mRRkj nks &

- 1- vktkkUks lKjRk dk {k,k djRkk g&

1- CFC	2 CO ₂	3 NO ₂	4 CH ₄
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mRrj & 1/1 1/2
- 2- TkhOkk' Ek b&uk dk mnkgj.k Ukgha g&

1- lks/Ryk	2- dkskykk	3- MhTYk	4- Ckk, kxkxk
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mRrj & 1/4 1/2
- 3- Tkyk lknf.k Lks gkSkkykh CkhEkjh g&

1- gStk	2- , MEk	3- jRk&kh	4- Ok. kxk/kRkk
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mRrj & 1/4 1/2

4- UkkbVrTuk dk fLFkjhdj.k djRkk g&

1- TkhOkk.kq

2- fOk"kk.kq

3- dOkd

4- 'kOkkYk

mRrj & 1/4 1/2

5- IkaNfRk Eka vksTkkSk Ij Ugha gkSk Ij &

1- ROkPk dLkj gks LkDRkk g&

2- vkDLkhTkUk dEk gks Tkk,kSkh

3- vkdk'k dkYkk fn[kSk A

4- dkbZ IkHkkOk Ugha IkMlSk A

mRrj & 1/4 1/2