



foKku ds rRo

d{k k XI oha



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 kskku 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) gkskA

'k\$kdkeukvka l fgr---


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

I fpo

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

x`g foKku

bdkbz & 11oha

fo"K; & foKku ds rRo

1½ inkFkZ ds l kekl; xqk] 2½ l jy e'khuA A

vfr y?kqRrjh; izu ½ vdl½

izu 1& lyou ds fu;e fyf[k, \

izu 2& Bkl ds vi\$kr ?kuRo Kkr djus dk l = fyf[k, \

izu 3& nzekih ds fofklku izdkja ds uke fyf[k, \

izu 4& igkMha dh vi\$kk ok; eMy dk ntc l epz LFky ij vf/kd gkrk g\$ D; ka \

izu 5& ikuh ds tgkt dh ryh ea Hkkjh l keku D; ka j[kk tkrk g\$ \

izu 6& mRlykou dlnz fdl s dgrs g\$ \

izu 7& vkdZeMht dk fl)kr D;k g\$ \

izu 8& unh dh vi\$kk l epz ea rjuk vki ku D; ka g\$ \

izu 9& e'khu fdl s dgrs g\$ \

izu 10& vkHkl Hkkj o l R; Hkkj dks Li"V dhft, \

izu 11& mRrkyd l s vki D;k l e>rs g\$ \

izu 12& flFkj ,dy f?kjuh dk mi;lx dgkl fd;k tkrk g\$ \

izu 13& e'khu dh n{krk l s D;k l e>rs g\$ fyf[k, A

y?kqRrjh; izu ½] 4 vdl½

izu 1& ok; ntc ekih ea ikjs ds LFku ij ikuh dk mi;lx ugha dj l drs g\$ D; ka

izu 2& lyou rjuz ds fu;e dks mnkgj.k l fgr fyf[k, A

- izu 3& vldfeMht ds fl)kr ds }kjk fdl h fn, x, /krq dh 'k) rk d\$ s Kkr dh tk l drh g\$ \
- izu 4& l k/kj.k ok; qkcekih ds rhu nkSk fyf[k, A
- izu 5& ykgs dk cuk tgkt rls ikuh ea r}rk g\$ tcf d ykgs dh dhry ikuh ea Mc tkrh g\$ D;ka \
- izu 6& ikuh l s Hkjs fxykl ea cQZ dk VpMk r} jgk g\$ A FkMs l e; ckn tc cQZ dk VpMk fi?ky tkrk g\$ rls fxykl ds ry ij D;k iHko iMxk \ dkj.k l fgr l e>kb, A
- izu 7& gea ok; eMyh; nkc dk vuHko ugha gsrk] dkj.k l fgr fyf[k, A
- izu 8& 0; kogkfjd e'khuka dh n{krk 'kr ifr'kr D;ka ugha gsrh \
- izu 9& f?kjuh D;k g\$ \ ;s fdrus izdkj dh gsrh g\$ \ Li"V dhft, A
- izu 10& nœkih ds fofHku izdkja ds uke crkb, A

nh?kZ mRrjh; izu 15 v d 1/2

- izu 11& l jy ok; qkcekih ea ikjs dk mi ; kx D;ka djrs g\$ \
- izu 12& ok; eMyh; nkc dks iz kx }kjk inf'kr dhft, \
- izu 13& l k/kj.k c\$ketVj dh jpuk dks l fp= l e>kb, \
- izu 14& mRrkyd D;k g\$ \ mRrkyd ds izdkja dk o.ku dhft, A
- izu 15& oD; e Dyhuj dk o.ku dhft, A

nh?kZ mRrjh; izu 15 v d 1/2

- izu 1& l jy ok; qkcekih ds nkSk fyf[k, A
- izu 2& fudYI u nœkih dk ukekdr fp= cukb; s rFk crkb; s fd ;g fdl fl)kr ij dk; l djrk g\$ \
- izu 3& fudYI u gkbMketVj l s Bkl dk vki f(kd ?kuRo Kkr dhft, A

izu 4& n/kekih ;= dh l j puk dk l fp= o.ku dhft, A

izu 5& ,s j k W M c j k e h V j dh j puk l f (k l r e a l e > k b ; s \

izu 6& e'khu fdl s dgrs g s \ di M k / k s s dh e'khu dk o.ku dhft, A

&&00&&

m"ek %& fof'k"V m"ek o xqr m"ek dk i k j h k d Kku] DoFkukad] xyukad ,oa
bu ij nkc ,oa v'kq); ka dk i h k k o] i s k j d q j dk fl) kr ,oa dk; fof/k

vfr y?kqRrjh; izu 1/2 vad1/2

- izu 1& xqr m"ek fdl s dgrs gš \
- izu 2& xyukad dh ifjHkk"kk nift, \
- izu 3& rhoz c[k j l s i h m r 0; fDr ds ekFks ij BMs ty l s Hkhxk diMk j[k k tkrk
gš D; ka
- izu 4& fof'k"V m"ek fdl s dgrs gš \
- izu 5& ty l s Hkjs gq fxykl dks Nk/k l k cQZ dk VpMk fdl izdkj BMk dj
nrk gš \
- izu 6& m"ek l pkyd rFk m"ek j k k h d pkyd ds nk&nks mnkgj.k fyf[k, \
- izu 7& DoFkukad fdl s dgrs gš \ DoFkukad ij nkc dks l e > kb; s \
- izu 8& xyukad ij v'kq); ka dk D; k i h k k o i M r k gš \ fyf[k, \
- izu 9& cknyka okyh jkrs LoPN jkrka dh vi s k k xel gkrh gš D; ka \
- izu 10& l r l r ok'i o v l r l r ok'i fdl s dgrs gš \
- izu 11& fuji s k vknrk o vki s (kr vknrk fdl s dgrs gš \
- izu 12& dks l s j k dh oLrqa m"ek dh vPNh vo'kksk d rFk dks l h i j k o r d gš
fyf[k, A
- izu 13& oLrqa dh vkrfjd Åtkz l s D; k v f h k i k; gš \
- izu 14& /kkrq ds cus crZuka ea ydMk dk nLrk D; ka yxk; k tkrk gš \
- izu 15& qlykLd dh Hkhrjh l rg pednkj gkrh gš D; ka \
- izu 16& vkbl ckbl ea cQZ ugha fi ?kyrhA D; ka \
- izu 17& m"ek l p j . k fdl s dgrs gš \
- izu 18& m"ek pkyu dh fØ; k l c l s v f / k d fdl ea gkrh gš \

- izu 19& vknřk fdl s dgrs gđ \
- izu 20& vkiř{kr vknřk dk mi ; lř fdu&fdu mi dj. kka ds cukus ea gkrk gđ \
- izu 21& dkj.k crkb; s % o"řz ds iml ge cpřh dk vulko djrs gđ \

y?kpnRrjh; izu 18] 4 vđ½

- izu 1& m"ek /kkřrk D; k gđ \ l e>kb; ř
- izu 2& 'kjh dh fl dkbz ds fy, xel ty l s Hkjh Fřyh dk mi ; lř D; ks fd; k tkrk gđ \
- izu 3& m"ek ekiu dh dksř&dksř l h bdkb; kll gđ \
- izu 4& xfeř ka ea eVdka ea ty vf/kd BMk gkrk gđ fdlřq ueh okys fnu , d k ugha gkrkj D; kř
- izu 5& Dořkukad dh ifjHkk"kk fyf[k, A inkřz ds Dořkukad ij v'kř); ka ds iHkko dks fyf[k, \
- izu 6& ok"ihdj.k ,oa Dořku ea vřřj Li"V dñft, \
- izu 7& m"ek rřk rki ea vřřj Li"V dñft, \
- izu 8& iřkj dđj ds dk; l o fl)kr fyf[k, \
- izu 9& l fnř ka ea l Qn jak rřk xfeř ka ea dkys jak ds di Mř D; ka ugha i gurs gđ \
- izu 10& pk; dh dřyh dks ik; % Vřdksth l s <ddj j [krs gđ \
- izu 11& vkiř{kr vknřk dk thou ea D; k egřo gđ \
- izu 12& vřys vřj ikys ea vřřj Li"V dñft, \
- izu 13& m"ek Lřkkurj.k ds 0; kogřjd mi ; lř fyf[k, A
- izu 14& Fkeř řlykLd ea j [kh oLřq dk rki dkQh l e; rd T; ka dk R; ka cuk jgrk gđ A dkj.k l fgr l e>kb; s A
- izu 15& l fnř ka ea /křřq dk VřřMk Li'řz djus ij ydMk l s vf/kd BMk egl ř gkrh gđ D; kř

- izu 16& iz,ksx }kjk fl) dhft, fd ok;q ea ty ok'i ekstn gS \
- izu 17& ?kja ea jk'kunku D;ka yxk;s tkrS gS \
- izu 18& D;k dkj.k gS fd ek's dkkp ds fxykl ea xel pk; ;k xel i kuh Mkyus l s pVd tkrh gS \
- izu 19& vki D;k gS \ ;g d's curh gS \ vki kad l s vki D;k l e>rs gā \
- izu 20& jfxLrku fnu ea cgr xel yfdu jkr ea cgr BMk gks tkrk gS A dkj.k l fgr fyf[k,A
- izu 21& D;k dkj.k gS fd xfez,ka ea l Qn rFkk tkMha ea xgjs jak ds diM+ igus tkrS gā \ fyf[k, A

nh?kz mRrjh; izu 15 vad½

- izu 1& i'kj d'pj dk mi;ksx djrs l e; dksu&dksu l h l ko/kkfu;ka j [kuh pkfg,A
- izu 2& m"ek ds LFkkukUrj.k dh fofkkUu fof/k;ka dks ,d&,d mnkgj.k l fgr l e>kb;s A
- izu 3& FkeZ f'ykLd ds fl)kr rFkk jpuk dk o.kU dhft, A
- izu 4& l kyj d'pj d's dk;Z djrk gS \
- izu 5& xJ fysMj dk iz,ksx djrs l e; dksu&dksu l h l ko/kkfu;ka vko'; d gS \
- izu 6& vki rFkk /kk ds ckjs ea l fki ea o.kU dhft, A
- izu 7& m"ek dh pkyu] l ogu ,oa fofdj.k fof/k ea ikp vUrj Li"V dhft, A
- izu 8& fofdj.k D;k gS \ n'ud thou ea fofdj.k l s D;k ykkk gS \
- izu 9& l pkyd ,oa d'pkyd fd l s dgrs gā \ iz,ksx }kjk fl) dhft, fd fofkkUu inkFkkā dh pkyu {kerk fkkUu&fkkUu gkrh gS A

&&00&&

/ofu %& ifjHkk"kk] /ofu rjaks dk l p.j.k] ekuo dku dh jpuk ,oa /ofu dk mRiknu 'kkj ,oa l kachfrd A

vfr y?kqRrjh; izu ½ vad½

izu 1& /ofu D;k gS \

izu 2& /ofu gea fdl izdkj l qkbZ iMfh gS \

izu 3& l kekl; euq; }kjk u.; /ofu dh vkofr fdruh ckj gksuh pkfg, \

izu 4& ekuo d.kZ dks fdruh Hkkxka ea ckZ/k tk l drk gS \

izu 5& l qoj /ofu fdl s dgrs gS \

izu 6& fdl h /ofu dk rkjRo fdu ckrka ij fullk] djrk gS \

izu 7& /ofu dh xqkrk 'kcn l s D;k l e>rs gS A fyf[k, A

izu 8& /ofu fujkZku fdl s dgrs gS \

izu 9& /ofu fujkZkh inkFkka ds xqk crkb, \

izu 10& /ofu dk vo'kksk.k xqkZad fdl s dgrs gS \

izu 11& /ofu rjaks l s vki D;k l e>rs gS \

izu 12& fuokZ ea /ofu dh vuqkZ fdl izdkj gsrh gS \

izu 13& l kukehVj ds rkj }kjk mRiUu /ofu dks ge fdl uke l s tkurs gS \

izu 14& /ofu dk l p.j.k fdl ek;/e ea rhoz gsrk gS \

izu 15& 'kkj fdl s dgrs gS \

izu 16& l qoj /ofu dh fo'kksrk fdl ckr ij fullk] djrh gS \

izu 17& 'kkj inlk.k fdl s dgrs gS \

izu 18& l qoj /ofu vkj 'kkj ea D;k vrj gS \ l e>kb;s A

y?kRrjh; izu 18] 4 vdl½

- izu 1& gea /ofu dš s l qkbz iMfh gš \
- izu 2& /ofu inlk.k ds dkbz rhu dij hko fyf[k, A
- izu 3& /ofu inlk.k ij fVli.kh fyf[k, A
- izu 4& /ofu dh rhork dš&dš l s dkj dka l s i hko for gksh gš \ fyf[k, A
- izu 5& rkjRo ,oa vtofr ea fdl idkj dk l e>kb gš \
- izu 6& 'kij inlk.k dks fdl idkj fu; f=r fd;k tk l drk gš \
- izu 7& l kchfrd /ofu ds dš&dš l s y{k.k gš \
- izu 8& /ofu dh rhork ,oa rkjRo dks l e>kb; s \

nh?kZ mRrjh; izu 15 vdl½

- izu 1& fl) dhft, fd /ofu dh mRi frR dEiu ds }kjk gksh gš \
- izu 2& /ofu xeu ds fy, ek;/e dh vto'; drk gksh gš \ iz, kx }kjk l e>kb, A
- izu 3& xleQku dh jpuk ,oa dk;Z fof/k l fp= l e>kb, A
- izu 4& /ofu ox grq U; W u dk l e= fyf[k, \
- izu 5& 'kij inlk.k l s vki D;k l e>rs gā A bl ea gksus okyh gkfu; ka dk mYys[k dhft, rFkk bl l s cpus ds mik; fyf[k, \
- izu 6& fjdkMZ lys j ds eq; Hkkxka dh fØ; k&fof/k l e>kb; s \
- izu 7& Vi &fjdkMj dh jpuk ,oa dk;Z fof/k fyf[k, \
- izu 8& d.kZ dk LoPN o ukelidr fp= cukb; s \

&&00&&

jkl k;fud l a kx ds fu;e & n0; ds LFkf;Ro dk fu;e] fLFkj vuqkr dk fu;e] xq.kr vuqkr dk fu;e] vkfiddh foyş rk xqkuQy %& i fjHkk"kkj fo-xq ds mi ; kx ,oa dkjd A

vfr y?kqRrjh; itu 1/2 vdl½

- itu 1& xq.kr vuqkr ds fu;e dks l e>kb, A
- itu 2& 0; Øe vuqkr dk fu;e dks l e>kb, A
- itu 3& fLFkj vuqkr ds fu;e dk ifriknu fdl us fd;k \
- itu 4& vekfu;k xş fuelzk dks d0y l ehdj.k ds }kjk crkb, \
- itu 5& jkl k;fud l a kx ds fu;e D;k gş \ fdlgha nks fu;e] dks fyf[k, \
- itu 6& n0; dh vfoukf'krk dk fu;e D;k gş \
- itu 7& xq.kr vuqkr dk fu;e fdl oKkfud us ifrikfnr fd;k Fkk \
- itu 8& xyni kkl ds xş h; vk;ru l calh fu;e dh ifV grq ,d mnkgj.k nht,\
- itu 9& n0; u rks u"V fd;k tk l drk gş vlg u mRlUu fd;k tk l drk gş A ;g fdl fu;e dks inf'kr djrk gş \
- itu 10& jkl k;fud ; kxd ea vo;oh rRo l n0 Hkkj dh n"V l s fuf'pr vuqkr ea feys jgrs gā ;g dks l k fu;e gş A
- itu 11& 0; Øe vuqkr dk fu;e dks fdl oKkfud us ifrikfnr fd;k Fkk \

y?kqRrjh; itu 1/3] 4 vdl½

- itu 1& jkl k;fud l a kx ds fu;e ds izlkj fyf[k, A
- itu 2& fLFkj vuqkr dks mnkgj.k l fgr fyf[k, A
- itu 3& rŷ;kadh Hkkj dks mnkgj.k l fgr fyf[k, A
- itu 4& xyni kkl dk xş l calh fu;e crkb, A
- itu 5& 0; Øe vuqkr ds fu;e dks mnkgj.k l fgr l e>kb, A

izu 6& fLFkj vuqkr ds fu;e fy[kdj ,d iz;ks }kjk bl fu;e dh i{V
dhft,\

izu 7& vk/kfud vuq'kuka ds l nhlz ea fLFkj vuqkr ds fu;e dh 0;k[;k dhft,\

izu 8& xJ h; vk;ruka ds fy, l a kx dk fu;e fyf[k, \

izu 9& ,dksMts dh ifjdYiuk dk egRo fyf[k, \

nh?kZ mRrjh; izu 15 vdlz

izu 1& n0; ds vfoukf'krk ds fu;e dks mnkgj.k l fgr l e>kb, \

izu 2& xq.kr vuqkr ds fu;e dks mnkgj.k l fgr 0;k[;k dhft, \

&&00&&

foys rk xqkuQy %& ifjHkk"kk] foys rk] xqkuQy ds mi ;ksx ,oa dkjd A

vfr y?kqRrjh; izu 1/2 vdl½

izu 1& vEyh; foy;u fdl s dgrs gā \

izu 2& {kkjh; ifrjkkkd fdl s dgrs gā \

izu 3& ekjy foys rk D;k gS \

izu 4& gkbMkst u vk;u l klnzk 'kCn dk D;k vFkZ gS \

izu 15& {kkjh; foy;u fdl s dgrs gā \

izu 6& euq; ds jDr dk PH eku fdruk gkrk gS \

izu 7& vEyh; rk dk Ldy fdl s dgrs gā \

izu 8& l e vk;u dh mi fLFkr ea fdl h fo|r vi?kV; dk foys rk xqkuQy fdl izkj dk gksk \

izu 9& vEyh; foy;u dk PH eku fdruk gkrk gS \

izu 10& {kkjh; foy;u dk PH eku fdruk gkrk gS \

y?kqRrjh; izu 1/3] 4 vdl½

izu 1& l kcp dk vo{ki .k dS s gkrk gS \

izu 2& foys rk xqkuQy dks iHkkfor djus okys dkbZ rhu dkjd fyf[k, \

izu 3& foys rk xqkuQy dk dkbZ ,d vuqz;ksx fyf[k, \

izu 4& foys rk xqkuQy ds vk/kkj ij ued dk 'kq]hdj.k dS s fd;k tkrk gS \

izu 5& foys rk xqkuQy dh ifjHkk"kk fyf[k,] xqkkRed fo'ySk.k ea bl ds nks mi ;ksx mnkgj.k l fgr fyf[k, \

izu 6& xqkkRed fo'ySk.k ea ni js l enj ds enydk dh igpku ds fy, H₂S xS izkfgr djus l s ioz foy;u ea HCl D;k feyk;k tkrk gS \

izu 7& foysh rk ,oa foysh rk xqkuQy ea l cdk crkb; s \

izu 8& foysh rk xqkuQy ds nls mi ;lx fyf[k, \

nh?kz mRrjh; izu 1/5 vad1/2

izu 1& m|lx ea foysh rk xqkuQy ds mi ;lx fyf[k, \

izu 2& ued ds l'ar foy;u ea HCl xS iokgr djus ij 'kq ued vo{kfi r
D; ks gkrk gS \ mngj.k l eldj.k ndj l e>kb; s \

izu 3& xqkkRed fo'ySk.k ds f}rh; oxl ea HCl dk vlg r'rh; oxl ea NH₄ Cl dk
mi ;lx l e>kb; s A

izu 4& pH eku fdl s dgrs gS \ l {ki ea l e>kb; s $\frac{N}{10}$ HCl dk pH eku fdruk
gkxk \

izu 5& foysh rk xqkuQy 1/5 foysh 1/2 ds eq; vujz lx crkb, \

izu 6& $\frac{N}{50}$ HCl dk pH dk eku Kkr dlft, A

izu 7& fdl h foy;u ds pH eku dk D;k vFkz gS \

izu 8& cQj foy;u fdl s dgrs gS \ vEy cQj foy;u rFkk {kj cQj foy;u
dk ,d&,d mngj.k nift, \

izu 9& cQj foy;u dk egRo crkb, A

&&00&&

ty %& ty ds ikdfrd L=kr] enq ,oa dBkj ty] ty dh dBkjrk ds izkj
,oa nj djus dh fof/k A

vfr y?kqRrjh; izu ½ vad½

izu 1& fdl rki ij ty dk ?kuRo l oki/kd gkrk gS

izu 2& ijE; WV fof/k }jk ty dh ds h dBkjrk nj dh tkrh gS \

izu 3& ikdfrd ty fdu L=kr]s l s iklr gkrk gS \

izu 4& ty dks jkxk.kq jfgr djus ds fy, ml ea dks l k inkfz feyk;k tkrk gS
fdllgha nks inkfz ds uke o l = fyf[k, A

izu 5& ty dh LFkk;h dBkjrk ,oa vLFkk;h dBkjrk fdl ds dkj.k gkrh gS \

izu 6& ty D;k gS \

izu 7& euq; ,oa iM+ ikSka ea mifLFkr ty dh ek=k crkb, \

izu 8& 'kq ty fdl ikdfrd L=kr l s iklr fd;k tk l drk gS \

izu 9& l eph ty v'kq D;ka gkrk gS \ fyf[k, A

izu 10& [kfut ty fdl s dgrs gS \

izu 11& [kfut ty l s D;k ytk gS \

izu 12& 'kgjka ea ty dks fdl fof/k l s 'kq fd;k tkrk gS \

izu 13& ty ea fQVdjh D;ka Mkyh tkrh gS \

izu 14& dBkj ty fdl s dgrs gS \

izu 15& ty dk v.kkkj rFkk vk.kfod l = fyf[k, A

izu 16& v'kq ty ea ikbz tkus okyh v'kq; ka fdrus izkj dh gkrh gS \

izu 17& dqWfdrus izkj ds gkrh gS \ fyf[k, A

izu 18& dBkj ty ds ytk crkb; a \

y?kpnRrjh; izu 10] 4 vdl½

- izu 1& dBkj ty l s gkus okyh dkbz rhu eq; glfu; ka fyf[k, \
- izu 2& ty inkk.k ij fvli.kh fyf[k, \
- izu 3& ty dh vLFkk;h dBkjrk fdl dkj.k l s gkrh gS \
- izu 4& LFkk;h dBkjrk nij djus dh ijE; WV fof/k dk o.ku dhft, \
- izu 5& dSyxu ds iz;ks l s ty dh LFkk;h dBkjrk dks dS s nij fd;k tk l drk gS A fyf[k,A
- izu 6& ijE; WV fof/k }kjk ty dh dBkjrk nij djus dh fof/k ea iz;kr midj.k dk j[kkfp= cukb, \
- izu 7& ty dh dBkjrk fdu dkj.kka l s gkrh gS \
- izu 8& enty ,oa dBkj ty dh D;k igpku gS \
- izu 9& ty l Øe.k ds iz;kr dkj.k fyf[k, \
- izu 10& v/kkrqka ea vk;I hbM l s ty dh D;k vflkfØ;k gkrh gS \
- izu 11& /kkraqka ds vk;I kbM l s ty dh vflkfØ;k l e>kb; a \
- izu 12& 'kq ty ds xqk crkb;s \
- izu 13& vLFkk;h o LFkk;h dBkjrk D;k gS \ fyf[k, A
- izu 14& ty ds egRo iwz mi;ks fyf[k, \

nh?kz mRrjh; izu 15 vdl½

- izu 1& pkjbl fof/k }kjk dfre ty 'kq hdj.k dk ukelfdr fp= cukb;s \
- izu 2& ty ds jkl k;fud xqkka dks l e>kb;s o jkl k;fud fØ; kvka dk l ehdj.k Hkh fyf[k,A
- izu 3& LoPN ,oa ukelfdr fp= dh l gk;rk l s ty dh dBkjrk nij djus dh ijE; WV fof/k dk o.ku dhft, \
- izu 4& ty l j{k.k fdl s dgrs gñ \ ty l j{k.k ds mik; fyf[k, \

&&00&&

fojatd xqk %& fojatd dh ifjHkk"kk] fojatd inkFkZ Dykshu] I YQj MkbvkDI kbM
,oa fojatd pwk] fojatd fØ;k ds xqk ,oa mi ;ks A

vfr y?kqRrjh; izu ½ vad½

- izu 1& fojatd pwk dk iz,ks fdu diMla ds fojatu grq fd;k tkrk gS \
- izu 2& fojatd pwk dk vks]kfxd Lrj ij fuelzk fdu fof/k;la }kjk fd;k tkrk gS \
- izu 3& jške rFkk Au dh fojatu fØ;k ea dks&dks I h xS iz Ør gkrh gS \
- izu 4& fojatu fØ;k fdl s dgrs gS \
- izu 5& nsud thou ea Dykshu dk iz,ks dgla ij gkrk gS \
- izu 6& Dykshu ikuh I s fdl izdkj fØ;k djrh gS \
- izu 7& Cyhfpak ikmMj D;k gS \ bl s ds s cuk;k tk I drk gS \
- izu 8& I YQj Mkb&vkDI kbM }kjk fdl izdkj dk fojatu gkrk gS \
- izu 9& gkMktu ijkdI kbM fdl izdkj ds fojatd dk mnkgj.k gS \
- izu 10& ifrDykj ds : i ea fdl inkFkZ dk mi ;ks fd;k tk I drk gS \
- izu 11& fpdukbl fu"dkl u djus okys inkFkZ dks I s gS \
- izu 12& Cyhfpak ikmMj dk vk.kfod I = fyf[k, A
- izu 13& I rh ol=la ,oa dxt dk jak mMkus ds fy, fdl fojatd inkFkZ dk iz,ks fd;k tkrk gS \
- izu 14& Dykshu ok;q I s fdruk xqk Hkkjh inkFkZ gS \
- izu 15& Dykshu }kjk fojatu fdl jkl k;fud fØ;k ds rgr gkrh gS \
- izu 16& fdl fojatd }kjk dkey olrpk dk fojatu ugha fd;k tkrk gS A

y?kqRrjh; izu ½] 4 vad½

- izu 1& I YQj MkbvkDI kbM rFkk Dykshu dh fojatu fØ;k;vka ea dkbZ rhu vlrj

fyf[k, \

izu 2& fojatd pñkz dk fuekzk fdl idkj fd;k tkrk gS \

izu 3& fojatd pñkz D;k gS \

izu 4& Dykjh fojatu D;k gS \ le>kb;s \

nh?kz mRrjh; izu 15 vad½

izu 1& m|ks es l rñh diMka dh fojatu fØ;k dk o.ku dhft, A bl fof/k ea diMka dks & ¼½ diMs /kus dh l kMs ds foy;u vñ ½½ ifrDyñj foy;u ea D;ks Mçk;k tkrk gA

izu 2& Dykjh dh fojatd fØ;k dks vto';d jkl k;fud l ehdj.k ndj le>kb;A bl ea Åu rFkk jñke dk fojatu D;ka ugha fd;k tkrk gS \

izu 3& l YQj Mk;vñ kbM o Dykjh ds fojatd xñka dh rñyuk dhft, \

&&00&&

ijx.k ,oa fu"kpū %&¼½ ijx.k ,oa fu"kpū dh ifjHkk"kkj ijx.k dh fof/k; k; chtk.M dh jpuj fu"kpū dh fof/kj fu"kpū dk egRo vkfn A

¼½ chtk dh I jpuj ,oa vđj.k cht dh I jpuj chtk ds izkj] chtk ds vđj.kj vđj.k ds izkj chtk dk vk- egRo A

vfr y?kqRrjh; izu ½ vđ½

¼½ izu 1&ijx.k dh fØ;k fdrus izkj dh gkrh gS \

izu 2& Loijx.k fdl s dgrs gā \

izu 3& ij ijx.k fdl s dgrs gā \

izu 4& Loijx.k fdl izkj ds iqika ea ik;k tkrk gS \

izu 5& tUrj ijx.k fdl izkj dk gkrk gS \

izu 6& fufey iqī fdl s dgrs gā \

izu 7& iqīhī fdl s dgrs gā \

izu 8& fu"kpū ,oa nkgjk fu"kpū fØ;k ea vUrj fyf[k, \

izu 9& eDdk ds iqika ea fdl fof/k }kjk ijx.k gkrk gS \

izu 10& ij ijx.k I s dkbZ nks ykkk fyf[k; s \

¼½ izu 1&cht i= fdl s dgrs gā \

izu 2& Hkzkkk dk D;k dk;Z gS \

izu 3& cht fdl s dgrs gā \

izu 4& ml mRrd dk uke crkb, tks chtk.M dks v.Mk'k; I s tM+k gS \

izu 5& vđj.k ds i'pkr tM+ dk fueZk vđj ds fdl Hkx ds }kjk gkrk gS \

izu 6& iKkukki hī fdl s dgrs gā \ Qy dk fueZk fdl ds }kjk gkrk gS \

izu 8& eDdk ea fdl izkj dk vđj.k ik;k tkrk gS \

izu 9& vj.Mh ea fdl izkj dk vđj.k ik;k tkrk gS \

- izu 10& fu"kpū fdl s dgrs gā A fdl izkj ds ikāls ea f}fu"kpū ik;k tkrk gS \
- izu 11& vādj.k fdl s dgrs gā \
- izu 12& Hkaki kSk ds vk/kkj ij cht fdrus izkj ds gkrs gā \ fyf[k, A
y?kpnRrjh; izu 13] 4 vā½
- izu 1& vfu"kdttuu fdl s dgrs gā \
- izu 2& ijlx d.k dh jpuk dks fp= }kjk inf'kr dhft, A
- izu 3& nkqjk fu"kpū fdl s dgrs gā \
- izu 4& dhV ijfkr iqi ka dh fo'kSkkrk, a fyf[k, A
- izu 5& ijlx.k rFkk fu"kpū ea vlrj crkb, A
- izu 6& mijfkkfed rFkk v/kkkfed vādj.k ea vlrj fyf[k, A
- izu 7& ,d cht iRrh rFkk f}cht iRrh chtka ea vlrj fyf[k, A
- izu 8& v/kkkfed vādj.k dk o.kū dhft, A
- izu 9& chti=ka ds dkbz rhu dk;Z l e>kb; s \
- izu 10& vādj.k dh vko'; d ifjLFkr; ka dksū&dksū l h gS \
- izu 11& cht ds fofkkū vaka ds dk; k dks fyf[k; s \

nh?kz mRrjh; izu 15 vā½

- izu 1& l kfyo; ka ea ijlx.k fof/k dks l e>kb, \
- izu 2& fdlh ty ijfkr ikāls es ijlx.k fof/k dks l e>kb, \
- izu 3& ijlx.d.k D;k gS \ bl dh jpuk dks fp= cukdj fyf[k, \
- izu 4& pus ds chp dh jpuk fp= l fgr l e>kb; s \
- izu 5& chtk.M dh jpuk l e>kb, \
- izu 6& eDdk ds nkua dh l jpuk dk l fp= o.kū dhft, rFkk bl ea vādj.k dh fofkkū volFkkvka dk fp= cukb; s \

izu 7& dš s fl) djæks fd chtkš ds vødj.k ds fy, gok rFtk i kuh dh vto'; drk
gksh gš

izu 8& dhV ijfxfxr ,oa ok;q ijfxfxr i qika ea l knkgj.k vøvj Li"V dhft, \

izu 9& ijlx.k l s vki D;k l e>rs gš \ ;g fdrus izdkj dk gkšk gš \ ij ijlx.k
ds fofhklū ek;/e crkb;s \

izu 10& Lo ijfxfxr ,oa ij ijfxfxr i qika ea D;k vøvj gš \

izu 11& v/~~kk~~ed rFtk mi f/~~kk~~ed vødj.k fdl s dgrs gš \ pus ds chh ds vødj.k
dk izdkj crkrs gq l fp= o.kū dhft, A

&&00&&

i qih; i ksk Qy ,oa iknidg %&
 ¼1½ ,d i qih; i ksk ds fofHku Hkkx o/khZ ,oa tuu Hkkx
 ¼2½ Qy dh I jpuK Qyka dk oxhbj.k
 ¼3½ iknidg & ¼v½ ekyod h ¼c½ yx; feukd h ikni dgy dk vkfFkd
 egRo dgy i qi dk o.ku A

vfr y?kqRrjh; izu ½ vdl½

- izu 1& i fRr; ka ds iæ[k dk;Z fyf[k, A
- izu 2& Øq hQjh dgy ea fdl izdkj ds i qi gkrs gä \
- izu 3& fdl dgy ea i qi ea i pld jhuky ,oa ,d I ykx i pld j gkrs gS \
- izu 4& fu"kpud ds ckn fdl Hkkx Is Qy curk gS \
- izu 5& fdl dgy ds i kskka Is fudkVvu vj , Vksiu vkskf/k; kw i klr gkrs gS \
- izu 6& LQk/h Qy fdl s dgrs gä \
- izu 7& Qyka dks fdruh Jf.k; ka ea cka/k tk I drk gS \
- izu 8& I jI Qy fdl s dgrs gä \
- izu 9& eVj ds i qi ea tjk; q; kl fdl izdkj dk gkrs gS \
- izu 10& vkoRchth i kskka dks fdrus oxkz ea cka/k tk I drk gS \
- izu 11& I d ds [kkus ; kx; Hkkx dk uke fyf[k, \
- izu 12& VekVj fdl izdkj ds Qy dk mnkgj.k gS \
- izu 13& tho fokku 'kCn dk I cl s igys iz kx fdl oKkfud us fd; k \
- izu 14& o.kkZkkj fdl s dgrs gä \
- izu 15& i qih; ikni fdl s dgrs gä \

y?kpnRrjh; izu 10] 4 vdl½

- izu 1& I R; Qy ,oa vI R; Qy ea vrj Li"V dlft, \
- izu 2& Ijy ,oa I a Ør iRrh ea 3 vrj Li"V dlft, \
- izu 3& eñ yk rFkk miLFkkfud tMka ea vrj Li"V dlft, \
- izu 4& tMka ds fof'k"V dk;Z fyf[k, \
- izu 5& Ijy rFkk I a Ør viLFkkfud tMka ea vrj Li"V dlft, \
- izu 6& LQk/h ,oa vLQk/h Qyka ea vlrj fyf[k, \
- izu 7& Mñ rFkk uV ea vlrj Li"V dlft, \
- izu 8& ekyod h dgy ds nks ,d s iSkka ds uke fyf[k, ftul s jak ,oa jSkk iklr fd;k tkrk gS
- izu 9& fuEufyf[kr iSkka ds okuLifrd uke o muds dgy dk uke fy[kdj dgy dk vkfFkd egRo crkb, \ ¼1½ I jI ks ¼2½ eVj ¼3½ xMgy
- izu 10& rus ds dk;Z fyf[k;s \
- izu 11& ekyod h dgy ds folknd y{k.k fyf[k, ,oa bl dgy dk iqi I = fyf[k, \
- izu 12& fuEufyf[kr oLrq a fdu iSkka I s iklr gksh gS \
dRFkk] xkn] uhy] rEckdw
- izu 13& ,d ik: fid iqi dk dgy ukekfd r fp= cukb;s \

nh?kz mRrjh; izu 15 vdl½

- izu 1& yk; feukd h dgy dk okuLofrd Hkk"kk ea o.ku dlft, rFkk vkfFkd egRo crkb, \
- izu 2& xMgy ds iqi dk okuLifrd Hkk"kk ea o.ku dlft, \
- izu 3& ekyod h dgy ds folknd y{k.k fyf[k, \
- izu 4& Øñ hQjh dgy ds iqi h; y{k.kka dk o.ku dlft, bl dgy ds ieqk iSkka ds okuLifrd uke fyf[k, \

izu 5& iſi fy; kus h dgy ds folknnd y{k.kka dks fy[krs gq buds vkfFkd egRo
fyf[k,A iſi l= rFkk iſi fp= cukb;s \

izu 6& iſi Qy fdl s dgrs gā \ bl ds izkj fyf[k, A

&&00&&

¼½ & jksokgd thoka dk v/; ;u %& ,UV vehck] ePNj] gploe] Qhrkdfc
dk vkokl] vkokj] mRilu jks l s cpko ,oa vkfFkd egRo A

½ & dks'kdk rFkk ÅRrd %&

¼1½ dks'kdk dh ifjHkk"kk] l jpuK dk;Z A

¼2½ dks'kdk foHkkTU izdkj rFkk egRo A

¼3½ ÅRrd] ifjHkk"kk] izdkj rFkk dk;Z A

vfr y?kqRrjh; izu ½ vad½

izu 1& eul; ds 'kjhj ea ijthoh fdrus izdkj ds gksrs gS \

izu 2& ,.V vehck eul; dh vkll ea fdrus : i ea feyrk gS \

izu 3& ,.V vehck dkykbl eul; ds fy, fdl izdkj mi;ksxh gS \

izu 4& ,.V vehck ftathofyl eul; ds fdl Hkkx ea ijthoh ds : i ea jgrs gS

izu 5& eyfj;k ijthoh ds ikSkoka ds uke fyf[k, \

izu 6& gploe] fdl vak ea ijthoh ds : i ea jgrk gS \

izu 7& ,.V vehck eul; ds 'kjhj ea dku l k jks mRilu djrk gS \

izu 8& eD[kh }kjk Qsyus okys jks dk uke fyf[k, \

izu 9& eul; ea lysk dk izdkj fdl ds }kjk gsrk gS \

izu 10& flXuV fjaK volFkk dgka ik;h tkrh gS \

izu 11& ijthoh fdl s dgrs gS \

izu 12& dks'kdk dh [kkt l oñ Fke fdl us dh Fkh \

izu 13& dks'kdk 'kcn dh ifjHkk"kk fyf[k, \

izu 14& eul; dh dks'kdk ea fdrus Økekd ke ik;s tkrS gS \

izu 15& l el ñh dks'kdk foHkkTU ds nks egRo fyf[k, \

izu 16& v)ñ ñh dks'kdk foHkkTU l s gea D;k ykik gS \

- izu 17& rplZ rUrq ds dk;Z fyf[k, \
- izu 18& tUrq ,oa i kka ds dkf'kdk folhktuka ea ,d egRo i wZ vUrj crkb;s \
- izu 19& Ård fdl s dgrs gâ \
- izu 20& Årdka dks fdrus oxkâ ea ck/k x;k gS \
- izu 21& jDr ,oa yl hdk fdl izkj ds Årdka ds mnkgj.k gS \
- izu 22& ,fi Fkfy;e Ård ds dk;Z fyf[k, \
- izu 23& etbVkdKf.M;k dks dkf'kdk dk ÅtkZ xg D;ka dgrs gâ \
- izu 24& fdl dkf'kdk vad dks vkrh Fkfy;ka ds uke l s tkuk tkrk gS \

y?kpnRrjh; izu 18] 4 vad½

- izu 1& eyfj;k l s jkdFkke ds mik; fyf[k,A
- izu 2& Qhrkdfc D;k gS \ bl ea gkus okys jkx dks fyf[k;A
- izu 3& lykTefM;e dh eq; tkfr;ka ds uke o muea gkus okys Toj ds uke fyf[k,A
- izu 4& xky dfe ¼,ldfjl ½ l s fdl izkj cpk tk l drk gS \
- izu 5& ,.V vehck l s gkus okys jkx l s cpus ds fy, D;k&D;k mik; fd;s tk l drs gâ \
- izu 6& efD[k;ka }kjk QSyus okys jkxka ds uke fyf[k, vlg crkb;s fd efD[k;ka l s fdl izkj cpk tk l drk gS \
- izu 7& eyfj;k ijthoh ds thou pØ dk dny fp= cukb;A
- izu 8& jkbckl kē dh l jpuK l e>kb;A
- izu 9& etbVkdKf.M;k dh l jpuK rFkk dk;Z fyf[k;A
- izu 10& dkf'kdk folhktu dh ifjHkk'kk fyf[k,A
- izu 11& RNA rFkk DNA ds nks&nks dk;Z fyf[k,A

- izu 12& gn;d išk dh jpuk fyf[k,A
- izu 13& xqk l=ka ij fvli.kh fyf[k,A
- izu 14& l el =h folhktu dk egRo fyf[k,A
- izu 15& v)l =h folhktu dh ikQst volFkk dh mi volFkkvka ds uke fyf[k,A
- izu 16& tho nð; ea fdl izkj dh xfr ikbz tkrh gS \ fyf[k, A
- izu 17& ejfjou išk dh jpuk dk l fp= o.ku dhft, \ ;s išk dgka feyrh gS \
- izu 18& l a kxh Ård fdl s dgrs gā \ bl ds izkj fyf[k, A
- izu 19& rf=dk Ård dh l jpuk fyf[k,A
- izu 20& v)l =h folhktu dk egRo fyf[k,A
- izu 21& ,d ik: fid tUrq dks'kdk ds fofhku vo;oka dks ukefdr fp= }kjk inf'kr dhft,A
- izu 22& xkWhdk; dh jpuk ,oa dk;kā dk l fp= o.ku dhft,A

nh?kz mRrjh; izu 1/5 vad½

- izu 1& gploel dgka ik;k tkrk gS \ bl dk folr r o.ku fyf[k, A
- izu 2& D; yDI o ,ukQyht ePNjka ds vM} yokz o l; ik volFkkvka ea vlrj fyf[k,A
- izu 3& dny ukefdr fp=ka ds }kjk v)l =h folhktu ds l e; xqkl =ka ea gksus okys ifjorZka dh fofhku volFkkvka dks n'kkb; A
- izu 4& l el =h folhktu dks ukefdr fp= l fgr l e>kb; A
- izu 5& l = ,oa v)l =h folhktu ea vrj crkb,A
- izu 6& Ård fdl s dgrs gā \ Ård ds fofhku izkjks ds uke fyf[k, A
- izu 7& dks'kdk dk ,d LoPN ukefdr fp= cukb;s rFkk iR; d vx dk ,d&,d dk;l fyf[k,A

&&00&&

I R; vI R; fyf[k, %&

izu 1& feDI h I k/kkj.k e'khu gS A

izu 2& oD; e Dyhuj diMka dk /ky I kQ djus ds fy, mi ;lx ea yk; k tkrk gA

izu 3& dph ,d nksjk mRrksyd gS A

izu 4& iFoh ry ij ok;q dk nkc dk eku 1013961 MkbU ifr oxL I eh gkrk gA

izu 5& Mks gq fi.M ij utps dh vktj m/okZkj cy dk;Z djrk gS A

	¼½		½¾
I½	difyx	a½	mRrksyd
II½	LiHM ekVj	b½	nD
III½	I jkrk	c½	vkj-i h-, Q-
IV½	i z kl	d½	feDI h
V½	mRlyo.krk	e½	Hkkj

&&&00&&&

bdkb&02

m"ek] pkyu] l ogu] fofdj.k] vknrk] 'kqdrk ,oa deh

cgfodYih; izu

izu 1& ,d dSykh] m"ek dh ml ek=k dks dgrs gā tks 'kq ty dk rkieku c<k nrh gS &

¼I½ 1° C ¼II½ 2° C ¼III½ 3° C ¼IV½ 4° C

izu 2& ;fn cQl vj ued dks Øe'k% 2% vujkr ea feyk;k tk, rks feJ.k dk rki gkxk &

¼I½ & 10° C ¼II½ & 20° C ¼III½ & 5° C ¼IV½ 0° C

izu 3& jfQztjVj ea mi ;k ea vkus okyk izkhrd gS &

¼I½ veku;k ¼II½ I YQj MkbvkDI kbM

¼III½ feFkkby DykjkbM ¼IV½ Qh; kkh

izu 4& jfQztjVj ds njokts [kjh j[kus ij dejs dk rkieku gkxk &

¼I½ de ¼II½ T;knk ¼III½ dkbz vlrj ugha ¼IV½ buea l s dkbz ugha

izu 5& og oLrq tks vius ij vkifrr l EiwkZ m"eh; fofdj.k dks vo'kks"kr dj yrh gS ml oLrq dks dgrs gā &

¼I½ d".k oLrq ¼II½ l qkek oLrq ¼III½ ukjn oLrq ¼IV½ l k/kj.k oLrq

l R; vl R; fyf[k, %&

izu 1& dkqjk dy dkj [kks okya 'kqjka ea xkoka dh vi{kk de gkxk gS A

izu 2& ek] e ea Hkkoh ijhoru dks tkuus ds fy, tyok; q ijh{k.k on'kkyk, a dke ea vkrh gā

izu 3& l epz ds l ehi oriz LFkku dh ok; q vl; LFkku dh vi{kk de vknz jgrh gā

izu 4& l j gEQh Msh us ,d l j{kk }hi dh jpuk dh Fkh A

izu 5& fofdj.k ea fd l h izdkj ds ek;/e dh vko'; drk gkxh gS A

I gh tkMh cukb, %&

I½ I k; fdy ia
II½ 1 Fkel
III½ ty
IV½ m"ek
V½ ok; q

%c½

a½ 100 iMM ty dk rki
b½ 212° F %DoFkukd½
c½ v/ke pkyd
d½ l øgu
e½ ;kf=d Åtkl

&&&00&&&

bdkb&03

/ofu

cgfodYih; izu

izu 1& ?kfM+ ka dh l pZ dh xfr bl dk mnkgj.k gS &

¼½ I kkl; vtorl xfr ¼II½ vtorl xfr

¼III½ <kyu xfr ¼IV½ I jy vtorl xfr

izu 2& /ofu ds l EihMu ea vf/kd gkrk gS &

¼½ ?kuRo ¼II½ vki f{kcd ?kuRo ¼III½ vk; ru ¼IV½ fojy ?kuRo

l R; vl R; fyf[k, %&

izu 1& rjx ox = vkofRr x rjx yckbl gkrh gS A

izu 2& Jo.k dh l onuk J0; rk dgykrh gS A

mfpr l cak tkfM+s %&

¼v½

¼c½

I½ d.kz iVy

a½ l a hMu

II½ vuqLFk rjxs

b½ ckW gh

III½ okn; ; a=

c½ ek/; e

IV½ OkuksxtQ

d½ , Mhl u

&&&00&&&

bdkb&04

jkl k; fud l a kx ds fu; e

oLrfu"B izu

izu 1& jkl k; fud l a kx ds dgy fu; e gkrs gâ &

¼I½ 3 ¼II½ 5 ¼III½ 8 ¼IV½ 2

izu 2& ,d ; kxd ea ,d l eku rlo l nð vuqkr ea l a þr gkrs gâ &

¼I½ vfuf'pr ¼II½ flFkj ¼III½ vflFkj ¼IV½ fuf'pr

izu 3& CO₂ ea dlcú ds 12 Hkkx vkðl htú ds Hkkx l s tMfs gâ &

¼I½ 16 ¼II½ 32 ¼III½ 24 ¼IV½ 64

izu 4& xq.kr vuqkr ds fu; e ifrikfnr fd; k &

¼I½ U; Wu ¼II½ MkyVu ¼III½ ySMkV ¼IV½ yokf'kl s

l R; vl R; fyf[k, %&

izu 1& nð; ds vfoukf'krk dk fu; e yokf'kl s us ifrikfnr fd; k A

izu 2& nð; dls u rls mRl lu fd; k tk l drk gS u rls u"V fd; k tk l drk gS A

izu 3& 2H₂ + O₂ → 2H₂O l eh dj.k l rfy r ugha gS A

mfrpr l cak tkM+s %&

	¼v½	¼c½
I½	cthf; l	a½ xSyl kj fu; e
II½	vk'n'kz xS	b½ vk; ru ea l jy vuqkr
III½	,d gh rki vkj nkc	c½ l a kstu Hkkj
IV½	8 ijek.kq l q; k	d½ vkðl htú

&&&00&&&

bdkb&05

foys rk

oLr(u"B izu

- izu 1& ;g l oħk rjy voLFkk ea jgrs gā &
¼½ foyk;d ¼II½ foys ¼III½ foy;u ¼V½ l rlr foy;u
- izu 2& foys rk xqkuQy dks fuEu dkjd iħkkfor ugha djrk &
¼½ rki ¼II½ nlc ¼III½ foys o foyk;d dh ikdfr ¼V½ izdk'k
- izu 3& l kcp dk fuekzk ol k dh fØ;k fuEu l s djkdj fd;k tkrk gS &
¼½ vEy ¼II½ {kkj ¼III½ yo.k ¼V½ buea l s dkbz ugha
- izu 4& fl Yoj DytkbM dh ty ea foys rk gkrh gS &
¼½ de ¼II½ vf/kd ¼III½ 'kk; ¼V½ dkbz vlrj ugha

l R; vl R; fyf[k, %&

- izu 1& l kcp mPprj ol h; vEyka ds l kSM;e yo.k gS A
- izu 2& vekfu;k gkbMkDI kbM icy {kkj gS A
- izu 3& l k/kj.k ued ea CaCl_2 o MgCl_2 vkfn v'kq) ; ka gkrh gS A

&&&00&&&

bdkb&06

ty % ,d egRoinkz ;kfxd

oLr(u"B izu

izu 1& I cl s 'kq ty gkrk gS &

¼¼ dqw dk ty ¼II½ gSMiä dk ty ¼III½ o"kkz dk ty ¼V½ unh
dk ty

izu 2& uy ds ikuh ea l kcp vf/kd >kx nrk gS D;kid ;g gkrk gS &

¼¼ dBkj ty ¼II½ enq ty ¼III½ l kel; ty ¼V½ yo.kh; ty

izu 3& I kSM;e ,Y; pfu;e fl yhdV dk 0;kifjd uke gS &

¼¼ ijd; fVM ¼II½ ,Y; feuk ¼III½ I kSM;e dkckuV ¼V½ I kSM;e
ft; kykbV

I R; vl R; fyf[k, %&

izu 1& ftl ty ea yo.k ugha gkrs ml s dBkj ty dgrs gA A

izu 2& LFkk;h dBkjrk DykjbM o l YQV ds yo.kka ds }kjk gkrk gS A

izu 3& ihus ds fy, vR; kf/kd enq ty mRre ugha gkrk A

&&&00&&&

bojato

bojato

obrazci izu

izu 1& og inkfz tks jakhu inkfz dks jakghu inkfz ea cny nrs gfi mlga dgrs g&
I/2 bojato II/2 bojato III/2 eukjato IV/2 eukjato

izu 2& ikf'k; e ijeuv ds bojato g& &
I/2 vip;u II/2 vkDI hdkjd III/2 vukDI hdkjd IV/2 p;ki p; d

izu 3& I kfm; e ckl YQkbV fuEu vip; d bojato ds Jskh ea vkrs gfi &
I/2 dBlj II/2 Ijfk III/2 enq IV/2 dkey

izu 4& bojato pkl dgykrk g& &
I/2 CaCoClb₂ II/2 CaCl₂ III/2 Ca (OH₂)₂ IV/2 HClO

mfr I ckl tkf+s %&

I/2	II/2	III/2	IV/2	a/2	b/2	c/2	d/2								
I/2	I p l dk izk'k	II/2	I kfm; e gkbi kDyjk kbV	III/2	gkbMkst u ijkdI kbM	IV/2	Dykfju	a/2	bojato pkl	b/2	ikdrd bojato	c/2	'kDr'kkyh bojato	d/2	dkey bojato

&&00&&&

bdkb&08 ¼½
 ijx.k , oa fu"kp

oLr"u"B izu

- izu 1& ijxdkk ds vlnj fufeŕ gksr gā &
 ¼½ v.Mk'k; ½ v.Mk.kq ⅓ ijxd.k ¼½ Hwki ksk
- izu 2& ftu iŕi ka ea L=hdŕ j igys ifjiDo gksr gā bl voLFkk dks dgrs gā &
 ¼½ iŕL L=hi Dork ½ iŕL iexiDork ⅓ ifjiDork ¼½ iŕi
 ifjiDork
- izu 3& bl ifŕ;k }kjk iŕkka dh ubz tkfr mRiUu gksr gS &
 ¼½ Loi jx.k ½ ijijx.k ⅓ ok; qijx.k ¼½ tŕr qijx.k
- izu 4& iŕ;ŕl chtk.M bl ds }kjk chtk.Mkl u ls tMk jgrk gS &
 ¼½ chtk.Mo.k; ½ chtkoju ⅓ iŕi kl u ¼½ chtk.Molr

mfpr l cāk tkŕMŕs %&

	¼½		½
I½	f}fyakh iŕi	a½	dhV ijx.k
II½	iŕiny ¼xhu½	b½	jŕlyŕl ;k
III½	l cl s cMk iŕi	c½	ifjiDo v.Mk'k;
IV½	Qy	d½	uj rFkk eknk

,d 'kŕn ea mRrj nŕft, &

- izu 1& chtk.M ds ckg; vkj.k dks D;k dgrs gā \
- izu 2& iŕkka ea f}fu"kp dk [kkst fdl us fd;k A

izu 3& uj; Medknflkn dh iFke dks'kdk D;k gS \

izu 4& Hkixr ikska ds iqika dk ,d mnkgj.k fyf[k, A

&&00&&

bdkb&08 ¼c½

chtka dh l jpk rFkk vđj.k

oLrřu"B izu

izu 1& cht ftl ea ,d NkV/k iKkk bl : i ea jgrk gS &
¼I½ Hkuki kSk ¼II½ Hkuk ¼III½ chti= ¼IV½ eykđj

izu 2& ftu chtka ea Hkuk iKk ugha ik;k tkrk mlga dgrs gS &
¼I½ Hkuki kSkh cht ¼II½ vHkuki kSkh cht ¼III½ ,d chti=h cht ¼IV½
f)chti=h cht

izu 3& ;g eykđj rFkk chti= ds chp jgrk gS &
¼I½ ikđj ¼II½ eykđj ¼III½ ikđj pky ¼IV½ chti= /kkj

izu 4& chtka ds vđj.k ds fy, vko';d ugha gS &
¼I½ ikuh ¼II½ vđl htu ¼III½ rki ¼IV½ dkcŰ MkbvkDI kbM

izu 5& bl ea v/kkkfed vđj.k gkrk gS &
¼I½ puk ¼II½ eVj ¼III½ eDdk ¼IV½ beyh

,d 'kCn ea mRrj nřft, &

izu 1& ;g ikđj pky ea cn jgrk gS A

izu 2& ;g lnb Hkfe ea ty dh vřj c<rk gS A

izu 3& bl iřØ;k dks u;s iKks ds fueZk gkus dh řØ;k dgrs gS A

izu 4& cht dk og Hkx tks olr l s fpi dk jgrk gS A

&&00&&&

bdkb&09 ^* ,oa ^c*

i qih; i kskj Qy

oLr(u"B izu

izu 1& xMgy bl dgy dk i kskk gS &

½ I kyud h ½ etyod h ½ Øt hQjh ½ i fi fy; kud h

izu 2& i p d j dks bl ds }kjk inf'kr djrs gS &

½ K ½ C ½ A ½ G

izu 3& tc iqi ds vak rhu ; k rhu ds xqkuQy ea yxs gks rts bl voLFkk dks dgrs gS &

½ iMfejl ½ Vbfejl ½ VVfejl ½ iMwfejl

izu 4& I rjk ds Qy] fuEukidr ea I s fdl izdkj dk gkrk gS &

½ ike ½ Mi ½ gS Li f j M; e ½ cjh

izu 5& flk.Mh ea ;g chtk.MU; kl ik; k tkrk gS &

½ I heklr ½ v{th; ½ vk/kjh; ½ bues I s dkbz ugha

izu 6& ftu Qyia dk fuekZk fcuk fu"kpud ds gkrk gS mlga ;g Qy dgrs gS &

½ fu"kspr Qy ½ vfu"kd Qy ½ I R; Qy ½ I jy Qy

izu 7& eykdj I s fufeR tM+ dgykrh gS &

½ i k Fked tM+ ½ f}rh; d tM+ ½ r'rh; d tM+ ½ viLFkkfud tM+

izu 8& i ksk ds og Hkx tks Hkfe ds vlnj gkrs gS dgykrk gS &

½ tM+ ½ ruk ½ Lrllkey ½ ok; oh; ey

,d 'kcn ea mRrj nift, &

izu 1& tM+ ds ftl Hkx ea ey jke ugha ik; s tkrj ml s D; k dgrs gS \

- izu 2& vxj ds iks ea ruk fdl : i ea ifjofr7 glrs gš \
- izu 3& ftl Qy ea olr ugha ik;s tkrs ml s D;k dgrs gš \
- izu 4& vukukl fdl izlkj ds iqiØe dk Qy gš \
- izu 5& fu"lpu i'pkr clg;nyj ny fxj tkrs gš mDr voLFkk ea dgykrk gš
- izu 6& evj fdl dgy dk iksk gš \

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bdkb&10 ^v* ,oa ^c*
 jksxokgd thoka dk v/; ; u
 , oa
 dks'kdk rFkk Ård

oLrfu"B izu

- izu 1& fuEu jks ,d ih<t l s nlt js ea xeu djrs g& &
 ¼ eyfj;k ¼ gheksQfy;k ¼ ppd ¼ Qkbyfj;k
- izu 2& fuEukidr jks ikskd rRoka dh deh l s gkrk g& &
 ¼ fjdVt ¼ o.kk/krk ¼ MkbfcVt ¼ isp'k
- izu 3& Qhrkdfe dk oKkfud uke g& &
 ¼ ,Ul kbykVkek M; M;Muyh ¼ Vrfu;k l ksy; e
 ¼ okmpfj;k ¼ buea l s dkbz ugha
- izu 4& fuEu jks ePNjka ds }kjk Qsyrsg& &
 ¼ Qkbyfj;k ¼ Y;ndfe;k ¼ Mk;fcVt ¼ Mk;fj;k
- izu 5& ;g d'ks dh ikf.k;ka dh vkgkjuky dk vkUrfjd ijthoh g& &
 ¼ xkydfe ¼ ,.Vvelck ¼ ikdZ Vi okeZ ¼ buea l s dkbz ugha
- izu 6& ,d leku dks'kdk,a leq cukdj bl dk fuekZk djrh g& &
 ¼ r= ¼ vx ¼ Ård ¼ vxr=
- izu 7& iR;d tho 'kjh ds dks'kdk ds vlnj ik;k tkus okyk n; dgykrk g& &
 ¼ lkbVkykTe ¼ U;Dy;kykTe ¼ ikVkykTe ¼ gkbykykTe
- izu 8& rf=dk r= dh fD;kRed bdkbz dks dgrs g& &
 ¼ MsMku ¼ U;jku ¼ ,Dtku ¼ xOY;k

,d 'kCn ea mRrj nlf't, &

izu 1& euq; dh vuokf'kd l jpk ea xMeMk l s gksus okyh ,d chetjh dk uke
fyf[k, A

izu 2& euq; ds narka ea ik;fj;k uked jks fdl ijthoh l s gkrk gS \

izu 3& fdl oKkfud us dks'kdk dh [kst dh Fkh \

izu 4& i kFkfed izkj ds dks'kdkvla ds D;k uke gS \

izu 5& dks'kdk dk 'kfDrxg fdl s dgrs gS \

izu 6& D.N.A. dk ijk uke D;k gS \

izu 7& gn; ds i\$th;ka ea fdl izkj dk l adpu gkrk gS \

&&&00&&&

ueukFkz izu

izu 1& ijE; fV fof/k dk jkl k;fud uke D;k gS \ %K% Lej.k

izu 2& ijE; fV fof/k }kjk LFkk;h dBkjrkd s nj djks \ %U% l e>uk

izu 3& ijE; fV ;æ dk Li"V ukefdr fp= cukb;s \ %S% fp= cuk

izu 4& ijE; fV ;æ }kjk LFkk;h o vLFkk;h dBkjrkd nj dh tkrh gS bl ds egRo
dks Li"V dlf't, A %A% fo'y\$'k.k

&&&XX&&&

IkkB₃-kØEk
fOkKkuk ds RkRok
 d{kk 11 Okha
bdkbz Okkj vad fOkHkkTKuk

bdkbz	fOk" k₃ OkLRkq	fu/kkTjr vad
1-	IknkFkZ ds LkkEkkU₃ k Xkq k& 1- vkdZEkmhTk dk fLk) kRk RkSj Uks OkkYkh OkLRkq agkbMIBEkhVj] Okk ₃ kEkaNYkh ₃ k nkCk , Oka Ekks.kEk LkEkaKh Ikfj fLFkFRk ₃ kka Lks LkEkaKA 2- LkjYk Ek' khUka dh Ikfj Hkk"kk , Oka EkGRok nSukd TkHOkUk Eks Ek' khUk mlk ₃ kksk Eka vkUks OkkYkh Ek' khUka OkD ₃ kEik DYkhUkj] Okkf' kRk Ek' khUka	15
2-	Å"Ekk& 1- fOkf' k"V Å"Ekk Ok XkqRk Å"Ekk dk Ikj fHkd Kkuk] DOkFkukad] XkYkukad] , Oka buk Ikj nkCk , Oka v' kfj) ₃ kka dk IkHkkOk IkS kj dQj dk fLk) kRk , Oka dk ₃ kZ fOkf/k & 2- Å"Ekk dk LkPkj .k] Å"Ekk dk LkPkj .k dh fOkf/k ₃ kka PkkYkuk] LkEkgu] , Oka fOkfdj .k] FkEzLk IYkLd dk fLk) kRk , Oka dk ₃ kZOkf/kA 3- vkæRkk& 'kqdrkk] UEkH] vIkS{krk vkæRkk ds mlk ₃ kksk] IkHkkOk	
3-	/Okfuk& Ikfj Hkk"kk] /Okfuk Rkj xkka dk LkPkj .k] EkkukOk dkuk dh jPkuk , Oka /Okfuk dk mRlkknuk] 'kksj , Oka Lkkxkhrkd /Okfuk] Lkkxkhrkd /Okfuk ds vfHkYk{k .k] /Okfuk Ikniik .k A	
4-	jkLkk₃ kfukd Lkqkksk ds fuk₃ kEk& æ0 ₃ k ds LFkff ₃ kRok dk fuk ₃ kEk] fLFkj vUkqkRk dk fuk ₃ kEk] Xkq. kRk vUkqkRk dk fuk ₃ kEk] vkfddh A	
5-	foys rk xqkuQy& i fj Hkk"kk] foys rk] xqkuQy ds mi ; ksx , oa dkjdA	
6-	TKYk& TKYk ds IkNfRkd LkxkRk] Ekinq , Oka dBkj TKYk TKYk dh dBkj Rk ds Ikzlj , Oka nij djUks dh fOkf/k A	

- 7- **f0kj ātkd Xkq k&**
 f0kj ātkd dh Ikfj Hkk"kk] f0kj ātkd lknkFk& DYkkj huk] LkYQj MkbvkDLkkbM , Oka f0kj ātkd Pkw k] f0kj ātkd fØ,kk ds Xkq k , Oka mlk, kkkkA
- 8- **lkj kXk. k , Oka fUK"KPKUK**
- 1- lkj kXk. k , Oka fUK"KPKUK dh Ikfj Hkk"kk lkj kXk. k dh f0kf/k, kkaCkhTkk. M dh j PKUkk fUK"KPKUK dh f0kf/k] fUK"KPKUK dk EkgROkA
 - 2- CkhTka dh Lkj PKUkk , Oka vadg. k] CkhTk dh Lkj PKUkk] CkhTka ds lkzlkj] CkhTka ds vadg. k] vadg. k ds lkzlkj] CkhTka dk vkfFkd EkgROk A
- 9- **lkqIkh, k lkkSks QYk , Oka lknlk dYk&**
- 1- , d lkqIkh, k lkkSks ds f0kfHkUk HkkXk Ok/khZ , Oka TkUk HkkXk
 - 2- QYk dh Lkj PKUkk] QYka dk OkkhZdj. kA
 - 3- lknlk dYk&1- EkkYkOkk.kh 2- Yk, kjeUkk.kh lknlk dYk dk vkfFkd EkgROk] dSrk lkqIk dk Ok. kzkA
- 10- **jkXkOkkgd TkhOkka dk v/,k, kUk& +**
- 1- , UVvEkhCkk EkPNj] gpd OkEkZ QhRkkñfEk dk Cka, k vkdkj] mRlUk jkXk Lks CkPkOk , Oka vkfFkd EkgROkA
 - 2- dks' kdk RfFk ÅRkd
 - 1- dks' kdk dh Ikfj Hkk"kk RfFk dk, kz
 - 2- dks' kdk f0kHkTkUk lkzlkj RfFk EkgROk A
 - 3- ÅRkd] Ikfj Hkk"kk] lkzlkj RfFk dk, kA

bdkbz ¼1½

IknkFkZ ds LkkEkkU, k Xkq k

¼1½ vkdZEKMHtk dk fLk) kRkj RkS Uks OkkYkh OkLRkq æ gkbMREkhVj] Okk, kqkMYkh, k nkCk , Oka EkkS, kEk LkEkdLh Ikfj fLFkFRk, kka Eka LkEkaKA A ½½ Lkj Yk Ek' khUka& Lkj Yk Ek' khUka dh Ikfj Hkk"kk , Oka EkgROk] nSUKd TkhOkuk Eka mlk, kkkk Eka vkUks OkkYkh Ek' khUka OkD, kñk DYkhUkj] Okdf' kkk Ek' khUk A

vH, kklkFkZ Ik' u ¼k. M&1½

vFRk Yk?kq mRRkj h, k

- 1- , Ek-ds, Lk- ¼M.K.S.½ Ik) FRk Eka vkIkS{kD ?kUROk dk Ekk«kd Ckrkkb, kS
- 2- , d HkkjghUk XkqCkjs Eka 500 XkkEk TkYk Hkj k gS TkYk Eka bLkdH Hkkj Ckrkkb, kS
- 3- TkCk OkLRkq dk Hkkj mNkYk Lks vf/kd gkRkk gS Rkks OkLRkq æOk Eka fdLk IkZkj RkS Rkh gS
- 4- RkS Rkk gYk fUkdYLkUk gkbMREkhVj] RkS IkHk dh RkYk dh RkYkUkk Eka fdLk Ekk/, kEk Eka vf/kd MkkkKA
- 5- YkdMh dk , d VpMk TkYk Eka Ikj k Mqkdkj j [kk Xk, kk gS VpMs Ikj TkYk dk mR{kdk VpMs ds Hkkj dh vIkS{k fdLk IkZkj gkdkk\
- 6- LkEkaeh f' kYk [kMka dk vf/kdRkj HkkXk LkEkae ds vñj D, kka jgRkk gS
- 7- vkdZEKMHtk ds fUk, kEkkUkq, kkj vkIkS{kD ?kUROk KkRk djUks dk Lkuk Ckrkkb, kS
- 8- BkLk dks æOk Eka MqkUks Ikj mLkds Hkkj Eka D, kk Ikfj OkRkZk gkdkk \
- 9- nñ/kEkkIkj] 'kq) nñk dh vIkS{k fEkYks nñk Eka fdLk IkZkj MkkkKA
- 10- Okk, kqkMYk Eka dkSk&dkSk Lkh IkEkaq' k XkS, ka gS
- 11- IkFOkh RkYk Lks ÅPkk mBUks Ikj Okk, kq ds ?kUROk Eka D, kk Ikfj OkRkZk gkRkk gS
- 12- , kfn CkS kEkhVj dks HkñEk ds vñj vU, k [knkUk Eka Yks Tkk, ka Rkks mLkds Ikj ds RkYk Ikj D, kk IkHkkOk IkMkKk\
- 13- LkkEkkU, k RkIk] LkEkae RkYk Ikj Okk, kq nkCk dk EkkUk Ckrkkb, kS
- 14- , kfn Lkk/kkj . k CkS kEkhVj dh UkYkh Eka IkHk dh dñ Ckms IkFOk"V dj k nh Tkk, ks Rkks UkYkh Eks Ikj ds RkYk Ikj D, kk IkHkkOk IkMkKk\

- 15- QkFVZk Okk_kpKCKEkKkEkh Eka dKSk&Lkk lknkFkZ Hkjk Tkrkk gS.
- 16- CkS_kEkKhVj ds lkkB Eka vPkKkUkd fxkjKkV fdLk CkRk dk LkKkd gS.
- 17- fckUk kEk ds Eknn Lksvf/kdRkEk fdRkUkh ÅPkKbZ Rkd lkkUkh lkgPkk_kk Tkk LkdRkk gS.
- 18- Okk_kkKk/Yk dh OkkLRkFkd ÅPkKbZ fdRkUkh gkRkh gS.
- 19- lKfOkh ds RkYk Lks ÅPkK mBUks lKj Okk_kq ds ?kUkRok Eka D_kk lKfj OkRkUk gkRks gS.

Yk?kqRRkj_h_k lK' Uk &

- 1- æOk mNkYk dk D_kk vFkZ gS.
- 2- lkkUkh Eka RkS_Rks LkEk_k EkUkq_k dks gkFk&lKj D_kka PkYkkUks lKMRks gS.
- 3- vkdZEKfMTk dk fLk) kRk D_kk gS.
- 4- RkS_Rks gq fgEk [kA/ dk CkgRk dEk HkkXk lkkUkh ds Ålkj fn [krkk gS D_kka
- 5- æOk Eka RkS_YkUks lKj fdLk OkLRkq ds HkKj Eka dEkH gkRkh gS_kg dEkH fdRkUkh gkRkh gS.
- 6- mRlKYkkOkUk dæ fdLks dgRks gS.
- 7- RkS_Uks OkkYkh OkLRkq lKj dKSk&dKSk Lks CkYk dk_kZ dj Rks gS.
- 8- RkS_Rkh gPZ OkLRkq Eka HkKj Ukgha gkRkA LkEkÖkbb_kS.
- 9- _kfn fdLkH fik.M dks æOk Eka lkwkRk%MqkkUks lKj mRlKkCk CkYk OkLRkq ds HkKj ds Ckj kCkj gks Tkk_kS OkLRkq vKj æOk ds vKlKs {kd ?kUkRok Eka D_kk LkKkZk gkRk\
- 10- lkkUkh ds TkGkTk dh RkYkh Eka HkKjh LkEkKkUk D_kka j [kk TkrRkk gS.
- 11- gkbMREkhVj dh Mh/h YkKh D_kka gkRkh gS.
- 12- nK/kEkKkKk dh vLkEkFkRkk D_kk gS fykf [k, \
- 13- YkKgs dk cuk TkGkTk lkkUkh Eka RkS_Rkk gS TkCkfd YkKgs dh dhYk lkkUkh Eka MhK TkrRkh gS bLkdK D_kk dkj .k gS.
- 14- D_kk dkj .k gS fd CkQZ dh CkMh&CkMh PkêkUka lkkUkh Eka RkS_Rkh gS.
- 15- nkCk dk vFkZ LIK"V dhfTk, \
- 16- EkKs_kEk fOkKkUk Eka Okk_kkKk/YkK_k nkCk dk EkKkd D_kk gS.
- 17- _kfn CkS_kEkKhVj dh UkYkh ds Ålkj Nn dj nRks D_kk gkRk\
- 18- _kfn CkS_kEkKhVj dh UkYkh dks fRkj Nk ÖkPk fn_kk Tkk_ks Rks D_kk gkRk\

- 19- Pkk₃ dh d₁kykh ds <DdUk Eka fNæ D₃kka gk₁kk gS.
- 20- ÅPkkbz ds LkkFk Okk₃ k₁ka/Ykh₃ k nkCk Eka fdLk Ikzdkj Ikfj OkRkZk gk₁kk gS.
- 21- ₃fn Ck₃ k₁khVj ds LrEHk ij fUkEUKfYkf [kRk Ik₁kkOk IkM₃-Rkks mLkLks Ekks₃KEk dh Ck₃js Eka D₃kk Lk₁d₁kk fEKYkRkk gS.
- v- Ikj k LRk₁kk dk /khj &/khj s UkhPks fXkj Ukk
- Ok- Ikj k LRk₁kk dk 'kh?kRkkIk₁kkZd UkhPks fXkj Ukk
- Lk- Ikj k LRk₁kk dk fLFkj jgUkk
- 22- Lkj Yk Okk₃ k₁pkCkEkklkh ds d₁kbZ RkhUk nksk fYkf [k,
- 23- Lkj Yk Okk₃ k₁pkCkEkklkh Eka Ikj s dk mlk₃kk₁ D₃kka dj Rks gS.

nh?kzmRRkj h₃ k Ik' Uk

- 1- vkdZEKfMTk dk fLk) k₁kk fYkf [k, RkFkk LkR₃kkfIkRk djUks ds Ikzkk₁kk dk Ok. k₁kk dhfTk, \
- 2- Rk₃ Rkh g₁pZ OkLRkq ds Lk₁kk₁YkUk dh 'kRk₃ fYkf [k, \
- 3- nk₁/kEkklkh dk UkkEkka₁dRk fP₁kk CkUkkb₃ks A bLkdh dk₃ k₁&fokf/k LkEkÖkkb₃ks RkFkk dk₃ k₁ LkHEk fYkf [k, \
- 4- fUkdYLUk gkbM₁Ek₁Vj }kj k fdLkh Bk₁kk dk vkIk₁{kd ?kUkRk KkRk djUks dh fokf/k] Lk₁kk]Ik₁kk.k RkFkk Xk. kUkk fYkf [k, \
- 5- n₁Ukd TkhOkUk Eka vkfdZEKfMTk ds fLk) k₁kk Ikj vk/kkfjRk nks mnkgj .k nhfTk, \
- 6- /kRkq ds V₁pMs dk gOkk Eka Hkkj 5-9 XkkEk gS vk₁ mLkd vkIk₁{kd ?kUkRk 8-5 gS Rkks 0-8 vkIk₁{kd ?kUkRk OkYks æOk Eka mLkd Hkkj D₃kk gk₁kk\ mRRkj 53-9 XkkEk
- 7- , d EkUk₃ k 25 fdYkk₁kkEk Lks vf/kd Hkkj UkghamBk LkdRkka gOkk Eka mLk IkRFkj ds V₁pMs dk Hkkj D₃kk gk₁kk fTkLkds Okg Ikkuh Eka mBk LkdRk gS. IkRFkj dk vkIk₁{kd ?kUkRk 2-5 g₁ mRRkj &41-60 XkkEk
- 8- , d fUkdYLUk æOkEkklkh 0-6 vkIk₁{kd ?kUkRk OkYks æOk Eka mLkds fUk₁ÜP₁Rk fPkUg Rkd M₁kkRk g₁ fdRkq TkCk mLks TkYk Eka mLkh fPkUg Rkd M₁kkRka gSRkks ÅIkj PkdRkh Ikj 120 XkkEk CkV j [kUkk IkMRk gSRkks æOkEkklkh dk Hkkj KkRk dhfTk, \ mRRkj &180 XkkEk
- 9- fdLkh Bk₁kk dk Hkkj w RkFkk ?kUkRk d_1 gS fLk) dhfTk, fd d_2 /kUkRk ds æOk Eks bLks Ik₁kk₁% M₁kkUks Ikj mLkd vkHkkLkh Hkkj $w\left(1 - \frac{d_1}{d_2}\right)$ gk₁kkA

- 10- /kkRkq ds VpdlMs gOkk Eka Hkkj 17-22 XkkEk] TkYk Eka 15-12 XkkEk RkFkk fXYkLkj hUk Eka 14-49 XkkEk gS /kkRkq RkFkk fXYkLkj hYk dk vkIks{k d ?kUKROk KkRk dhfTk, \ mRRkj & /kkRkq, Oka fXYkLkj hUk dk vkIks{k d ?kUKROk ØEk' k% 8-2] 1-3
- 11- Vknj fLkYkh ds Ikz kkkk dk Ok. kzk dhfTk, \
- 12- Lkj Yk Okk ,kpnkCkEkklkh dh Lkj PkUkk , Oka fLk) kkk CkRkkb ,kA Lkj Yk Okk ,kpnkCkEkklkh ds nksk CkRkkb ,ks
- 13- , Uj kUkM CkS kEkhVj dk j[kfpk«k CkUkkdj Lkj PkUkk dk Ok. kzk dhfTk, bLk ,kæk dk D ,kk mlk ,kkkk gS

vH ,kkLkkFkz Ik' u ¼k. M&2½

vfrk Yk?kpnRRkj h ,k Ik' Uk &

- 1- ,kk«kd YkkHk fdLks dgRks gS
- 2- RkRkh ,k Js kh ds mUkkYkaka ds mnkj .k CkRkkb ,ks
- 3- vkn' kEk' khUk dh n{kRkk fdrkUkh gkklh Pkfg, \
- 4- Ek' khUk ds dk ,kz dk fLk) kkk fdLk fUk ,kEk Ikj vk/kkfj Rk gS
- 5- mRRkkykd Eka ,kfn Hkkj Hkqtk dh Yk«kzbz vk ,kke Hkqtk dh Yk«kzbz Lks dEk gks Rks ,kk«kd YkkHk dk EkkUk CkRkkb ,ks
- 6- fdLkUk dk gYk fdLk Ikz kj ds mRRkkykd dk mnkj .k g&
- 7- dg Lks lkkUkh [khpUks ds fyk, fdLk Ikz kj ds f?kj uh dk bLRk«kYk fd ,kk TkRkk gS
- 8- Rkj kTkw Eka fdLk LFkkUk Ikj vkYkEck gkRkk gS
- 9- EkUk ,k dh gFkykh fdLk Js kh ds mRRkkykd dk mnkj .k gS

Yk?kpnUkj h ,k Ik' u &

- 1- Ek' khUk fdLks dgRks gS
- 2- vkn' kz Ek' khUk dk D ,kk vFkz gS
- 3- fdLkh Ek' khUk dh n{kRkk 100% D ,kka Ugha gks LkdRkh\
- 4- Lkk/kkj .k Ek' khUkka ds Ikz kj fykf [k, \
- 5- PkYk RkFkk vPkYk f?kj Ukh Eka Lks fdLkd ,kk«kd YkkHk vf/kd gkRkk gS
- 6- Ek' khUk , Oka vkn' kz Ek' khUk Eka vRkj CkRkkb ,ks

- 7- fdLkh Ek' khuk ds fYk, _kkf«kd YkkHk Ok«kkUk«kkRk vj\$ n{kRkk Eka Lk«kdk CkRkkb_ks
- 8- fUkEukfYkf[kRk lkj fVIik.kh fYkf[k, &
1- _kkf«kd YkkHk 2- <kYkwRkYk 3 PkYk f?kjUkh
- 9- UKRk LkEkRkYk dk mlk_kk«k fYkf[k, \
- 10- lkfg_kk vj\$ /kjh dh jPkUk CkRkkRksqg LkEkÖkkb_ksfd vf/kd _kkf«kd YkkHk fdLk lk«kj lkkRk fd_kk Tkk LkdRkk g\$
- 11- vPkYk f?kjUkh dk Lkfpk«k Ok.k«k dhfTk, \
- 12- PkYk f?kjUkh dk fpk«k [kh«kdj Ok.k«k dhfTk, A bLkdk _kkf«kdh YkkHk fdRkUk gk«kk g\$
- 13- D_kk dkj.k gSfd O_kOkgj Eka fdLkh Ek' khuk dk Ok«kkUk«kkRk LknOk _kkf«kdh YkkHk I svf/kd gk«kk g\$
- 14- Rkhuk f?kj fUk_ka dk lFkEk f?kjUkh Rk«k O_kOkLFkk dk UkkEk«dRk fpk«k CkUkkb_ks

nh?k«mRRkj h_k lk' Uk&

- 1- mRRkks/kd D_kk g\$ mRRkks/kdka ds lk«kj dk Ok.k«k dhfTk, \
- 2- Ek' khuk fdLks dgRks g\$ Lkk/kkj.k Ek' khukka ds lk«kjka dk mnkgj.k I fgr o.k« dhfT, \
- 3- f?kjUkh D_kk g\$ _kg fdRkUks lk«kj dh gk«kh g\$
- 4- ntkjs Ok«kZ ds mRRkks/kdka dk fUkEu lknka ds vk/kkj lkj Ok.k«k dhfTk, \
1- UkkEk«dRk j_s[kkfPk«k 2- Ok.k«k RkFkk _kkf«kdh YkkHk 3- mnkgj.kA
- 5- dIkVIs /kk«ks dh Ek' khuk dk Lkfpk«k Ok.k«k dhfTk, \
- 6- Ok«_k«k DYkhukj Ek' khuk dk Lkfpk«k Ok.k«k dhfTk, \

bdkbz & 02

Å"ek & ¼½ fof'k"V m"ek , oa xtr m"ek dk i kj fHkd Kku] DoFukad] xyukad , oa bu
ij nkc , oa v'kf) ; ka dk i Hkko] i δkj dplj dk fl)kar , oa dk; Z fof/kA

½½ m"ek dk I pj.k&m"ek I pj.k dh fof/k; k] pkyd] I øgu , oa fofdj.k]
Fke] fl ykLd dk fl)kar , oa dk; fof/kA

½½ vknrk 'kdrk ueh vi f{kr vknrk ds mi ; kx] i Hkko

vH, kLkFkz Ik' u ¼k.M&1½

Yk?kqRRkj h, k Ik' Uk

- 1- , Ek-ds, Lk- (M.K.S.) Ik) frk Eka Xkprk m"Ekk dk Ekk«kd CkRkkb, ks
- 2- TKYk dh fof'k"V Å"Ekk dk Ekkuk CkRkkb, ks
- 3- Tkck CkQZ fik?kykrkh gS Rkck mLkds vk, kRkuk Ikj D, kk IkHkck IkMRkk gS
- 4- 5 XkEk CkQZ dks fik?kykks ds fyk, fdRkukh Å"Ekk dh vck' , kdRkk IkMRkk\
- 5- TKYk Eka v'kf) , k] fekykks Ikj mLkds DkFkukad Ikj D, kkIkHkck IkMRkk gS
- 6- Å"Ekk/kkfj Rk fdLks dgRks gS
- 7- Å"Ekk dYkkjh fdLks dgRks gS
- 9- fof'k"V Å"Ekk dk Ekk«kd CkRkkb, ks

Yk?kqUkj h, k Ik' u

- 1- Å"Ekk dk vFkz fykf[k, Rkfk (M.K.S.) Ik) frk Eka bLkdk Ekk«kd CkRkkb, ks
- 2- TKYk dh fof'k"V Å"Ekk 1 gS bLkdk D, kk RkRik, kz gS
- 3- XkYkukad dh IkfjHk"kk fykf[k, \
- 4- XkYkukad dh v'kf) , kka dk D, kk IkHkck IkMRkk gS
- 5- fgEk feJ . k fdLks dgRks gS
- 6- fdLk OkLRq dh Rkik Okf) fdUk dkj dka Ikj fukHj gS
- 7- Rkikh, k Lkkykuk dk vFkz LIk"V dhfTk,
- 8- DkFkukad Ikj nkck dk IkHkck fykf[k, \

- 9- QLYk dks lkkYks Lks CkPkkUks ds fyk, [kBlka Eka lkkUkh Hkj nBlks gñ D, kka.
- 10- XkEKZ Tkyk dh vllsqkk HkkTk Lks TkykUkk vf/kd TkykUk mRlUkUk djRkk gS D, kka.
- 11- lks kj dñj EkaHkkj OkkYOk (weight valve) vksj Lkj {kk OkkYOk (safety valve) ds dk, kz dks CkRkkb, ks.
- 12- XkqRk m"EkK fdLks dgRks gS. mLks, kg UkkEk D, kka fn, kk Xk, kk gS. bLkdK Ekk«kd fykf [k, \

nh?kzmÜkj h, k Ik' u &

- 1- lkfjHkk"kk fykf [k, &
1- fokf' k"V m"EkK 2- m"EkK/kkfjRkk 3- XkykUk] 4- Okk"lUk] 5- DokFkUk 6- XkykUkkad 7- fgEkkad 8- DokFkUkkad 9- XkykUk dh XkqRk m"EkK 10- Okk"lUk dh XkqRk m"EkK A
- 2- DokFkUk , Oka Okk"lUk Eka vBlkj fykf [k, \
- 3- XkFEk, kka Eka fEkêh ds ?kMs dk Tkyk vf/kd BBlk D, kks gkBlk gS.
- 4- [kkUk lkdUks ds fyk, Tkyk gh vf/kd mlk, kqRk gS D, kka.
- 5- XkykUk ds fUk, kEk fykf [k, \
- 6- CkQZ dh XkqRk m"EkK dk nSukd TkhUk Eka D, kk mlk, kksk gS.
- 7- Okk"lUk dh XkqRk m"EkK dk lkañfRk Eka D, kk mlk, kksk gS.
- 8- lks kj dñj dk UkkEkkadRk fPk«k CkUkkdj mLkdK dk, kz fykf [k, \
- 9- Å"EkK EkkUk dh dkk&dksk Lkh bdkb, kkgS. m"EkK dh Ekk«kk fdUk&fdUk CkRkkka lkj fUkHkj djRkk gS.
- 10- Okk"lUk dh XkqRk m"EkK Lks vllk D, kk LkEkÖkRks gS. bLkdK Ekk«kd fykf [k, A lzkksk }kj k HkkTk dh XkqRk m"EkK dS, ks KkRk dj kks. Llk"V dhfTk, A

vH, kklkFkz Ik' u ¼ [k. M&2½

vfRk Yk?kqRRkj h, k Ik' Uk

- 1- NRk Lks YkVdRks fok | Bk Ckyk Lks gEk Rkd fdLk fokf/k Lks m"EkK lkgpRkRk gS A
- 2- LkqkZ Lks lFokh lkj Å"EkK dk Lkñj. k fdLk fokf/k Lks gkBlk gS.
- 3- FkEkZk&¶YkkLd dh HkhRkj h LkRkg PkEkdnkj D, kka gkBlk gS.
- 4- m"EkK jkskh lknkFkz fdLks dgRks gS.

- 5- Rkhuk Å"Ekki kðkh lknkFkkð ds UKkEk FYkf [k, \
- 6- LkQn lknkFkz Å"Ekki ds fdLk lkðkj ds fðkfdj .k gS
- 7- LkðkkYkd fdLks dgRks gS
- 8- Rkhuk LkðkkYkd lknkFkkð ds mnkgj .k nhfTk, \
- 9- fukkkRk~Eka Å"Ekki dk Lkðkj .k fdLk lkðkj gkRkk gS
- 10- dkYks RkFkk [kjngj s lknkFkz Å"Ekki ds fdLk lkðkj ds vok'kkðkd gS
- 11- fdLk fðkf/k }kjk æOk XkEkZ gkRkk gS

Yk?kqRRkj h,k lk' Uk

- 1- Å"Ekki Lkðkj .k fdLks dgRks gS
- 2- Å"Ekki LkðkkYkd] Å"Ekki jkðkh dðkkYkd ds nks&nks mnkgj .k nhfTk,
- 3- Lkqkz Lks lFðkh Rkd Å"Ekki fdLk fðkf/k Lks vkRkh gS LkEkðkkb,ks
- 4- Å"Ekki LkðkkðkEk PkkYkd dkðk&Lkk gS
- 5- CkMs dkj [kkukka Eka fPkEkfuk, kq; YkXkkbz TkkRkh gS D, kka
- 6- FkEkZk&YkklD ds dkðk dh nhðkj ka ds CkhPk fukkkRk~D, kka fd, kk TkkRkk gS
- 7- [kkuk lkdRks LkEk, k CkRðk dh RkYkh dh Ckkgjh LkRkg dkYkh D, kka j [kh TkkRkh gS
- 8- D, kk dkj .k gSfd CkQ, YkdMh ds Ckj kns Eks j [kh TkkRkh gS
- 9- FkEkZk&YkklD dk LkPN Ok UKkEkðdRk fPk«k CkUkkb,ks
- 10- ?kj ka ds dEkj ka Eka jkðk kUknkuk D, kka YkXkk, ks TkkRks gS
- 11- XkEkZ ds fnUka Eka LkEkqRkVh, k Hkðk jkfk« Eka XkEkZ vkj fnUk Eka Bð/s jgRks gS D, kka
- 12- vkðkuk ds Pkkj ka vkj Å"Ekki fdLk fðkf/k Eka lkgðkRkh gS
- 13- FkEkZk YkklD Eka j [kh OkLRkq dk Rkkik dkQh LkEk, k Rkd T, kka dk R, kka CkUk jgRkk gS A dkj .k LkfgRk LkEkðkkb,ks
- 14- Xkjs Lks CkUks ?kj XkEkZ Eka Bð/s Ok LknhZ Eka XkEkZ D, kka gkRks gS
- 15- YkYkVðk ds Ålkj Ok UkhPks fNæ gkRks gS D, kka

nh?kzmÜkj h, k Ik' u

- 1- Å"EkL LFkkUKkRkj .k dh fOkfHkUUK fOkf/k, kka dks , d&, d mnkgj .k nslj LkEkÖkbb, ks
- 2- LkPkkYkd , OkadPkkYkd fdLks dgRks gS \ IkzkkXk }kjk fLk) dhfTk, fd fOkfHkUUK lknkFkkZ dh PkkYkUK {kEkRkk fHkUUK&fHkUUK gkRkh gS
- 3- LkEkglk /kkjk, j D, kk gS fOkfHkUUK LkEkglk /kkjkvka dks LkEkÖkbb, ks
- 4- RkkIk LkPkj .k dh PkkYkkUK] LkEkglk vksj fOkfdj .k fØ, kvvka Eka vBkj LkfgRk LkEkÖkbb, ks
- 5- fOkfdj .k D, kk gS nSukd TkhOkUK Eka fOkfdj .k Lks D, kk YkkHk gS
- 6- Å"EkL ds vOk 'kkskd] fOkfdjd , Oka ljkOkRkZd dks mnkgj .k LkfgRk LkEkÖkbb, ks
- 7- FkEkLk ¶YkkLd ds fLk) kRk RkFkk jPkUkk dk Ok. lUk dhfTk, \

vH, kLkKfKz Ik' u ¼k. M&3½

vfr Yk?kpmÜkj h, k Ik' u

- 1- TkCk Okk, kPkaMYk Eka TkYk Ok"lk dh EkKkEk dEk gks TkkRkh gSRkCk EkKkEk fdLk Ikdkj dk gkRkk gS
- 2- dHkh&dHkh RkkYkkCk dh LkRkg Ikj CkQZ D, kka TKEk TkkRkh gS
- 3- : Ek ghVj Eka Ikz kPdk dP/Ykh fdLk /kkRkq }kjk fukFEkRk gkRkh gS
- 4- vkæRkk fdLks dgRks gS
- 5- fukj lksk vkæRkk fdLks dgRks gS
- 6- fukj lksk vkæRkk ds Ck<Uks ds CkOkTkm Hkh gOk dh vkIkE{kId vkæRkk dCk ?kV LkdRkh gS
- 7- vLk CkUkks ds fyk, dKSk&Lkh Ikfj fLFkfrk vkOk' ,kd gS
- 8- vLkRkTRk ok"i fdl s dgrs gS vkæRkk EkklkUks dh bdkbZ dk UkKEk CkRkbb, ks
- 9- dksjk fdLks dgRks gS
- 10- Lkky'j dPj Eka fdLk fOkf/k }kjk Å"EkL mRlUUK dh TkkRkh gS
- 12- vkæRkkfEkrk fdLks dgRks gS

Yk?kpmRRkj h, k Ik' Uk

- 1- vkIkE{kId vkæRkk fdLks dgRks gS

- 2- Ok"kkz ds frUkka Eka XkEkHz dh vIkfkk 'kj hj fPkIkfPkIk D,kka jgRkk gS
- 3- vIkIkf{kd vkæBkk dk TkhOUk Eka D,kk EkgROk gS
- 4- CknYkks OkkYkh jkRk Eka vkt.k Ukggha fXkjRkh] D,kka
- 5- Lkkykj dþj dS.ks dkEk djRkk gS
- 6- B.Ms LFkkUk Ikj lknkFkZ vf/kd LkEk,k Rkd Bhd jgRkk gS D,kka
- 7- fYTk fdLk fLk) kkk Ikj dk,kz djRkk gS
- 8- fYTk Eks fdLk Ikdkj [kk | lknkFkZ Lkajf{krk jgRks gS
- 9- fUj lksk , Oka vIkIkf{kd vkæBkk Eka D,kk vBkj gS
- 10- LkRkIRk , Oka vLkRkIRk Okk"lk Eka vBkj CkRkkb,kS
- 11- vkt.k D,kk gS vkt.kka d Okk"lk Eka vBkj CkRkkb,kS
- 12- vkæBkk vksj vIkIkf{kd vkæBkk dh lKj Hkk"kk , Oka Lkuk fykf [k, \
- 13- vkt.k vksj /kq j ds Ckks Eka LkqkSk Eks Ok. kzk dhfTk, \
- 14- fUkEufYkf[kRk Ikj Lkq{kIRk fVll.kh fykf[k,kS& 1- vkskk 2- lkykk
- 15- fUkEufYkf[kRk Ikj fVll.kh fykf[k, & 1- Eksk 2- fgEkIkRk 3- dkqjk A

nh?kzRRkj h,k lK' Uk &

- 1- jS'htkjS/j dh CkUkkOV , Oka dk,kkz kkykh dk Lkfpk«k Ok. kzk dhfTk, \
- 2- Okk,kq dh vkæBkk Lks D,kk vfHkIk,k gS lK,kk }kj k fLk) fdfTk, fd Okk,kq Eka vkæBkk fOk | EkkUk gS
- 3- Okk,kq 'khrkYkuk ,kæk fdLk Ikdkj dkEk djRkk gS LkqkSk Eka LkEkÖkkb,kS
- 4- dEkj k RkIk d ,kæk dh vkOk' ,kdRk D,kka lKVRkh gS D,kk bLkdIk lK,kk mfPkRk gS
- 5- XkS.k dk,kz lK,kkykh RkFk XkS.k dk lK,kk djRks LkEk,k fdUk CkRkka dk /,kkUk j [kUkk Pkfg, \
- 6- vkt.k fdLks dgRks gS vkt.k CkUkks ds fyk, dkSk&dkSk Lk CkRka vkOk' ,kd gS

bdkb&03

/Okfuk& IkfjHkk"kk] /Okfuk Rkj&lkka dk LkPkj .k] EkkUOk dUk dh jPKUkk , Oka /Okfuk dk mRIkknUk]
' ksj , Oka Lkka&XkFRkd /Okfuk] Lkka&XkFRkd /Okfuk dk vfHkYk{k.k.] /Okfuk Ikniik.k A

vH, kkLkkFKZ Ik' u

vfr y?kq mRrjh; i' u

- 1- /Okfuk dks Ikfj Hkkf"krk dhfTk, \
- 2- fUkOkRk Eka /Okfuk dk LkPkj .k D, kka Ukg ha gkRkk\
- 3- /Okfuk dh RkhOkRkk vksj Ekk/, kEk ds /kUROk ds CkhPk D, kk Lkka&k gkRkk gS.
- 4- LkqOkj /Okfuk fdLks dgRks gS.
- 5- LkqOkj /Okfuk dh fok' kskRkk fdLk CkRk Ikj fUkHkj djRk gS.
- 6- vOkkaNUkh, k /Okfuk dk vOk' kksk.k fdLk Ikzkj fd, kk TkkRk gS.
- 7- /Okfuk fdLk Ikzkj ÅTkz dk : Ik gS.
- 8- Lokj XkkEk Eka Lokj ka dh Lkq, kk fdRkUkh gkRk gS.
- 9- /Okfuk dk LkPkj .k fdLk Ekk/, kEk Eka RkhOkz gkRkk gS.
- 10- Lkka&EkHvj ds Rkj }kj mRIkUk /Okfuk dks gEk fdLk UkkEk Lks TkkURks gS.
- 11- ' ksj fdLks dgRks gS.

Yk?kq Ukjh, k Ik' u

- 1- /Okfuk D, kk gS.
- 2- /Okfuk dh RkhOkRkk dks&dsk Lks dkj dka Lks IkHkkfOkRk gkRks gS.
- 3- /Okfuk dh Xkq kRk dk D, kk vFkZ gS.
- 4- Vsk&fj dkmj Lks /Okfuk dk vfHkYk{kUk fdLk Ikzkj fd, kk Tkk LkdRk gS.
- 5- ' ksj Ikniik.k fdLks dgRks gS.
- 7- LkqOkj /Okfuk RkFk ' ksj Eka D, kk vRkj gS LkEkÖkkb, ks.
- 8- /Okfuk dh RkhOkRkk , Oka Rkj RkRk dks LkEkÖkkb, ks.
- 9- Rkj Rk , Oka vOkfUk Eka fdLk Ikzkj dk Lkka&k gS.

10- Lk&XfRkd /Okfuk ds dk&dk& Lks Yk{k. k g&

nh?kzmÜkj h, k Ik' u &

- 1- 'kksj Ikr&ik. k Lks D, kk LkEkÖRks gks bLkLks gks&kkYkh gkfuk, kka dk mYYks[k dhfTk, RkFkk bLkLks CkPkUks ds mlkk, k fykf [k, \
- 2- fj dkm&IYkskj ds Eq[,k Hkk&ka dh fØ, kk&f&f/k LkEkÖkkb, ks
- 3- Vsk&fj dkm& dh jPkUkk , Oka dk, k&f&f/k dks fykf [k, \
- 4- vOk' kks'd lknf& fdLk Ik&kj 'kksj dks vOk' kks''krk dj Yk&ks g& LkEkÖkkb, ks
- 5- d&ks fLk) dj&ks fd /Okfuk dh mRikfÜk d&kk }kj k g&Rk g&
- 6- Ik&kk }kj k fLk) dhfTk, fd /Okfuk XkEkUk ds fyk, Ekk/, kEk dk g&kk vOk' ,kd g&

bdkbZ 4

j kLk, kfukd Lk&kk ds fuk, kEk& 1- æ0, k ds LFkf, kRok dk fuk, kEk] fLFkj vUk&krk dk fuk, kEk] Xk&. krk vUk&krk dk fuk, kEk] vk&dh A

vH, kLk&FkZ Ik' u

vfr y?k&Rrjh; iz' u&

- 1- v. kq fdLks dgrks g&
- 2- æ0, k Uk RksUk"V fd, kk Tik LkdRk gsvkj Uk mRikUk fd, kk Tik LkdRk g& ,kg fdLk fuk, kEk dks lknf' krk djRk g&
- 3- j kLk, kfukd , k&kdka Eka vOk, k&h RkRok Lkn& Hkkj dh n"V Lks fufÜPkrk vUk&krk Eka f&Yks jgRks g& ,kg dk&&Lk fuk, kEk g&
- 4- Ok&kfukd OkTkh&Yk, ki Uks fdLk fuk, kEk dk Ik&RkIkknUk fd, kk Fkk\
- 5- Xk&. krk vUk&krk dk fuk, kEk fdLk Ok&kfukd Uks Ik&RkIkknUk fd, kk\
- 6- Xk&. kka ds vk, kRkUk Lk&akh fuk, kEk fdLkUks fn, kk\
- 7- Rk&, k&dh vUk&krk dk fuk, kEk D, kk g&
- 8- j kLk, kfukd vfHkfØ, kk fdLks dgrks g&
- 9- O, k&ØEk vUk&krk vFokk Rk&, k&dh Hkkj ds fuk, kEk dk Ik&RkIkknUk fdLkUks fn, kk\
- 10- Lkj Yk Xk&. krk vUk&krk fuk, kEk Lks vkik D, kk LkEkÖRks g&

- 4- 2-173 XkkEk FYkFkkTiz 1-949 XkkEk YkM Ikj kDlkkbM RkFkk 2-325 XkkEk YkM Ikj gkbMRS'kuk dh /kkjk IkkkkfgRk djUks Ikj ØEk' k%2-017] 1-688 RkFkk 2-100 XkkEk YkM 'kSk jgk CkRkkb,ksfd ,ks Ikfj .kkEk Xkf. kRk vUkkkkRk ds fuk,kek dh Ikq"V djRks gS
mUkj & vUkkkkRk & 0-0775 0-1546] 0-1029 ,kk 4 % 2 % 3
- 5- Xkf. kRk vUkkkkRk ds fuk,kek dks , d mnkgj .k ndj LkEkÖkkb,ks
- 6- æ0,kekkuL Lkj {k.k ds fuk,kek dks Ikfj Hkkf" kRk dhfTk, \ bLkds LkR,kkkkuk ds FYk, Ikz,kkkk dk Ok. kzk dhfTk, \
- 7- ,kkkkk/h dh Ikfj dYIkukk dk EkgRk Lkafkk Eka LkEkÖkkb,ks

bdkb& 5

fokYks kRkk Xkq kukQYk& Ikfj Hkk"kk& fokYks kRkkj Xkq kukQYk ds mlk,kkkk , Oka dkj d]

vH, kklkkfkz Ik' u

vfrk Yk?kqRRkj h, k Ik' Uk &

- 1- vk, kukuk fØ, kk Eka fdRkUks Ikdkj ds vk, kuk IkfRk gkRks gS
- 2- vk, kukuk fdLks dgRks gS
- 3- /kukk, kuk , Oka __. kk, kuk D, kk gS
- 4- fokYks kRkk Xkq kukQYk fdLkds Ckj kCkj gkRkk gS
- 5- mnkLkhuk fokYk, kuk Lks D, kk vfHkkkk, k gS
- 6- gkbMRS'kuk vk, kuk LkkUæ. k ' kCn dk D, kk vFkz gS
- 7- ?kq'kuk' khYRkk dks IkHkkfORRk djUks OkkYks ?kVdka ds UkkEk CkRkkb,ks
- 8- LkkSM, kek CkbbdkCkbbk/ dk vOk{kdk. k fdLk fokf/k }kj k fd, kk TkkRkk gS
- 9- LkkCkqk CkukUks dh fØ, kk n' kkkks ds FYk, j kLk, kfuLd LkEkhdj .k nhfTk, \
- 10- vEYkh, k fokYk, kuk fdLks dgRks gS
- 11- {kkj h, k IkfRkj kskd fdLks dgRks gS
- 12- Ekkg Yk fokYks kRkk D, kk gS
- 13- gkbMRS'kuk vk, kuk LkkUæ. k ' kCn dk D, kk vFkz gS
- 14- {kkj h, k fokYk, kuk fdLks dgRks gS

- 15- Ekkuk, k ds jDRk dk pH Ekkuk fdRkUkk gkRkk gS.
- 16- vEYkh, kRkk dk LdYk fdLks dgRks gS.
- 17- LkEk vk, kUk dh mIkFLFkFRk Eka fdLkh fok | Bk vIk?kV, -k dk fokYkskRkk Xkq kUkQYk fdLk Ikadkj gkRkk\
- 18- vEYkh, k fokYk, kUk dk pH Ekkuk fdRkUkk gkRkk gS.
- 19- {kkj, h, k fokYk, kUk dk pH Ekkuk fdRkUkk gkRkk gS.

Yk?kqRRkj h, k Ik' Uk

- 1- fokYkskRkk Xkq kUkQYk dh i fjHk"kk fYkf [k, \
- 2- fokYkskRkk Xkq kUkQYk dk dkbZ , d vUkqz, kkkk fYkf [k, \
- 3- fokYkskRkk Xkq kUkQYk ds vk/kkj Ikj Ukekd dk 'kq) dj .k dSks fd, kk Tkk LkdRkk gS.
- 4- fokYkskRkk Xkq kUkQYk dh IkfjHk"kk fYkf [k, A XkqkkREkd fok' Yksk. k Eka bLkds nks mlk, kkkk mnkgj .k LkfgRk LkEkÖkkb, ks.
- 5- XkqkkREkd fok' Yksk. k Ekamukj sLkEkog dsEkYkdka dh lkgPkUk dsfYk, H₂S Xksk IkokkfgRk djUks Lks Ikokz fokYk, kUk Eka HCl D, kka fEkYkk, kk TkkRkk gS.
- 6- fokYkskRkk vksj fokYkskRkk Xkq kUkQYk Eka LkCkak CkRkkb, ks.
- 7- fokYkskRkk Xkq kUkQYk ds nks mlk, kkkk fYkf [k, \
- 8- LkkCkqk dk vOk{ksk. k dSks gkRkk gS.

nh?kzRRkj h, k Ik' Uk

- 1- m | kkk Eka fokYkskRkk Xkq kUkQYk ds mlk, kkkk fYkf [k, \
- 2- Ukekd ds LkRkIRk fokYk, kUk HCl Xksk IkokkfgRk djUks Ikj 'kq) Ukekd vOk{kskRk D, kka gkRkk gS. LkEkhdj .k ndj LkEkÖkkb, ks.
- 3- XkqkkREkd fok' Yksk. k ds f}Rkh, k OkXkZ Eka HCl dk vksj RkRkh, k OkXkZ Eka NH₄Cl dk mlk, kkkk LkEkÖkkb, ka.
- 4- fLKYOkj DYkkj kbM dh fokYkskRkk 0-0016 XkkEk YkhVj gS, _fn bLkdk v. kqkqj 143-5 gSRkks bLkdk fokYkskRkk Xkq kUkQYk KkRk dhfTk, \
- 5- pH Ekkuk fdLks dgRks gS. Lkqkssk Eka LkEkÖkkb, ka.
- 6- fokYkskRkk Xkq kUkQYk fokYksk ds Ekq, k vUkqz, kkkk fYkf [k, \

- 7- $\frac{N}{50}$ HCl dk pH dk Ekkuk Kkrk dhfTk, \
- 8- fdLkh fokyk_kuk ds pH dk Ekkuk dk D_3kk vfkZ gS
- 9- CkQj fokyk_kuk dk EkgROk Ckrkkb_ks
- 10- CkQj fokyk_kuk fdLks dgRks gS. vEYk CkQj fokyk_kuk RkFkk {kkj CkQj fokyk_kuk dk , d&, d mnkgj .k fykf [k, \

bdkbZ 6

TKYk& TKYk ds lktNfrkd L«kkRkJEknq , Oka dBkj TKYk TKYk dh dBkj Rkk ds lkdj , Oka nij djUks dh fokf/k

vH_3kkLkkfkZ lk' u

vfrk Yk?kqUkj_h_k lk' u

- 1- TKYk dk j kLkk_kfUkd UkkEk Ckrkkb_ks
- 2- TKYk dk v.kjkkj RkFkk vkf.Okd Lkkk Ckrkkb_ks
- 3- TKYk Eks vLFkk_kh dBkj Rkk fdLk Ykok.k ds dkj .k gkRkh gS
- 4- fdLk fokf/k }kj k TKYk dh LFkk_kh dBkj Rkk nij dh Tkk LkdRkh gS
- 5- fdLk fokf/k }kj k TKYk dh LFkk_kh , Oka vLFkk_kh dBkj Rkk ntkkka dks nij fd_3kk Tkk LkdRkk gS
- 6- TKYk dks j kkk.kj fgRk djUks ds fyk, mLkEka dkRk&Lkk lknkfkZ feYkk_kk TkkRkk gS
- 7- fdLk Rkkik lkj TKYk dk vk_kRkuk Ck< TkkRkk gS
- 8- TKYk ds nks HkkSRkd Xkqk Ckrkkb_ks
- 9- TKYk dk vf/kdRkEk ?kURok fdRkUkk gkRkk gS
- 10- lkjE_kfVV fokf/k }kj k TKYk dh dS_ks dBkj Rkk nij gkRkh \
- 11- fdLk L«kkRk ds TKYk LkCkLks vf/kd [kfUkTk Ykok.kka Lks EkDRk gkRkk gS
- 12- TKYk Lkj {k.k D_3kka vkOk' _kd gS
- 13- lktNfrkd TKYk fdUk L«kkRkka Lks lktRk gkRkk gS
- 14- TKYk D_3kk gS

- 15- EkUkj, k , Oka lkaM&lkSka Eka mlkflFRk Tkyk dh Ekkaek CkRkkb, ks
- 16- 'kq) Tkyk fdLk lktNfrkd L«kkBk Lks lktRk fd, kk Tkk LkdRkk gS
- 17- LkEkeh Tkyk v'kq) D, kka jgRkk gS. fykf[k, A
- 18- [kfUtk Tkyk fdLks dgRks gS
- 19- [kfUtk Tkyk Lks D, kk YkHk gS
- 20- 'kgjka Eka Tkyk dks fdLk fokf/k }kjk 'kq) fd, kk TkkRkk gS

Yk?kqRRkj h, k Ik' Uk

- 1- Eknq Tkyk , Oka dBkj Tkyk dh D, kk lkgPkuk gS
- 2- Tkyk dh dBkj Rkk fdUk dkj . kka Lks gkRkh gS
- 3- Tkyk dh vLFkk, kh dBkj Rkk fdLk dkj . k Lks gkRkh gS. LFkk, kh dBkj Rkk dks nij djUks dh lkjE, kVV fokf/k dk Ok. kZk dhfTk, \
- 5- dS'kXkuk ds lk, kkk Lks Tkyk dh LFkk, kh dBkj Rkk dks dS, ks nij fd, kk Tkk Lkd Rkk gS
- 5- dBkj Tkyk Lks gkSks OkYkh nks Ekq, k gkFuk, kka dks fykf[k,
- 6- lkjE, kVV fokf/k }kjk Tkyk dh dBkj Rkk dks nij djUks dh fokf/k Eks kqkPRk mlkdj . k dk js[kfpk«k CkUkkb, ks
- 7- v/kkRq, ka ds vkDLkkbM Lks Tkyk dh D, kk vfHkfØ, kk gkRkh gS
- 8- /kkRq, ka ds vkDLkkbM Lks Tkyk dh vfHkfØ, kk dks LkEkÖkkb, ks
- 9- Tkyk LkØEk. k ds lkekq, k dkj . k fykf[k, \

nh?kzRRkj h, k Ik' Uk

- 1- Tkyk ds lktNfrkd L«kkBka dk Ok. kZk dhfTk, \
- 2- Tkyk dh dBkj Rkk ds D, kk dkj . k gS. dBkj Rkk fdRkUks lkdkj dh gkRkh gS. Tkyk dh lR, kd lkdkj dh dBkj Rkk dks nij djUks ds mlk, k fykf[k, \
- 3- LOkPN , Oka UkkEkkfdRk fpk«k dh Lkgk, rkk Lks Tkyk dh dBkj Rkk dks nij djUks dh lkjE, kVV fokf/k dk Ok. kZk dhfTk, \
- 4- Tkyk ds jkLk, kFukd Xqk kka dks LkEkÖkkb, ka jkLk, kFukd fØ, kkvka dk LkEkhdj . k Hkh nhfTk, \
- 5- Eknq , Oka dBkj Tkyk Eka D, kk vRkj gS. Tkyk dh dBkj Rkk ds D, kk dkj . k gS

6- TRYk LkØEkk.k dk fUKØkj .k dLks fd,kk Tkk LkdRkk gS

bdkbZ07

fØjākd Xkqk& fØjākd dh lkfjHkk"kkj fØjākd lknkFk& DYkksj hUk] fojat d pwkj LKYQj
MkbvkDLkkbM , Øka fØjākd fØ,kk Xkqk , Øka mlk, kkkkA

vH, kkLkkFkZ Ik' u

vFRKYk?kØRRkj h, k Ik' Uk

- 1- fdLk fØjākd }kj k dLkEYk ØLRkq/ka dk fØjātkUk Ugha fd,kk TkkRkk \
- 2- DYkksj hUk }kj k fØjātkUk fdLk jkLkk, kfUkd fØ,kk ds RkgRk gkRkh gS
- 3- LKYQj Mkb&vkDLkkbM }kj k fØjātkUk Eka dksk&Lkh jkLkk, kfUkd fØ,kk gkRkh gS
- 4- fdLk fØjākd }kj k vLFkk, kh fØjātkUk fØ,kk gkRkh gS
- 5- dØN /kykkbz Eka mlk, kkkkh {kkj h, k Ik'FRkdEkZka ds UkkeK ØkRkkb, ks
- 5- DYkksj hUk Øk, kq Lks fdRkUks XkØkk Hkkj h lknkFkZ gS
- 7- j's kEk RkFkk ÅUk ds fØjātkUk Eka dksk&Lkh Xk&k Ik, kØRk dh TkkRkh gS
- 9- LkRkh ØkL<kkk, ØkadkXkTk dk jāk mMkUks dsfYk, fdLk fØjākd lknkFkZ dk Ik, kkkk fd, kk TkkRkk gS
- 10- gkbMkRkTkuK ljkØDLkkbM fdLk lkdj ds fØjātku dk mngj .k gS
- 11- CYkRfPkØk lkkØMj dk vk. kfØd Lkwek ØkRkkb, ks \

Yk?kØUkj h, k Ik' u &

- 1- fØjākd fØ,kk vksj fØjātkUk dks LkEkØkkb, ks
- 2- LKYQj Mkb&vkDLkkbM dh fØjātkUk fØ,kk dks LkEkØkkb, ks
- 3- DYkksj hUk dh fØjātkUk fØ,kk dks LkEkØkkb, ks
- 4- fØjākd PkwkZ dk Lkwek fYkf [k, bLkdh fØjātkUk fØ,kk dks LkEkØkkb, ks
- 5- Ik'FRkDYkksj D, kk gS bLkdk fØjātkUk fØ,kk Eka D, kk dk, kz gS
- 6- CYkRfPkØk lkkØMj dh lkk, k DYkksj hUk Lks D, kk RkkRl, kz gS
- 7- DYkksj hUk dh fØjātkUk fØ,kk Eka TRYk dk gkØkk D, kka vkØk' , kd gS

- 8- DYkkj huk Xk&k OkLRkq/ka dk j&k D, kka mMk nBkh gS.
- 9- LKYQj & Mkb vkDLkbbM (SO₂) dh fokjātkuk fØ, kk dks LkEkhdj .k nđj LkEkÖkbb, ks

nh?kzmRRkj h, k Ik' Uk &

- 1- LKYQj Mkb&vkDLkbbM Ok DYkkj huk ds fokjātkd Xkq kka dh Rkq'kukk dhfTk, \
- 2- m | k&k Eka LkRkh dIKMka dh fokjātkuk fØ, kk dk Ok. k&k dhfTk, A bLk fokf/k Eka dIKMs dk&
 - 1- dIKMs /kkUs ds Lk&Ms ds fokYk, kuk vkj
 - 2- IkFRkDYkkj fokYk, kuk Eka D, kka Mqkk, kk TkRkk gS
- 3- fokjātkd Pkwkz dk fUkEkz k fdLk Ik&kj fd, kk TkRkk gS.
- 4- DYkkj huk dh fokjātkd fØ, kk dks vkOk' ,kd jkLk, kfuld LkEkhdj .k nđj LkEkÖkbb, ks bLkLks Åuk RkFk j s kEk dk fokjātkuk D, kka Ukgha fd, kk TkRkk \

bdkbZ08

Ikj k&k. k , Oka fUK" kPKUK& ¼½ Ikj k&k. k , Oka fUK" kPKUK dh IkfjHk"kk] Ikj k&k. k dh fokf/k, k& CkhTk. M dh jPKUK] fUK" kPKUK dh fØ, kk A ½½ CkhTkka dk LkajPKUK , Oka vadg .k , d CkhTk Ik&kh] ¼EkDdk½ f}CkhTk Ik&kh CkhTk PKUK] EkDds dk vadg .k] PKUs dk vadg .k

vH, kLkFKz Ik' u ¼k. M&½

vFRk Yk?kqÜkj h, k Ik' u

- 1- LkkyOk, kk Eka fdLkds }kj k Ikj k&k. k gkRkk gS.
- 2- dEYk ds Ik&Ik Eka fdLk Ekk, kEk }kj k Ikj k&k. k gkRkk gS.
- 3- OkSYkLkUk f, kk Eka fdLkds }kj k Ikj k&k. k gkRkk gS.
- 4- fok" kEk OkFRkZkRok , Oka fHKUk IkDokRkk fdLk Ik&kj ds Ikj k&k. k Eka Ikk, kh TkRkh gS.
- 5- Ok, kq }kj k Ikj k&kRk , d Ik&Ik dk mnkj .k nhfTk, \
- 6- UkBz TkFRk, kka dk fokdkLk fdLk Ik&kj ds Ikj k&k. k }kj k Lk&Ok gS.
- 7- XkUUs Eka fdLk fokf/k }kj k Ikj k&k. k gkRkk gS.
- 8- gkFkh }kj k fdLk Ik&Ik Eka Ikj k&k. k gkRkk gS.
- 9- LOk&Ikj kFXkr Ik&Ik ds mnkj .k nhfTk, \

- 10- EkVj Eka dhV Ikj kXk .k gh D, kka gkRk gS
- 11- Ikj kXk .k ds Ikzdkj CkRk kb, kS
- 12- gj dKkKkKk IkqIk ds mnkgj .k CkRk kb, kS
- 13- XkqkKk Eka fdLk Ikzdkj dk Ikj & Ikj kXk .k gkRk gS
- 14- 'kgRkKk Eks fdLk Ikzdkj ds Ikj kXk .k gkRk gS
- 15- LOk, kAk/, kRkK IkqIk dk , d mnkgj .k nhfTk, \
- 16- , YkKkKkKk fdLk dgRk gS
- 17- Ikj kXk .k fdLk HkkXk Eka vdfjRk gkRk gS
- 18- fuk"ksPkRk f}Rk, kd daed fdLkLk CkURk gS
- 19- CkhTk jfgRk QYkka ds fUkEkKz k dks D, kk dgRk gS
- 20- fuk"ksPkRk vM Lk fdLk HkkXk dk fUkEkKz k gkRk gS
- 21- fuk"ksPkRk fdLk dgRk gS

Yk?kqRRkj h, k Ikz' Uk

- 1- fUkEukfYkf [kRk Lk vktk D, kk LkEkÖkRk gS
 1- , dFYkZkKk, kh RkFk mHk, kFYkZkKk, kh 2- fuk"kek: IkRk 3- LOk, kAk) Rk 4- IkFd~ IkDORk
 5- fUkFEYkIkDORk
- 2- fdUgha nks Okk, q Ikj kFXkRk RkFk LOk & Ikj kFXkRk IkqIkka ds mnkgj .k nhfTk, \
- 3- TkURkq Ikj kXk .k RkFk bLk ds fUkFHkUk Ikzdkj CkRk kb, kS
- 4- Ikj & Ikj kXk .k , Oka LOk & Ikj kXk .k Lk gkKkKkYk YkkHk Ok gkFuk, kka fYkf [k, \
- 5- dhV Ikj kFXkRk IkqIkka dh fuk' kSkRk, a fYkf [k, \
- 6- jkfak Eka f [kYkUk OkYk IkqIk vf/kdRk LkQn gkRk gS D, kka LkEkÖkKk, kS
- 7- XkqkKk ds IkqIk Eka YkKk LkHk nYkka Petals dks fUkdYk fn, kk Tkk, ks RkKs IkqIk Ikj D, kk IkKkKk
 IkVkk\
- 8- fuk"ksPkRk dh Ikfj Hkk"kk fYkf [k, \
- 9- nksj s fuk"ksPkRk dk EkgRk CkRk kb, kS
- 10- nksj s fuk"ksPkRk Lk vktk D, kk LkEkÖkRk gS

- 11- I kj kXk.k v ksj fUK"KPKUK Eka D,kk vBkj gS
- 12- ,kfn IkqIk ds OkfRkZdkxz dks dkV fn,kk Tkk,ks Rkks fUK"KPKUK fØ,kk I kj D,kk IkHkkOk IkMxkk\
- 13- v.Mi dh YkOkOkRk-dkV Ckukkdj] v.M}kjh fUK"KPKUK dks n'kkb,ks

nh?kzmRRkj h,k Ik' Uk

- 1- I kj kXk.k Lks v kIk D,kk LkEkÖkRks gS ,kg fdRkUks Ikzdkj dk gkRkk gS I kj & I kj kXk.k ds fOkfHKUUK Ekk/,kEk CkRkkb,ks
- 2- I kj kXk.k dh I kj Hkk"kk fYkf [k,ka LOk&I kj kfxkRk IkqIk Eka dksk&dkSk Lkh vUkqDwRkk, a I kkbZ TkkRkh gS
- 3- I kj & I kj kXk.k fdI s dgrsgä ; g fdRkUks Ikzdkj dk gkRkk gS mnkgj .k LkfgRk LkEkÖkbb,ka
- 4- LOk&I kj kfxkRk , Oka I kj & I kj kfxkRk IkqIkka Eka D,kk vBkj gS I kj & I kj kXk.k ds fYk, fOkfHKUUK vUkqDwRkka dh O,kk [,kk dhfTk, \
- 5- fdLkh Tkyk I kj kfxkRk IkkSkka Eka I kj kXk.k fOkf/k dks LkEkÖkbb,ks
- 6- EkDds dh IkkSkka Eks I kj kXk.k fOkf/k CkRkkRks gq bLk IkkSkka dh fOk' kSkRkkvka dks fYkf [k,ks Tkks bLks Okk,k&I kj kXk.k ds fy, LkQYk CkUkRkk gS
- 7- I kj & I kj kXk.k Eka Lkgk, kd ,kqDR, kka dks mnkgj .k LkfgRk LkEkÖkbb,ks
- 8- LOk&I kj kXk.k D,kk gS LOk&I kj kXk.k ds fYk, IkqIkka Eka Ikk,ks TkkUks OkkYks vUkqDwRkka dk Ok. kRk dhfTk, A LOk&I kj kXk.k ds YkkHk Ok gkfuK I kj Ikzdk' k Mkfyk,ks
- 9- dhV I kj kfxkRk , Oka Okk,kq I kj kfxkRk IkqIkka Eka Lkknkgj .k vBkj CkRkkb,ks
- 10- fUK"KPKUK fdLks dgrks gS nkgj s fUK"KPKUK Lks D,kk RkkRk,kz gS

vH, kklkfkz Ik' u ¼[k.M&2½

vFRk Yk?kzmRRkj h,k Ik' Uk

- 1- CkhTk LkTkhOk gS vFkOkk fUKTkhOk \
- 2- f}CkhTkIkakh CkhTk fdLk Ikzdkj ds gkRks gS
- 3- HkwwkIkkskh CkhTkka ds fdLk HkkXk Eka HkksTkuK , dek jgRkk gS
- 4- Hkwwk fdLks dgrks gS
- 5- vrdj .k dh fØ,kk Eka LkCkLks IkgYks IkkSkka dk dksk Lk HkkXk Ckkgj fUkdYkRkk gS

- 6- , dCkhTklk<ekh fdLk lkdj ds gk&ks g\$
- 7- v&dj .k ds lk' PkrRk fdLk HkkXk ds }kjk lkj ksj dk fUkEkZ k gk&kk g\$
- 8- v&dj .k ds lk' PkrRk TKM+dk fUkEkZ k fdLkds }kjk gk&kk g\$
- 9- v&dj .k ds fyk, D,kk vkOk' ,kd g\$
- 10- EkDdk ds nkUks ds fdLk HkkXk Eka HkkSTkUk Lk&PkrRk jgRkk g\$
- 11- fdLk lks&ks Eka v/kk&kk&Ek v&dj .k lkk,kk TkrRkk g\$
- 12- PkUks ds fdLk HkkXk Eka HkkSTkUk RRok , d<<k jgRkk g\$
- 13- Lk&Ek ds CkhTk Eks fdLk lkdj dk v&dj .k lkk,kk TkrRkk g\$

Yk?k&Ukj h, k lk' u

- 1- v&dj .k dh vkOk' ,kd lkj fLFkrRk, k; dks&dks Lkh g\$
- 2- EkDds ds nkUks ds Yk&ORk dkV dk Ukk&krRk fP&ek CkUkb, ks
- 3- CkhTkka ds vkfFkd EkGRok fyf[k, \
- 4- Ek&kk&dj RkFkk lk&dj Lks f&dfLkrRk gk&ks OkkYks v&ka ds Ukk&ek fyf[k, \
- 5- Hk&kk&sk D,kk g\$ bLkds dk, kz fyf[k, \
- 6- PkUks ds f&fHkUk v&ka ds Ukk&ek fyf[k&dj dk, k& dk Ok. k& dhfTk, \
- 7- vj& ds CkhTk ds v&dj .k dh f&fHkUk lkk&f&vka dk Ukk&krRk fP&ek CkUkb, ks
- 9- v&dj .k f&RkUks lkdj dk gk&kk g\$
- 10- CkhTk&< dgk; gk&ks g\$ RkFkk mLkds D,kk&D,kk dk, kz g\$
- 11- CkhTk f&RkUks lkdj dk gk&kk g\$ lR, kd ds nk&nks mnkj .k nhfTk, \
- 13- v/kk&kk&Ed v&dj .k Lks vkIk D,kk Lk&ORks gks

nh?k&RRkj h, k lk' Uk

- 1 EkDds ds nkUks dh Lkj PkUk dk Lk&P&ek Ok. k& dhfTk, ks RkFkk bLkds v&dj .k dh f&fHkUk v&f&vka dk fP&ek CkUkb, ks
- 2- , dCkhTklk<ekh, k RkFkk f}CkhTklk<ekh CkhTkka Eka D,kk v&kj g\$ mnkj .k Lk&gRk Lk&ORks, ks
- 3- PkUk ds CkhTk dk Lk&P&ek Ok. k& dhfTk, \

- 4- vadj .k fdLks dgRks gS ,sfdRkUks Ikzdkj ds gkRks gS vjM ds CkhTk ds vadj .k dk LkFPkæk Ok. kzk dhfTk, \
- 5- v/kkHkEkd RkFkk mlkfjHkEkd vadj .k fdLks dgRks gS PKUs ds CkhTk ds vadj .k dk LkFPkæk Ok. kzk dhfTk, \
- 6- dSks fLk) dj kks fd CkhTk , d Hkwh,k Ikskk gS
- 7- Hkwhkkskh , Oka vHkwhkkskh CkhTk Lks vkik D,kk LkEÖRks gS f}CkhTkækkh vHkwhkkskh CkhTk ds mnkgj .k nhfTk, \
- 8- , dCkhTkækkh RkFkk f}CkhTkækkh CkhTka Eka D,kk vBkj gS mnkgj .k LkfgRk LkEÖkks ,ks

bdkbz9

Ikdjkh,k Iksk QYk , Oka IknkdYk & ¼½ , d Ikdjkh,k Iksks ds fofHkUk HkXk Ok/khZ , Oka TkUk HkXk ½½ QYk dh LkjPkUkk] QYkka dk OkXkhZdj .ka ¼½ Iknik dYk&1- EkkYkOkLkh 2- Yk ,kfeUkkLkh Iknik dYk dk vkfFkd EkgRk] dYk Ikdjkh dk Ok. kzk

vH, kLkfkZ Ik' u ¼k. M&1½

Yk?kqRRkj h, k Ik' Uk

- 1- IkfRRk, kq RkUs ds fdLk HkXk Lks fukdYkRkh gS
- 2- Ikj ksj Rkæk Hkwh ds fdLk HkXk Lks fofLkRk gkRk gS
- 3- Iksks dk Ukj TkUkækk dks&Lkk vZk gS
- 4- Iksks ds fdLk HkXk ds }kj Ikzdk' k Lk Yks. k dh fØ,kk gkRkh gS
- 5- f}CkhTkækkh Ikskka Eka Tkm&Rkæk fdLk Ikzdkj gkRk gS
- 6- v. Mk. kq dk fukEkkZ k dgk gkRk gS
- 7- Ikdjkh ds dks&dks Lks vkOk' ,kd vZk gS
- 8- Ik. kZ Lk/k fdLks dgRks gS
- 9- Ikdjkh,k Iksks dks fdRkUks HkXkka Eka CkqVk Tk LkdRk gS
- 10- IkfRRk, kka ds fdRkUks HkXk gkRk gS
- 11- Iksks ds fdLk HkXk ds }kj mRLkknuk dh fØ,kk gkRkh gS

Yk?kqRRkj h, k Ik' Uk

- 1- EkvRkæk Lks vkik D,kk LkEÖRks gS bLkds Ikekq'k dk, kZ dks LkEÖkks ,ks

- 2- TKMf dRkUks Ikdkj dh gkBlh gS bukdS UkkEk FYkf [k, \
- 3- RkUks ds IkEq [k dk, kz CkRkkb, kS
- 4- IkRRkh dk mLkds vOk, kOkka dks n' kRks gq UkkEkf dRk fPk«k CkUkkb, kS
- 5- Lkj Yk vksj Lkq dRk IkRRkh Eka D, kk vBkj gS
- 6- IkRRkh fdLks dgRks gS. bLkds IkEq [k dk, kz dks FYkf [k, A
- 7- IkqIk ds Lkg, kd RfFkk vfUkOk, kz vBk dSk&dSk Lks gS. UkkEk FYkf [k, A
- 8- IkqIk ds Uj RfFk Ekknk TkUkKkKka ds UkkEk FYkf [k, A
- 9- Ik d, kj RfFk L«khd, kj ds UkkEkf dRk fPk«k CkUkkb, kA
- 10- IkqIk ds IkRk IkEq [k dk, kz FYkf [k, A
- 11- f} CkTkkk kh IkSks Eka fdLk Ikdkj dh TKMf- Ik, kh TkkRkh gS.

nh?kz mRRkj h, k Ik' Uk

- 1- JEK fOkHkTkUk Lks vktk D, kk LkEkÖRks gS. JEK fOkHkTkUk ds vk/kkj Ij IkSks dks fdRkUks HkkkKka Eka Ckq/vk Tkk LkdRkk gS
- 2- fdLkh Ikt: fkd IkSks ds fOkHkUk vBkka dk LkfPk«k Ok. kZk dhfTk, \
- 3- Ok/khZ vBk fdLks dgRks gS. bLkds vBkXkRk vkUks OkYks vBkka ds UkkEk RfFk dk, kz FYkf [k, A
- 4- Ikj ksj Rk«k RfFk TKM Rk«k Eka D, kk vBkj gS. Ikj ksj Rk«k Eka dSk&dSk Lks HkkkKk gkBlh gS
- 5- IkqIk ds fOkHkUk vBkka dks n' kRks gq UkkEkf dRk fPk«k [khPk, RfFk IkR, kd vBk ds dk, kz FYkf [k, A
- 6- RkUk fdLks dgRks gS. bLkds IkEq [k dk, kz dks Ok. kZk dhfTk, A

vH, kLkFkz Ik' u ¼ [k. M&2½

vFRk Yk?k mRRkj h, k Ik' Uk

- 1- Ik d, kjh UkkYk fdLk dYk ds IkSks ds IkqIkka Eka IkkbZ TkkRkh gS
- 2- nkYk dYk dk UkkEk FYkf [k, kA
- 3- EkVj fdLk dYk dk LknL, k gS
- 4- IkqIkØEk Lks fOkdfLkRk QYkka dks fdLk UkkEk Lks TkUk TkkRkk gS

- 5- VEIgj BMLk bāMdk OkkUKLlFRkd UkkEk OkkYkk IkkSkk dkBk Lks dYk dk gS
- 6- fdLk IkqIk Eka , d LkYkkkIk IkpLk.kj Ikk,ks TkkRks gS
- 7- fTkUk IkqIkka Eka Tkk,kkkIk Ukggha gkRks mUga fdLk UkkEk Lks TkkUkk TkkRkk gS\
- 8- PkRkRkZkh (Tetrameros) IkqIk fdLk dYk ds IkkSkkka Eka Ikk,ks TkkRks gS
- 9- fdLk dYk ds IkqIkka ds v.Mk'k,k f}dkSBh,k] ,kPRkk.Mlkh RkFkk EkRk v{k Lks YkXks gkRks gS
- 10- EkVj ds IkqIk Eka Tkjk,kq,kkLk (placentation) fdLk Ikzlkj dk gkRkk gS

Yk?kqūkj h,k Ik' u

- 1- fUkEufYkf [kRk 'kCnkOkYkh dks mnkgj.k LkfgRk LIk"V dhfTk, & v& mHk,kfYkdkh]

Ck& , dO,kkLk LkEkfEkRk , Oka f«kT,kk LkEkfEkRk]

Lk& IkFkdnykh,k , Oka ,kPRknYkh,k]

n& v/kkSkk,kkkIk] Ikfj Tkk,kkkIk , Oka mlkfj Tkk,kkka
- 2- fVllk.kh fYk [kk&

v& ØlkkhOkEkZ , Oka IkSIfYk,kkSksLkLk dkj kYkk]

Ck& CkhTkk.MU,kkLkA
- 3- fUkEufYkf [kRk IkkSks fdLk dYk Eka vkrks g&

v& dIkLk] Ck& XkkBkh]

Lk& vkYkq n& bEkYkh]

b& LkEkA
- 4- fdUgh nks IkkSkkka ds UkkEk Ok dYk fYkf [k, fTkUkLks vkskf/k IkkIRk gkRkh gS
- 5- j's ks lknkuk dj Uks OkkYks fdUgh Pkkj IkkSkkka ds UkkEk , Oka dYk fYkf [k,kA
- 6- fUkEufYkf [kRk IkqIk Lkww fdLk dYk ds g&

$$(i) \quad Br, \oplus, \overset{\circ}{\underset{\circ}{\text{♀}}} K_{2+2}, C_4, A_{2+4}, \underline{G}_{(2)}$$

$$(ii) \quad Br, \%, \overset{\circ}{\underset{\circ}{\text{♀}}} K_5, C_{1+2+(2)}, A_{1+(9)}, \underline{G}_1$$

- 7- EkkYkOkk.kh dYk ds fOkHknd Yk{k.k fYkf[k,ks , Oka dYk dk IkqIk Lkwk fyf[k,k&
 - 8- fUkEufYkf[kRk dYkka ds lkkPk&lkkPk vkfFkZl EkgROk ds lkkSkka ds Ukkek fYkf[k,k&
- ¼½ EkkYkOkk.kh] ¼C½ EkkbLkk.kkbbVh] ¼ ½ lkkfYk,kkks/hA

nh?kzmÜkj,h,k Ik' u

- 1- Yk.kkEkkUkk.kh dYk ds vURkXkRk dkSk&dkSk Lks mlkdYk vRks g& buk mlkdYkka Eka nYk fOU,kkLk RkFk IkqIk.kj ka ds Xkqkka ds vk/kkj Ikj vURkj LIk"V dhfTk,k&
- 2- lkkfYk,kkks/h dYk ds fOkHknd Yk{k.kka dks fYk[kRks gq bukds EkgROk fYkf[k,k& IkqIk Lkwk fy[k; s RkFk IkqIk fPk«k cukb,k&
- 3- EkkYkOkk.kh dYk ds fOkHknd Yk{k.k , Oka IkqIk Lkwk fYkf[k,k&
- 4- EkkYkOkk.kh dYk ds IkqkZk , Oka Tik,kkZk dh fOk' kSkRk CkRkRks gq bLk dYk ds lkkSk dk EkgROk fYkf[k,k&A
- 5- fUkEuk lkkSkka ds IkqIk fPk«k cukb; s , Oka IkqIk Lkwk fYkf[k; & XkqYk] Ekvj vEYkRkLk] CkCkYkA

vH,kkLkFkZ Ik' u ¼[k.M&3½

vFRkYk?kqmÜkj,h,k Ik' u

- 1- IkqIk fdLk HkkXk }kj QYk dk fUkEkZ.k gkRk g&
- 2- vf"B QYk ds dñ mngj.k CkRkb,k&
- 3- LkURkj fdLk lkdj ds QYk dk mngj.k g&
- 4- LkSk ds [kkUs,kk,k HkkXk dk Ukkek CkRkb,k&
- 5- LkXkFkRk QYk fdLks dgrks g& \ vākhj fdLk lkdj ds QYk dk mngj.k g&
- 7- LkR,k QYk IkqIk ds fdUk HkkXkka Lks fOkdfLkRk gkRk g&

Yk?kqmÜkj,h,k Ik' u&

- 1- fUkEu lkdj ds QYkka dh fOk' kSkRk CkRkRks gq mngj.k nhfTk, & lkkQYk] jXEk]MMk] CkghA
- 2- fUkEuk QYkka ds [kkUs,kk,k HkkXk fYkf[k, & vEkkvj] vkEk] v[kjks] dkTq] Ukkfj,kYk] vUkkj LkhrkQYk] Ekvj] bEYkha
- 3- lkkks , Oka lkkQYkka ds nks&nks mngj.k CkRkb,k&
- 4- fUkEufYkf[kRk QYkka Eka LkR,kQYk , Oka dñ/QYk CkRkb,k& XkqYk] khj] dVgYk] LkSk] vkhj]

Xkŕkj] vUkkj vkfnA

- 5- QYk Lks D,kk LkEkÖkRks gks. bLkds mlk, kkkk fYk [kka
- 6- mnkgj .k LkfgRk LkdkFFkRk QYkka dh fok' kSkRkk CkRkkb, A

nh?kzmÜkj h, k Ik' u &

- 1- QYk Lks vkkk D,kk LkEkÖkRks g& LkR, k , Oka vLkR, k QYk fdLks dgRks g& mnkgj .k n&j LkEkÖkbb, ks
- 2- QYkka dk OkXkhdj .k dhfTk, , Oka mUkds IkEkq'k oxk& ds UkkEk , Oka mnkgj .k nhfTk, k&
- 3- 'ktd QYk fdLks dgRks g& bLkd fokfHkUk Ik&dkj ka dk mnkgj .k LkfgRk Ok. k& dhfTk, A
- 4- Ikq'k QYk fdLks dgRks g& bLkds Ik&dkj fYkf [k, k&
- 5- dkbz lkkPk Ik&dkj ds Xmn&nj QYkka dk mnkgj .k fPk<< LkfgRk LkEkÖk&dj [kkUks, k&, k HkkXkka ds UkkEk fYk [kka
- 6- LkjLk QYk fdLks dgRks g& vkkds }kjk v/, k, kUk fd, ks Xk, ks LkjLk QYkka dk Lkfpk<< Ok. k& dhfTk, k&

bdkbZ10

¼½ jk&kk&gd Tkh&ka dk v/, k, kUk&, UVvEkh&kk] EkPNj] gpOkEk&QhRkkÑfEk dk Ck'k vk&dkj] mRlké jk&kk& Lks CkPk&ok , Oka vkfFk& Ekgr&ka

½½ dks' kdk RkFkk mÜkdA

v- dks' kdk dh lkfjHkk"kk] LkjPkUkk] dk, k&

c- dks' kdk fokHkkTKUk] Ik&dkj , Oka Ekgr&ka

I - mÜkd] lkfjHkk"kk] Ik&dkj] dk, k&

vH, kkLkkFkZ Ik' u

vfRkYk?kpmÜkj h, k i' z u

- 1- EkUk&, k ds 'kjhj ds fdLk HkkXk Eka , .VvEkh&kk fgLVksfYkfVdk lkk, kk TkkRkk g&
- 2- vEkh&kk, kk lksPk' k jk& fdLkds }kjk mRlké gk&kk g&
- 3- EkYk&fj, kk jk& ds l&jTkh&kh dk Ok&gd dks&&Lkk TkURkq g&\
- 4- QkbYk&fj, kk jk& QsYkkUks OkYks EkPNj dk UkkEk CkRkkb, ks.

- 5- Ekknk , blkkfQYkhTk EkPNj vlluks vM/s dgkj nBkh gS.
- 6- EkkukOk ds vjrk Eka lkk,ks Tkkuks OkkYks nks vURk% lKj TkhfOk, kka ds UkkEk CkRkkb, kA
- 7- Qhrkk ÑfEk fdLk lkdKj dk lKj TkhOkh gS.
- 8- gpd OkEkZ 'kj hj ds fdLk HkkXk Eka lkk,ks TkkRks gS.
- 9- Qhrkk ÑfEk ds f}Rkh, k lkkSkd dk UkkEk CkRkkb, kA
- 10- Ekukq, k gpd OkEkZ }kjk dS,ks LkØfEkRk gkRkk gS.
- 11- Ekknk , blkkfQYkhTk EkPNj , d Ckkj Eka fdRkUks v. Ms nBkh gS.
- 12- EkPNj dk 'kj hj fdRkUks HkkXkka Lks fEKYkdj CkUkk gkRkk gS\
- 13- EkPNj ds TkhOkuk PkØ dh vOkLFkkvka ds UkkEk CkRkkb, kA D, kYkDLk lkkS- EkPNj nhOkj Eka fdLk lkdKj CkBRkk gS.

Yk?kqñUkj h, k lK' u

- 1- lKj TkhOkh fdLks dgRks gS. lKj TkhfOk, kka ds lkdKj CkRkkb, kA
- 2- gpd OkEkZ D, kk gS, kg fdLk lkdKj Ekukq, k ds fyk, gkfukdkjd gS.
- 3- EkPNj dk vkfFkd EkGRok LkEkÖkkb, kA
- 4- fdUgha nks vURk% lKj TkhfOk, kka dk UkkEk fykf [k, kA fdLkh, d dk vkfFkd EkGRok LkEkÖkkb, kA
- 5- lKfPKLk jkkk fdLkds }kjk QYkRkk gS. mLk lkk. kh dk UkkEk Ok TkhOkuk PkØ dk Ok. kzk dhfTk, A
- 6- , blkkfQYkhTk RkFkk D, kYkDLk EkPNj ka ds TkhOkuk PkØ Eka vURkj CkRkkb, kA
- 7- EkYkSj, kk lKj TkhOkh EkPNj fdLk lkdKj dk TkhOkuk PkØ PkYkRkk gS. LkFPk«k Ok. kzk dhfTk, A

nh?kZ mUkj h, k lK' Uk

- 1- vkfFkd TkhOk fokKkuk Lks vkik D, kk LkEkÖRks gS. EkkukOk ds fyk, gkfukdkjd TkURk, ka lKj Lkaf[kIRk fukCkalk fykf [k, kA
 - 2- EkYkSj, kk lKj TkhOkka ds TkhOkuk PkØ dk LkFPk«k Ok. kzk dhfTk, kA
 - 3- EkPNj ds TkhOkuk PkØ dk Ok. kzk dhfTk, ks RkFkk EkPNj ka Lks CkPkUks ds mlkk, kka dk mYYkS[k dhfTk, kA
 - 5- fUkEukfykf [kRk lKj fvllk. kh fykf [k, kS&
- 1- Qhrkk ÑfEk] 2- gpd OkEkZ 3- EkPNjA

6- , . VvEkhCkk fgLVksfYkfVdk ds TkhOkUk PkØ dk LkfPk«k Ok. BUK dhfTk, kA

vH, kLkFkz Ik' u ¼k. M&2½

vFRkYk?kpmÜkj h, k Ik' u

- 1- dks' kdk fdLks dgRks gS
- 2- dks' kdk fLk) kRk D, kk gS
- 3- CkrmfUk, kUk Xkfrk D, kk gkRkh gS
- 4- TkhOkæ0, k Lks D, kk RkRk, kz gS
- 5- dæed ds dk, kz CkRk, A
- 6- DNA ds dk, kz CkRk, A
- 7- RNA ds dk, kz CkRk, A
- 8- EkUkOk Eka f)Xkf. kRk ØkEkLkEk dh Lkq, kk CkRk, A

Yk?kq mÜkj h, k i' u

- 1- EkKbVkskV. M, kk dks dks' kdk dk ÅTkkZkig D, kka dgRks gS \
- 2- IkKkhj kbCkLkEk D, kk gS
- 3- YkLkLkEk dks vkREGR, kk djUks OkkYkh FkYk, kk; D, kka dgRks gS
- 4- XkWTkhdk, k dh jPkUk , Oka dk, kz CkRk, A
- 5- j kbCkLkEk D, kk gS. buKds dk, kz dks fYk[k, A
- 6- F, d. k dgk; Ik, ks TkkRks gS. buKds dk, kz dks fYk[k, A
- 7- bYkDVruk LkqEkn' khz Eka fn[kkbZ nBks OkkYkh TkURkq dks' kdk dk UkkEkfdrk fPk«k CkUkk, A
- 8- EkKbVkskV. M, kk fdLk Ikdkj CkURks gS. buKds dk, kz dk mYYk[k dhfTk, A
- 9- dæed ds dk, kz dk mYYk[k dhfTk, A
- 10- DNA RkFk RNA Eka dkBZ RkhUk vURkj fYk[k, A
- 11- dks' kdk fLk) kURk D, kk gS. bLks fdLkUks IkfrkIkfnRk fd, kk \
- 12- RNA D, kk gS, ks fdRkUks Ikdkj ds gkRks gS

nh?kzmÜkj h, k Ik' u

- 1- Tkh0æ0, k Lks D, kk RkkRik, kz gð \ bLkds HkksRkd Ok jkLkk, kfUkd Xkqkka dk Ok. kzk dhfTk, A
- 2- , d TkURkq dks' kdk dk UkkEkkaðRk fPk«k CkUkkdj mLkds fOkfhkÉ HkkXkka ds dk, kz CkRkkb, A
- 3- EkkbVksdkW. M, kk dh LkjPKUkk dks fPk«k LkfgRk LkEkÖkkb, A
- 4- dðæd dh jPKUkk RkFkk dk, kz dks LkEkÖkkb, A
- 5- , . MksYkkfTEkd jð/hdYkEk RkFkk jkbCkkLkkEk dh jPKUkk RkFkk dk, kz dks Lkqkik Eka LkEkÖkkb, A
- 6- XkqkLkæk D, kk gð. bLkdh jPKUkk dks Lkqkik Eka LkEkÖkkb, A

vH, kkLkkfkz Ik' u ¼k. M&2v½

vFRKYk?kqmÜkj h, k Ik' u &

- 1- v) Lkækh fOkHkkTkUk dh fdLk vOkLFkk Eka XkqkLkækka dk , kqEKUk gkRkk gð.
- 2- LkEkLkækh fOkHkkTkUk dh fdLk vOkLFkk Eka Lks VksEk, kj fOkHkkfTRk gkRkk gð.
- 3- dks' kdk fOkHkkTkUk ds LkEk, k Rkdz RKURkq XkqkLkæk ds fdLk HkkXk Lks Tkq/s gkRks gð.
- 4- v) Lkækh fOkHkkTkUk Eka ØkWLkðk vkskj dh ?kVUkk fdLk vOkLFkk Eka lkk, kh TkkRkh gð.
- 5- fLUksfLkLk dh ?kVUkk fdLk vOkLFkk dk Yk{k. k gð.
- 6- nfgd dks' kdk Eka fdLk lkdj dk fOkHkkTkUk gkRkk gð.
- 7- dðæd ds fOkHkkTkUk dks D, kk dgRks gð.
- 8- v) Lkækh fOkHkkTkUk dh lksðhVhUk vOkLFkk dks LkEkÖkkb, A
- 9- LkEkLkækh fOkHkkTkUk dh Ekð/kQst'k vOkLFkk dk Lkfpk«k Ok. kzk dhfTk, A
- 10- LkEkLkækh fOkHkkTkUk ds Ckn CkUk EkkUOk dks' kdk Eka fdRkUs XkqkLkæk lkk, ks TkkRks gð.

Yk?kqmÜkj h, k Ik' u

- 1- Lkækh Ok v) Lkækh dks' kdk fOkHkkTkUk Eka D, kk vURkj gð.
- 2- dks' kdk æ0, k fOkHkkTkUk lkj Lkð{kIRk fvIik. kh fYkf [k, A
- 3- v) Lkækh fOkHkkTkUk dh lkkQst'k lFkEk dh mlk&vOkLFkkvka dk Lkfpk«k Ok. kzk dhfTk, A
- 4- lkkðks , Oka TkURkq/ka ds Lkækh fOkHkkTkUk Eka vURkj CkRkkb, A
- 5- v) Lkækh fOkHkkTkUk ds RkhUk EkgRok CkRkkb, A

- 6- Lks VrkEk, kj dk dks' kdk fOkHkkTkUk Eka D, kk EkgRok gS
- 7- fUkEu Ikj Lk{KIRk fVIlk.kh FYkf[k, &
 ¼½ fLkUksfLkLk] ¼ii½ fd, TEkk] ¼iii½ ØkNLkKk vkSkj] ¼v½ Rkdq RKURkq ¼w½ ØkEkSVM

nh?kzmÜkj h, k Ik' u &

- 1- Lkwwka RkFkk v) Lkwwk fOkHkkTkUk dh RkykUkk dhfTk, \
- 2- Lkwwk fOkHkkTkUk fOkfHkUk vOkLFkkva dk LkFPk«k Ok. kZk dhfTk, \
- 3- RkUks ds f' k[kkxz dh dks' kdkvka Eka gkSkS OkYkK fOkHkkTkUk dk mYYks[k dj Rks gg mLkdh fØ, kk&fOkf/k dks LkEkÖkkb, kS
- 4- IkknIk dks' kdkvka Eka v) Lkwwk fOkHkkTkUk dk LkFPk«k Ok. kZk dhfTk, \

vH, kLkKfKz Ik' u ¼[k. M&2c] I ½

vFRkYk?kqRRkj h, k Ik' Uk &

- 1- jDRk D, kk gS
- 2- ÅRkd fdLks dgRks gS
- 3- jkEkHkh mlkdYkK ÅRkd dgkj Ikk, kk TkkRkk gS
- 4- jS[kRk Iks kh dks, sPNd ÅRkd D, kka dgRks gS
- 5- LkqkS'kh ÅRkd fdLks dgRks gS
- 6- jDRk fdLk IkZkj ds ÅRkd dk mnkgj. k gS
- 7- vUkSPNd Iks kh ds nks mnkgj. k OkRkkb, kS

Yk?kqRRkj h, k Ik' Uk &

- 1- ÅRkd D, kk gS, kg fdRkUks IkZkj dk gkRkk gS
- 2- mlkdYkK ÅRkd dgka Ikk, kk TkkRkk gS bukdS Ekq, k IkZkj FYkf[k, \
- 3- LkqkS'kh ÅRkd D, kk gS, ks fdRkUks IkZkj dk gkRkk gS
- 4- , d Rkædh, k ÅRkd dk UkkEkKfdRk fPk«k OkUkkb, kS
- 5- OkLk, k ÅRkd D, kk gS bukdS dk, kz FYkf[k, \
- 6- vjS[kRk Iks kh dh jPkUk LkEkÖkkb, kS, ks Iks' k, kKj dgkj fEkYRkH gS

- 7- ân,kd Iks kh dh LkjPKUkk fPk«k dh Lkgk,kRkk Lks Llk"V dhfTk, \ , Oka dk,kz fYkf[k, \
- 8- , sPNd , Oka vUksPNd Iks kh Eka vRkj CkRkkb,kS
- 9- ÅRkd D,kk gS , flkFkhfYk,kEk ÅRkd dh fok'ksRkk, j fYkf[k, \

nh?kzmRÜkj,h,k Iks Uk &

- 1- Lkakkstkh ÅRkd dh fok'ksRkk, j , Oka dk,kz fYkf[k, \
- 2- j s[kRk Iks'k,kkadks, sPNd ,kk d«dkYkh Iks'k,kk; D,kkadgrks gS ,ks' kjhj dsfdUk LFkkUkkaIkj fEkYkRkh gS j s[kRk Iks kh dh jPKUkk UkkEk«dRk fPk«k dh Lkgk,kRkk Lks Llk"V dhfTk, \
- 3- mlkdYkk ÅRkd D,kk gS ,ks fdRkUks Ik«lkj ds gk«ks gS bukdS dk,kz fYkf[k, \
- 4- Iks kh ÅRkd D,kk gS bukdh LkjPKUkk , Oka dk,kz fYkf[k, \

OkLRkqUK"B Ik' Uk

bdkbz 1

IkknFKZ ds LkkEkkU_k Xkq k , Oka Lkj Yk Ek' khUka

cgfodYih; izu

I gh fodYi fy[kks

- 1- Okk_kkqkA/Ykh_k nkCk dk EkkIKUK bLk_kkæk Lks fd_kk TkkRkk g&
 $\frac{1}{a}\frac{1}{2}$ CkS kEkVj Lks $\frac{1}{b}\frac{1}{2}$ nkCk EkhVj $\frac{1}{c}\frac{1}{2}$ nkCk_kæk $\frac{1}{d}\frac{1}{2}$ dkbz UkghA
- 2- Bkkk vj æok dk vkkk{k d ?kURok Kkrk djUks ds fyk, bLk_kkæk dk mlk_kkæk fd_kk TkkRkk g&
 $\frac{1}{a}\frac{1}{2}$ nkCkEkkIk $\frac{1}{b}\frac{1}{2}$ fukdYLkuk æokEkkIk $\frac{1}{c}\frac{1}{2}$?kURokEkkIk $\frac{1}{d}\frac{1}{2}$ mlk_kkæk LkhkA
- 3- d{kh} bLk OkkZ ds mRRkkYkd dk mnkj.k g&
 $\frac{1}{a}\frac{1}{2}$ IkFEk $\frac{1}{b}\frac{1}{2}$ f}Rkh_k $\frac{1}{c}\frac{1}{2}$ RkRkh_k $\frac{1}{d}\frac{1}{2}$ PkRkqkZ A
- 4- vkn'kz Ek' khUk dh n{kRkk gkRkh g&
 $\frac{1}{a}\frac{1}{2}$ 50% $\frac{1}{b}\frac{1}{2}$ 75% $\frac{1}{c}\frac{1}{2}$ 100% $\frac{1}{d}\frac{1}{2}$ 0 %
- 5- CkS kEkVj bRkUks Ikdkj ds gkRks g&
 $\frac{1}{a}\frac{1}{2}$ Pkkj $\frac{1}{b}\frac{1}{2}$, d $\frac{1}{c}\frac{1}{2}$ RkhUk $\frac{1}{d}\frac{1}{2}$ nkA
- 6- Hkj@vk_kkEk dgYkkRkk g&
 $\frac{1}{a}\frac{1}{2}$ OkkkkUkkkRk $\frac{1}{b}\frac{1}{2}$ kkkkd YkkHk $\frac{1}{c}\frac{1}{2}$ Ek' khUk dh n{kRkk $\frac{1}{d}\frac{1}{2}$ nkCkA
- 7- ?kURok dk SI Ekkkd bdkbz g&
 $\frac{1}{a}\frac{1}{2}$ kg/m³ $\frac{1}{b}\frac{1}{2}$ g/cm³ $\frac{1}{c}\frac{1}{2}$ N/m³ $\frac{1}{d}\frac{1}{2}$ Bar
- 8- LkEkkUk ?kURok dk dkbz fik.M TkYk Eka MkYkUks Ikj &
 $\frac{1}{a}\frac{1}{2}$ Mkk Tkk_kkk
 $\frac{1}{b}\frac{1}{2}$ TkYk dh vk/kh Xkjkbz Ikj RkSkk
 $\frac{1}{c}\frac{1}{2}$ TkYk ds RkYk Eka IkwkZ : Ik Lks Mkk gqk RkSkk
 $\frac{1}{d}\frac{1}{2}$ vk'kd Mkk gqk RkSkk

- 9- 4°C RkkIk Ikj 'kqEk lkkUkh dk ?kUKROk gkRkk g&
- $\frac{1}{a}\frac{1}{2} 10^3 \text{ kg/m}^3$ Lks dEk $\frac{1}{b}\frac{1}{2} 10^3 \text{ kg/m}^3$ Lks vf/kd
- $\frac{1}{c}\frac{1}{2} 10^3 \text{ kg/m}^3$ ds Ckj kCkj $\frac{1}{d}\frac{1}{2} 1 \text{ kg/m}^3$ ds Ckj kCkj
- mRRkj & 1- $\frac{1}{a}\frac{1}{2}$ 2- $\frac{1}{b}\frac{1}{2}$ 3- $\frac{1}{a}\frac{1}{2}$ 4- $\frac{1}{c}\frac{1}{2}$ 5- $\frac{1}{d}\frac{1}{2}$ 6- $\frac{1}{b}\frac{1}{2}$ 7- $\frac{1}{a}\frac{1}{2}$ 8- $\frac{1}{c}\frac{1}{2}$ 9- $\frac{1}{e}\frac{1}{2}$

fj DRk LFKkUKka dh lkrRkZ dhFTk, &

- 1- fPEkVv &&&&OxkZ dk mRRkkykd g&
- 2- Ek' khUk }kj k YkXkk, kk Xk, kk CkYk mLkd &&&&&& dgYkRkk g&
- 3- æOEkklkh &&&&& ds fLknEkRk Ikj dk, kz djRkk g&
- 4- LkEkæ dk &&&&& Uknh Lks vf/kd gkRks ds dkj .k] mLk lkjRkSukk vLkUk gkRkk g&
- 5- dq j Lks lkkUkh [khpkuks gRkq &&&&&&f?kjUkh dk lk, kkk fd, kk TkRkk g&
- mRRkj 1& RkRk, k 2- vk, kEk 3- gkbMkTuk 4- ?kUKROk 5- , dYkA

Lkgh TkMh CkUkbb, k&

	$\frac{1}{a}\frac{1}{2}$	$\frac{1}{c}\frac{1}{2}$
1-	Rkj kTk	$\frac{1}{a}\frac{1}{2}$ Ek' khUk lkj YkXkk, kk Xk, kk CkYk
2-	Lkj kRk	$\frac{1}{b}\frac{1}{2}$ Ek' khUk }kj k mBk, kk Xk, kk CkS
3-	fPEkVv	$\frac{1}{c}\frac{1}{2}$ lFEk lkdj dk mUkkykd
4-	vk, kEk	$\frac{1}{d}\frac{1}{2}$ f}Rk, k lkdj dk mRRkkykd
5-	Hkj	$\frac{1}{e}\frac{1}{2}$ RkRk, k lkdj dk mUkkykd

mRRkj 1- $\frac{1}{c}\frac{1}{2}$ 2- $\frac{1}{d}\frac{1}{2}$ 3- $\frac{1}{e}\frac{1}{2}$ 4- $\frac{1}{a}\frac{1}{2}$ 5- $\frac{1}{b}\frac{1}{2}$

LkR, k@vLkR, k fYkf [k,

- 1- CkS kEkVj ds lkkjs dk /kUKROk dEk gkRks lkj] ,kg lRkk PkYkRkk gSfd Okk, kq dk nkCk dEk g&
- 2- LkEkæ Ok Uknh nkkka Eks BkSukk , d LkEkUk gkRkk g&
- 3- lFOkh ds RkYk Lks ÅPk TkUks lkj Okk, kq dk ?kUKROk Ck<Rkk g&
- 4- vEk dkVUs dk Lkj kRk f}Rk, k Js kh dk mRRkkykd g&
- mRRkj 1- LkR, k 2-vLkR, k 3-vLkR, k 4- LkR, k

, d 'kCn Eka mRRkj nhfTk,

- 1- vkn'kz Ek' khuk dh n{kRkk fdRkukh gkRkh gS
 - 2- Okk,kpkCk dk Ekkikuk fdLk ,kæk }kj k fd ,kk TkkRkk gS
 - 3- , d Lkh/kh ,kk Ekp/h gpZydMh Tkks vkYkæk Ikj LOkRkækRkkikRkZd ?kñk LkdRkh gS D ,kk dgYkkRkh gS
 - 4- Rkj kTkw ,kkækd Ykkhk fdRkuk gkRkk gS
- mRRkj & 1- , d 2- Okk,kpkCkEkkikh 3- mRRkkykd 4- , d A

bdkbz2

Å"Ekk] PkYkuk] Lkkguk] fokfdj .k] vkæRkk] 'kjdRkk , Oka dEkh &

cgfodYih; izu

I gh fodYi fy[kks

- 1- C.G.S. IknEkrk Eka XkqRk Å"Ekk dk Ekkækd g&
 1/2 TrYk@XkkEk 1/2 dSYkj h@XkkEk 1/2 dkbz Ukgba A
- 2- Ikt kj døj dk vkfok"dkj bLkUks fd ,kk&
 1/2 MfukLk Iktikuk 1/2 MfokM Iktik 1/2 XYkhLk Mkbz 1/2 Tkkuk Ikkw'j A
- 3- fckTKYkh cYck bLk fokf/k }kj k Ikækf' rRk gkRkk g&
 1/2 PkYkuk 1/2 fok | ðk mRLkTkZk 1/2 fokfdj .k 1/2 x fdj .kka ds Xkqk Lks
- 4- vkñDLk CkDLk Eka CkQZ Ukgba fik?kYRkh gS D ,kkæd Okg Å"Ekk dh gkRkh g&
 1/2 LkpkYkd 1/2 dppkYkd 1/2 LkkEkkU ,k 1/2 Ikj kOkRkZd
- 5- Lkkk/kkj .k Å"Ekk Ekkikuk dh bdkbz g&
 1/2 TkWk 1/2 OkkW 1/2 Rkkik 1/2 dSYkj h
- 6- Rkkik dk SI dk Ekkækd g&
 1/2 fMXkh LkSY ,kLk 1/2 fMXkh OkjWkkgkbV 1/2 dSYOkuk 1/2 fMXkh j ,kñkj
- 7- LkqkZ Lks gEk Rkd Å"Ekk LkpkfjRk gkRkh g&
 1/2 PkYkuk }kj k 1/2 Lkkguk }kj k 1/2 fokfdj .k }kj k 1/2 Rkhukka Lks A

- 8- f0kf' k"V Å"Ekk dk 0,kk0kgkfjd Ekk«kd g&
 ½a½ dSYkkj h ½b½ dSYkkj h IkfRk XkkEk IkfRk °C ½c½ TkWk ½d½ dSYkkj h IkfRk XkkEk
- 9- Å"Ekk dk 0,kk0kgkfjd Ekk«kd g&
 ½a½ TkWk ½b½ dSYkkj h ½c½ fdYkks dSYkkj h ½d½ OkkV
 mÜkj & 1- ½b¼ 2-½a½ 3-½c¼ 4- ½d¼ 5- ½d¼ 6-½c¼ 7-½c¼ 8-½c¼ 9- ½b½]

fjDRk LFkkUkka dh IkfRkZ dhfTk, &

- 1- OkQZ dh XkkRk Å"Ekk dk EkkUk &&& gSA
- 2- fdLkh Hkh lknkFkZ Eka Å"Ekk &&& ds dkj .k mRiké gkRkh gA
- 3- fUkj lksk vkæRkk dk Ekk«kd &&& gA
- 4- &&&& jÅk dh OkLRkq; vPNh Å"Ekk vOk' kkskd gkRkh gA
 mÜkj & 1- 80 fdYkks dSYkkj h@fdXkk] 2- XkfRk] 3- XkkEk@?kUk LkEkh] 4- Xkgjs jÅk A

Lkgh TkWkh OkUkb, &

	½a½	½c½
1-	TkYk dk DOKFukkad	½a½ 80 dSYkkj h IkfRk XkkEk
2-	OkQZ dk XkYUkkad	½b½ 1 dSYkkj h IkfRk XkkEk IkfRk °C
3-	Okk"lk dh XkkRk Å"Ekk	½c½ 100°C
4-	OkQZ dh XkkRk Å"Ekk	½d½ 0°C
5-	TkYk dh f0kf' k"V Å"Ekk	½e½ 536 dSYkkj h IkfRk XkkEka

mÜkj & 1- ½c¼ 2- ½d¼ 3- ½e¼ 4- ½a½ 5-½b½]

LkR,k@vLkR,k fYkf[k, &

- 1- DOKFukkad lkj dkbZ æOk] Bkt.k vOkLFkk Eka CknYk TkRkk gA
- 2- XkYUkkad lkj dkbZ æOk] Xk.k vOkLFkk Eka CknYk TkRkk gA
- 3- FkEkZk Eka XkEkZ j [kh OkLRkq XkEkZ OkUkh jgRkh gA
- 4- Okk,kk.MYk Eka mIkLFkRk UKkh dks vkæRkk dgRks gA
- 5- lks kj døj dk vkfok"dkj Ýk.k ds OkkKfUkd MfUkLk lksUk Uks fd,kk Fkka
 mÜkj & 1- vLkR,k] 2- vLkR,k] 3- LkR,k] 4- LkR,k] 5- LkR,kA

, d 'kCn Eka mÜkj nhfTk, &

- 1- LkykZ dh XkEkhZ IkFOkh Ikj fdLk fokf/k ds }kj k lkgpRkRk gS
- 2- Lkkslkj] Rkkçkk] Yksgkj] bR, kkfn Å"Ekk ds D; k gkRks gS
- 3- lks kj dplj dk vkfOK"dkj fdLk LkUk-Eka gupk Fkk\
- 4- vkkks{k d vkæBkk fdLk lkj fukHkj djRk gS
- 5- fukOKRk~Eka Å"Ekk PkkYkuk fdruk gkRkk gS

mÜkj & 1- fokfdj .kj] 2- LkPkkYkd] 3- LkUk~1675] 4- RkkIk lkj] 5- 'kw, k A

bdkbZ3

/Okfuk

cgfodYih; izu

I gh fodYi fy[kks

- 1- JO, k Rkj ðkka dh vkOkfÜk gkRk gS

½ 20 Hz Lks dEk	½ 20 Hz Lks 20]000 Hz ds CkhPk
½ 20]000 Hz Lks vf/kd	½ bUkEka Lks dkbZ UkgHa
- 2- /Okfuk RkhOKRk fUkEu lkj fukHkj djRk gS

½ /Okfuk L«kkBk Lks	½ njih /Okfuk L«kkBk dk vkdkj
½ /Okfuk Rkj ðk dk vk, kEk	½ mlk, kPRk LkHk
- 3- /Okfuk lksYkRk dks dgRks gS

½ RkhOKRk dks	½ Rkj RkROk	½ Xkq kRk	½ , ks RkhUkka
---------------	-------------	-----------	----------------
- 4- LkbfXkFRkd LkqOkj /Okfuk dh fok' kskRk gkRk gS

½ RkhOKRk	½ Rkj ROk	½ Xkq kRk	½ , ks RkhUkka
-----------	-----------	-----------	----------------
- 5- EkkUOk d . kz dks fdRkUs HkkXkka Eka Ckq/vk Tk LkdRk gS

½ , d	½ nks	½ RkhUk	½ Pkkj
-------	-------	---------	--------

mRRkj & 1- ½ 2- ½ 3- ½ 4- ½ 5- ½

Lkgh Tkkmh Ckukkb,ks&

- (I)
- | | | | |
|----|---|----|-------------------------------|
| | ¼½ | | ¼½ |
| 1- | ekud d.kz ds izlkj gS | ¼½ | , d /ofu fujks'kh |
| 2- | I kekl; eut; dh JO; /ofu
dh vkofRr gksh gA | ¼½ | nks |
| 3- | /ofu dk ^vo'kkSk.k xqkkad* gS | ¼½ | fuokz ea |
| 4- | /ofu dk I pj.k ugha gks I drk gS | ¼½ | Åtkzo /ofu dk dty
vuqkr ij |
| 5- | QYV gS | ¼½ | 20 dEi u@I d.M |
- mRRkj** 1- ¼½ 2-¼½ 3- ¼½ 4- ¼½ 5- ¼½

- (II)
- | | | | |
|----|-----------|----|-----------------|
| | ¼½ | | ¼½ |
| 1- | dkuk | ¼½ | /Okfuk rkjRo |
| 2- | 'kqj | ¼½ | /Okfuk Lkpkj .k |
| 3- | vk,kek | ¼½ | JOk.ksUæ,k |
| 4- | vkOkfRRk | ¼½ | /Okfuk Ikrnk.k |
| 5- | Ekk/,kek | ¼½ | /Okfuk RkhOkRkk |
- mRRkj** 1- ¼½ 2-¼½ 3- ¼½ 4- ¼½ 5- ¼½

LkR,k@vLkR,k fykf[k, &

- 1- Tkks /Okfuk d.kzlkz,k uk gk\$ mLks Lkpkj /Okfuk dgRks gS.
 - 2- /Okfuk ds xkekuk Eka Ekk/,kek vkok',kd gA
 - 3- Ekk/,kek dk ?kukRok Hkh /Okfuk dh RkhOkRkk Rks IkkkfoRk djRkk gA
 - 4- /Okfuk fujks'kd dk,kz OkkANUkh,k RkFkk vkokANUkh,k /Okfuk nkskba Lks Nq/dkj k Ikkuk gA
- mRÜkj** 1- vLkR,k 2- LkR,k 3- LkR,k 4- vLkR,k A

, d 'kCn Eka mRRkj nhfTk, &

- 1- vkokANUkh,k /Okfuk ,kk 'kqj Lks Nq/dkj k Ikkuk dgYkRkk gA
- 2- fuk,kfEkrk] LkRkRk vkqj vkOkRkz dEi u I s mRtUk gksks OkYkh /Okfuk Tkks d.kzlkz,k gk\$ mLks D,kk dgRks gS.

- 8- Ij Ekk. kq ds dæd Eka gkks g&
 ½ bYkDVNUK ½ Iks/RUK ½ U, kw/RUK ½ Iks/RUK , Oka U, kw/RUK A
 mRRkj 1- ½ 2- ½ 3- ½ 4- ½ 5- ½ 6- ½ 7- ½ 8- ½

fjDr LFkkua dh i frZ dhft , &

- 1- i ks/ku dh [kkt ----- us dh FkA
 2- dænd dh [kkt ----- us dh Fk A
 3- byDVNU dh [kkt ----- us dh FkA
 4- U; w/RU dh [kkt ----- us dh FkA
 5- ----- dks vkj vf/kd I jy inkFkka eafHkfrtr ugha fd; k tk I drkA
 mRRj % 1- xkYMLVhu 2- jnjQkMZ 3- tst Fkk u 4- pMfod 5- rRoA

Lkgh TkMh Ckukb, ks&

	½	½
1-	Ykkkkkkkkkk	½ fLFkj vUkkkk dk fuk, kEK
2-	Tkkuk MKWVUK	½ Xk.kh, k vk, kRkuk dk fuk, kEK
3-	fjPkj	½ æO, kEkkuk Lkj {k. k dk fuk, kEK
4-	Tks, Yk-IkkmLV	½ Xkf, kRk vUkkkk dk fuk, kEK
5-	XkYk, kkk	½ O, kRØEK vUkkkk dk fEkJ. k

mRRkj & 1- ½ 2- ½ 3- ½ 4- ½ 5- ½

LkR, k@vLkR, k fykf [k, &

- 1- Ij Ekk. kq dk EkkMYk U, kw/Uk Uks fd, kk FkA
 2- fEkJ. k Lknsk fuk" kEkkkh gkks g&
 3- fdLkh Hkh jkLk, kfukd vfHkØ, kk Eka æOk Uk"V Ugha gk& A
 mRRkj 1- vLkR, k 2- vLkR, k 3- LkR, k

, d 'kCn Eka mRRkj nhfTk, &

- 1- UkkbV&Tkuk Ij kLkkm dk Lk& g&
 2- Xk.kh, k Lk& fdLk Ij fukHkj Ugha g&

- 3- fLFkj vUKkkRk fUK,KEk IkFRkIkknRk fd,ka
- 4- ÅTkkZ vUKkkRk 1 % 3 % 2 ,kk LkjYk vUKkkRk fdLkds fUK,KEk ds vUKq Ik gÅ
- mRRkj & 1- N₂O₄ 2- vk,kuk ½kuRo½ 3- TkkLkQ YkPZ IkkmLV 4- XkYkq,kkKd

bdkb& 5

fOkYkš kRkk Xkq kUkQYk

cgfodYi h; i z u

I gh fodYi fy[kks

- 1- vk,kukuk dh fØ,kk dgYkkRkh g&
- 1- fOkYk,kuk dk /kUkkOkš' kRk gkškk 2- fOkYk,kuk dk __.kkOkš' kRk gkškk
- 3- IkknFKZ dk fOkYk,kuk vk,kukka Eka Vw/Ukk 4- IkknFKZ dk ?kYkUkk
- 2- vEYkh,k fOkYk,kuk dk pH Ekkuk gkškk g&
- ½a½ 7 Lks dEk ½b½ 7 ½c½ 7 Lks vf/kd ½d½ bukEka Lks dkbZ Ukgha A
- 3- {kkjh,k fOkYk,kuk dk pH Ekkuk gkškk g&
- ½a½ 7 Lks dEk ½b½ 7 ½c½ 7 Lks vf/kd ½d½ bukEka Lks dkbZ Ukgha
- 4- vk,kuk d.k gkšks g&
- ½a½ /kUkkOkš' kRk ½b½ __.kkOkš' kRk ½c½ vkOkš' kRk ½d½ mnkLkhuk A
- 5- mnkLkhuk fOkYk,kuk dk pH Ekkuk gkškk g&
- ½a½ 7 Lks dEk ½b½ 7 ½c½ 7 Lks vf/kd ½d½ bukEka Lks dkbZ Ukgha A
- mRRkj 1- ½c½ 2- ½a½ 3- ½c½ 4- ½c½ 5- ½b½

fjDRk LFKkUkka dh IkFRkZ dhFTk, &

- 1- &&&& ^{kkjh,k IkFRkj kškd** gÅ
- 2- vk,kuk &&&& Rfkk &&&&& nks Ikakj ds gkšks gÅ
- 3- Ekkq,k ds jDRk dk pH &&&&&gkškk gÅ
- 4- &&&&&&& ?kYkUk' khYk fOkYk,kuk dks IkakkkfOkRk djRkk gÅ
- 5- {kkjh,k fOkYk,kuk dk pH LRkj &&&&& gÅ

mRrj %&1- vEksDk, kEk DYkkg kbM 2- /kukk, kuk] __.kk, kuk 3- 7-35] 4- Rkkik] nkck] fokYk, kuk dh IkñIRk 5- 7 Lks vf/kdA

Lkgh TkñMh Ckukkb, ks&

	$\frac{1}{4}$ / $\frac{1}{2}$	$\frac{1}{4}$ / $\frac{1}{2}$
1-	vEYkh, k fokYk, kuk dk pH gkRkk gS	$\frac{1}{4}$ / $\frac{1}{2}$ pH LdYk
2-	vEYkh, k Ok {kkj, h, k fokYk, kuk ds LdYk dks dgRks gS	$\frac{1}{4}$ / $\frac{1}{2}$ 7 Lks 12 Rkd
3-	gkbMIRkT, kuk Ok gkbMIRkDLkYk vk, kuk dk Llkæ. k LkEkuk gkñks lkj mLks dgk TkkRkk gS	$\frac{1}{4}$ / $\frac{1}{2}$ 7 Lks dEk
4-	{kkj ka ds fyk, pH dk Ekkuk gkRkk gS	$\frac{1}{4}$ / $\frac{1}{2}$ mnkLkhuk fokYk, kuk

mRÜkj 1- $\frac{1}{4}$ / $\frac{1}{2}$ 2- $\frac{1}{4}$ / $\frac{1}{2}$ 3- $\frac{1}{4}$ / $\frac{1}{2}$ 4- $\frac{1}{4}$ / $\frac{1}{2}$

LkR, k@vLkR, k fykf [k, &

- 1- fokYk, kuk Eka pH Ekkuk dks vLfkj j [kuks dh fØ, kk CkQj dgYkkRkh gS
- 2- NH_4Cl , o $a NH_4OH$ dk fokYk, kuk vEYkh, k CkQj fokYk, kuk gS
- 3- NH_4COONa , Oka CH_3COOH dk fokYk, kuk {kkj, h, k CkQj fokYk, kuk gS
- 4- fokYk, kuk Eka vIk?kV, k ds vk, kukhñIRk v. kq/ka dh Lkq, kk , Oka mlkLfkRk dYk v. kq/ka dh Lkq, kk ds vUkkkkRk dks vk, kukuk v a k dgRks gS
- 5- CkQj fokYk, kuk Eka vEYk, kk {kkj fEYkkuks Lks mLkdk pH Ekkuk Ikfj OkfRkRk Ukgha gkRkk gS

mRRkj 1- vLkR, k 2- vLkR, k 3- vLkR, k4- LkR, k 5- LkR, ka

, d 'kCn Eka mÜkj nhfTk,

- 1- vkOks' kRk d. k dgYkkRks gS
- 2- __.kk, kuk D, kk gS
- 3- fdLkh fok | Rk vIk?kV, k IknkFkkz ds vk, kukka Eka fokHkDRk gkñkdh fØ, kk dgYkkRkh gS
- 4- /kukk, kuk D, kk gS

mRRkj 1- vk, kuk 2- __.kkOks' kRk 3- vk, kukuk 4- /kukkOks' kRk d. k A

bdkbZ 6-

TKYk

cgfodYih; izu

I gh fodYi fy[kts

- 1- bLk Rkkik lkj TKYk dk /kukRok LkOkkZ/kd gkRkk g&
 $\frac{1}{a}\frac{1}{2} 5^{\circ}\text{C}$ $\frac{1}{b}\frac{1}{2} 4^{\circ}\text{C}$ $\frac{1}{c}\frac{1}{2} 9^{\circ}\text{C}$ $\frac{1}{d}\frac{1}{2} 100^{\circ}\text{C}$
- 2- lkjE, kfvV fokf/k ds }kj k TKYk dh bl dBkj Rkk dks nj dh Tkk LkdRkh g&
 $\frac{1}{a}\frac{1}{2}$ Lfkk, kh $\frac{1}{b}\frac{1}{2}$ vLfkk, kh $\frac{1}{c}\frac{1}{2}$ nkslka $\frac{1}{d}\frac{1}{2}$ dkbZ Ugha
- 3- TKYk dh vLfkk, kh dBkj Rkk ds dkj .k g&
 $\frac{1}{a}\frac{1}{2}$ Na O Mg $\frac{1}{b}\frac{1}{2}$ Ca O Mg $\frac{1}{c}\frac{1}{2}$ H O Mg $\frac{1}{d}\frac{1}{2}$ P O Mg
- 4- Ukek d Lkwk g&
 $\frac{1}{a}\frac{1}{2}$ NaCa $\frac{1}{b}\frac{1}{2}$ NaMg $\frac{1}{c}\frac{1}{2}$ NaCl $\frac{1}{d}\frac{1}{2}$ mi ; Dr I Hkh
- 5- 'kgjka Eka TKYk dks bLk fokf/k ds }kj k 'kqEk fd, kk TkkRkk g&
 $\frac{1}{a}\frac{1}{2}$ Okk"lkuk $\frac{1}{b}$) ?kqkuk $\frac{1}{c}\frac{1}{2}$ fukFkj .k $\frac{1}{d}\frac{1}{2}$ vOkLkknuk
- 6- TKYk gS, d&
 $\frac{1}{a}\frac{1}{2}$ RkRok $\frac{1}{b}\frac{1}{2}$, kksk d $\frac{1}{c}\frac{1}{2}$ fEkJ .k $\frac{1}{d}\frac{1}{2}$ fokYk, kuk
- 7- TKYk dk vf/kdRkEk ?kukRok gkRkk g&
 $\frac{1}{a}\frac{1}{2}$ 0°C lkj $\frac{1}{b}\frac{1}{2}$ 100°C lkj $\frac{1}{c}\frac{1}{2}$ 4°C lkj $\frac{1}{d}\frac{1}{2}$ lkjEk 'kq, k lkj
- 8- lkNfrk Eka TKYk fukeuk vOkLFkkvka Eka lkk, kk TkkRkk g&
 $\frac{1}{a}\frac{1}{2}$ Bkkk $\frac{1}{b}\frac{1}{2}$ æOk $\frac{1}{c}\frac{1}{2}$ Xkkk $\frac{1}{d}\frac{1}{2}$, ks Rkhukka A
- 9- LkOkkZ/kd v'kqEk TKYk gkRkk gS bLkd&
 $\frac{1}{a}\frac{1}{2}$ LkEkq dk $\frac{1}{b}\frac{1}{2}$ Ok"kkZ dk $\frac{1}{c}\frac{1}{2}$ TKYk dk $\frac{1}{d}\frac{1}{2}$ dq/kj dka
- 10- TKYk ds lkkNfrkd LkkkRk g&
 $\frac{1}{a}\frac{1}{2}$ Ok"kkZ $\frac{1}{b}\frac{1}{2}$ Uknh $\frac{1}{c}\frac{1}{2}$ LkEkq $\frac{1}{d}\frac{1}{2}$ mlk, kDrk LkhkA
mRRkj 1- $\frac{1}{a}\frac{1}{2}$ 2- $\frac{1}{a}\frac{1}{2}$ 3- $\frac{1}{a}\frac{1}{2}$ 4- $\frac{1}{c}\frac{1}{2}$ 5- $\frac{1}{d}\frac{1}{2}$ 6- $\frac{1}{b}\frac{1}{2}$ 7- $\frac{1}{c}\frac{1}{2}$ 8- $\frac{1}{d}\frac{1}{2}$ 9- $\frac{1}{a}\frac{1}{2}$ 10- $\frac{1}{d}\frac{1}{2}$

fjDRk LFkkUkka dh IkfRkZ dhfTk,

- 1- IkM&IkSkka Eka YkXkHkYk &&&Lk&&&&&&&Rkd Ikkuh gkRkk gA
 - 2- IkfRkZ : Ik Lks &&&dk TkYk 'kqEk gkRkk gA
 - 3- TkYk Eka&&&&Ok&&&&gkRkk gA
 - 4- vk/kfUkd Rkjhdka Lks TkYk &&&&&&gks jgk gA
- mRRkj** 1- 30%, 70% 2- Ok"kkZ 3 -vkDLkhTkUk Ok gkbMfRkUk 4- Xkank A

Lkgh TkMh CkUkbb, k&

	$\frac{1}{4}/\frac{1}{2}$	$\frac{1}{4}k\frac{1}{2}$
1-	TkYk dk vkf.Okd Lkuk	$\frac{1}{4}a\frac{1}{2}$ 70 IkfRk' kRk
2-	TkYk dk v. kqkjj	$\frac{1}{4}b\frac{1}{2}$ fQVdjh
3-	4°C Ikj TkYk dk ?kUROk	$\frac{1}{4}c\frac{1}{2}$ H ₂ O
4-	'kj hj Eka TkYk dh Ekk<<k	$\frac{1}{4}d\frac{1}{2}$ 18-008
5-	TkYk 'kks'kuk	$\frac{1}{4}e\frac{1}{2}$ 1 XkEk ?kuk@LkEk-

mUkj & 1- $\frac{1}{4}c\frac{1}{2}$ 2- $\frac{1}{4}d\frac{1}{2}$ 3- $\frac{1}{4}e\frac{1}{2}$ 4- $\frac{1}{4}a\frac{1}{2}$ 5- $\frac{1}{4}b\frac{1}{2}$

LkR,k@vLkR,k fykf[k, &

- 1- vLFkk, kh dBkjj Rkk dk dkj.k Mg Ok Ca ds CkbbdkCkbbk/Lk gA
 - 2- TkYk dks j kkk. kq jfgRk djUks gRkq KMnO₄ RkFkk Cl₂ Xk&k fEKYkbbZ TkRkth gA
 - 3- fQVdjh dks TkYk ds vlkae₀ kka dks nij djUks Eka Lkgh, kd Uggha gkRkh gA
 - 4- Xk&kd YkOk. kka Lks, kDRk TkYk] 'kj hj dh PkEMh vkfn ds fyk, gkfUkdjd gA
- mRRkj** 1- LkR,k 2- LkR,k 3-vLkR,k 4- vLkR,k A

, d 'kCn Eka mRRkj nhfTk, &

- 1 gkbMfRkUk , Oka vkDLkhTkUk dk , d , kks'kd dgYkRkk gA
 - 2- CkQZ dk XkYkUkka d gkRkk gA
 - 3- TkYk dk jkLk, kfUkd UkkEk gA
 - 4- TkYk dk DkFkUkka d gkRkk gA
- mUkj &** 1- TkYk 2- 0°C 3- gkbMfRkUk Ekk&ks, vkDLkbbM 4- 100°C

bdkbZ7

f0kjātkd Xkq k

cgfodYih; izu

I gh fodYi fy[kks

1- f0kjātkd PkwkZ dk Ikzkkk bLk Ikdkj ds dIKMka ds fYk, Ikzkkk fd,kk TkkRkk g&

1/2 LkKh 1/2 j s kEkh 1/2 [kknh 1/2 ÅUkh A

2- DYkksj hUk TkYk Lks fØ,kk dj D,kk CkUkkRkh g&

1/2 HCl 1/2 HCl₂ 1/2 HClO 1/2 HClO₂

3- LkYQj MkbvkkLkbbM }kjk bLk Ikdkj dk f0kjātku gkRkk g&

1/2 LFKk, kh 1/2 LkkEkkU, k 1/2 vLFk, kh 1/2 dkbZ fØ,kk UkghA

4- CYkhfPkZk IkkOMj dk Lkwk g&

1/2 [Ca(O₂)(Ca)] 1/2 [Ca(CO)Cl] 1/2 [Ca(OC)Cl] 1/2 [(Ca(OC)Cl)]

5- SO₂ fUkEUk fØ,kk }kjk f0kjātku djRkh g&

1/2 vkLkhdj. k 1/2 vIkPk, kUk 1/2 vIk?kVUk 1/2 bukEka Lks dkbZ UkghA

6- f0kjātkd PkwkZ dk jkLk, kFukd Lkwk g&

1/2 CaOCl₂ 1/2 CaSO₄ 1/2 Ca(OC)Cl₂ 1/2 CaCl₂

7- f0kjātkd IknkFkZ g&

1/2 DYkksj hUk 1/2 SO₂ 1/2 CYkhfPkZk IkkOMj 1/2 mlk, kPRk LkHkA

8- jkKhUk IknkFkZ dks jkghUk CkUkkUs OkkYks IknkFkZ dgYkkRks g&

1/2 jātkd 1/2 f0kjātkd 1/2 vkLkhdkj d 1/2 vIkPk, k dA

9- DYkksj hUk fUkEU fØ,kk }kjk f0kjātku djRkh g&

1/2 vkLkhdj. k 1/2 vIkPk, kUk 1/2 vIk?kVUk 1/2 bukEka Lks dkbZ UkghA

mRRkj 1-1/2 2-1/2 3- 1/2 4- 1/2 5- 1/2 6- 1/2 7- 1/2 8- 1/2 9- 1/2

fjDRk LfkUkka dh IknkFkZ dhfTk, &

1- f0kjātkd &&&&&&&Ikdkj ds gkRks g&

- 2- DYkjs huk Ikkukh Lks fØ,kk dj ds UkOkTkkRk&&&&& nBkh gA
 - 3- so₂ Ikkukh Lks fØ,kk dj ds UkOkTkkRk&&&&&&&nBkh gA
 - 4- fokjãkd Pkwkz dh fokjãkuk fØ,kk &&&&&&&ds LkEkkuk gh gkRkh gA
 - 5- Ckqks Pkqks dk Ikkukh 40°C Rkkik Ij C₁₂ Xk&k IkkkfgRk djUks Ij &&&&&CkUkRkk gA
- mRRkj 1- nks 2- vkkDLkhtkuk 3- gkbMkStkuk 4- DYkjs huk 5- fokjãkd Pkwkz

Lkgh Tkkmh Ckukkb,ks&

	¼½		¼½
1-	Rkhkz fokjãkuk	¼½	LkRkh dIkMs
2-	nqkzk fokjãkuk	¼½	vLFkk, kh fokjãkuk
3-	LkYQj MkbvkdLkkm	¼½	DYkjs huk
4-	fokjãkd Pkwkz	¼½	gkbMkStkuk i jkDI kbM
5-	vIkPk, kuk }kj k fokjãkuk	¼½	Åuk , oka js kEk A

mRRkj 1-¼½ 2-¼½ 3- ¼½ 4- ¼½ 5-¼½

LkR,k@vLkR,k fykf[k, &

- 1- so₂ , d , UVhDYkjs gA
 - 2- fokjãkuk gkRkk gA jãkghuk dks jãkghuk CkUkRkk gA
 - 3- vLFkbbz fojat d dk dk,kz so₂ djRkh gA
 - 4- DYkjs huk , d LFkk, kh fokjãkd dk dk,kz djRkk gA
 - 5- jãkuk gkRkk gS jãkghuk dks jãkghuk CkUkRkk A
- mRRkj 1- LkR,k 2- vLkR,k 3- LkR,k 4- LkR,k 5- vLkR,k A

, d 'kcn ,kk OkkD,k Eka mRRkj nhfTk, &

- 1- fokjãkd Pkwkz dk vksj kSkd fUkEkz k fdUk fokf/k, kka ds }kj k gkRkk gS
 - 2- , Lks IknkFkZ Tkks jãkghuk i nkFkã dks jãkghuk Eka CknYk nBks gS D; k dgYkRks gA
 - 3- CYkhpPkã IkkmMj CkUkUks ds fyk, Ckqks gq Pkqks dks fdLkLks fØ,kk djkbz TkkRkh gA
 - 4- IkrkDYkjs ks ds : Ik Eka fdLkdk Izkãk dIkMka Ij gkRkk gS
- mRRkj 1- CksdEkk ,kk gLkukDYkjs 2- fokjãkd IknkFkZ 3- DYkjs huk 4- LkYQj MkbvkdLkkmA

bdkbz & 8

Ikd'kh,k Ikska ds fdkfHkUk HkXk] Ij kXk.k , Oka fUK'kPKUK] CkhTkka dh Lkj PKUk , Oka vadg .k

cgfodYih; izu

I gh fodYi fy[kks

- 1- Ij kXk.k dh fØ,kk fdRkUks Ikzdkj Lks gkRkh g&
 $\frac{1}{a}\frac{1}{2}$, d $\frac{1}{b}\frac{1}{2}$ nks $\frac{1}{c}\frac{1}{2}$ RkhUk $\frac{1}{d}\frac{1}{2}$ Pkkj
- 2- CkhTk ds HkRkj ds UKUga Ikska dks dgk TkrRk g&
 $\frac{1}{a}\frac{1}{2}$ CkhTk $\frac{1}{b}\frac{1}{2}$ vj .Mh $\frac{1}{c}\frac{1}{2}$ Ij kXk $\frac{1}{d}\frac{1}{2}$ HkRk A
- 3- EkDdk ds IkqIk dk Ij kXk.k bLk fdkf/k ds }kjk gkRk g&
 $\frac{1}{a}\frac{1}{2}$ Okk ,kq }kjk $\frac{1}{b}\frac{1}{2}$ dhVka ds }kjk (c $\frac{1}{2}$ PkEkXkknMka (d) LkHkA
- 4- , Lks f}fYkXk IkqIk fTkUk ds IkqIk LkHkA Lks IkgYks Icfj IkDk gka mLks dgrks g&
 $\frac{1}{a}\frac{1}{2}$ CkhTkUk $\frac{1}{b}$ vj .Mh (c $\frac{1}{2}$ IkqIk (d) Lokj kfxRk Iksks
- 5- EkDdk g&
 $\frac{1}{a}\frac{1}{2}$ dhV Ij kfxRk $\frac{1}{b}\frac{1}{2}$ Okk ,kq Ij kfxRk $\frac{1}{c}\frac{1}{2}$ TkYk Ij kfxRk (d) TkURkq Ij kfxRk
- 6- TkUk vXk gkRk g&
 $\frac{1}{a}\frac{1}{2}$ TkM $\frac{1}{b}\frac{1}{2}$ RkUk $\frac{1}{c}\frac{1}{2}$ IkqIk $\frac{1}{d}\frac{1}{2}$ IkRkH A
- 7- jfYk' k,kk g&
 $\frac{1}{a}\frac{1}{2}$ dhV Ij kfxRk $\frac{1}{b}\frac{1}{2}$ TkURkq Ij kfxRk $\frac{1}{c}\frac{1}{2}$ Okk ,kq Ij kfxRk $\frac{1}{d}\frac{1}{2}$ TkYk Ij kfxRk A
- 8- IkfRk,ka ds IkEkq'k dk ,kz g&
 $\frac{1}{a}\frac{1}{2}$ Ikzdk' k&Lk Yksk.k $\frac{1}{b}\frac{1}{2}$ mRLkUk $\frac{1}{c}\frac{1}{2}$ Xk&k fdkfUk,k $\frac{1}{d}\frac{1}{2}$ mlk,kDRk LkHkA
mRRkj 1- $\frac{1}{a}\frac{1}{2}$ 2- $\frac{1}{d}\frac{1}{2}$ 3- $\frac{1}{a}\frac{1}{2}$ 4- $\frac{1}{c}\frac{1}{2}$ 5- $\frac{1}{b}\frac{1}{2}$ 6- $\frac{1}{c}\frac{1}{2}$ 7- $\frac{1}{b}\frac{1}{2}$ 8- $\frac{1}{d}\frac{1}{2}$

fjDRk LfkUka dh IkRkZ dhfTk, &

- 1- vj .Mh Eka &&&&&HkRk Ikskh CkhTk g&
- 2- EkDdk Eka&&&&vadg .k Ikk,kk TkrRk g&

- 3- Qkk ,kq lkj kfxkrk lkqika dk lkjxkdksB &&&&&&gkRkk gA
 4- , Lks lkqik Tkks HkFEk ds vnj gRks gA mUg&&&&&dgRks gA
 mRRkj 1- f}CkhTklk<kh 2- v/kk&FEkd 3- EkDRkMkykh 4- fukFEYk A

Lkgh Tk&Mh CkUkkb ,ks&

	$\frac{1}{a}\frac{1}{2}$		$\frac{1}{c}\frac{1}{2}$
1-	v/kk&FEkd v&dj .k	$\frac{1}{a}\frac{1}{2}$	Lkj TEkq[kh
2-	mlkfj HkFEkd v&dj .k	$\frac{1}{b}\frac{1}{2}$	EkDdk
3-	Tkj k ,kq'k v&dj .k	$\frac{1}{c}\frac{1}{2}$	PKUkk
4-	dhV lkj kfxkrk lkqi	$\frac{1}{d}\frac{1}{2}$	LKEk
5-	HkwkIkkskh CkhTk	$\frac{1}{e}\frac{1}{2}$	Ukkfj ,kYkA

mUkj & 1- $\frac{1}{c}\frac{1}{2}$]2- $\frac{1}{d}\frac{1}{2}$] 3- $\frac{1}{e}\frac{1}{2}$ 4- $\frac{1}{a}\frac{1}{2}$ 5- $\frac{1}{b}\frac{1}{2}$

LKR ,k@vLKR ,k fYkf[k, &

- 1- lkqik lksks dk Ok/khZ HkkXk dgYkkrkk gA
 2- RkUs lkj mlkfLFkrk XkkBs lkQZ dgYkkrkh gA
 3- EkYkh dh TKM+jS ksnkj TKM+gkRkh gA
 4- lkUkh ds d{k Eka mlkfLFkrk dfYkdk] d{kLFk dfYkdk dgYkkrkh gA
 mUkj& 1- vLKR ,k] 2- vLKR ,k] 3- vLKR ,k] 4-LKR ,kA

, d 'kCn Eka mUkj nhfTk, &

- 1- LQlkj kXk .k fdLkEka Lk&Ok gkRkk gS
 2- v&dj fO ,kk ds lk' PkRk RkSkkj UkQhUk UkUga lksks dks dgRks gA
 3- CkhTk ds HkRkj fLFkrk UkUgk lkskk dgYkkrkk gA
 4- fuk"kbUk ds Ckn CkhTk .M Lks fUkdfLkrk Lkj PKUkk dgYkkrkh gA
 5- , Lks lkqik Tkks HkFEk ds vUnj jgRks gS RkFk dhkh Ukgha f[kYkRk] Oks dgYkkrks gA
 mUkj& 1- f}fYkdkh lkqik] 2 UkQksr fHkn] 3- Hkwk] 4- CkhTk] 5 fukFEYk lkqika

bdkbZ9

i qih; i kskj Qy , oai kni d y

cgfodYih; izu

I gh fodYi fy[kks

- 1- Ikqik dk L«kh Tkukuk HkkXk gkRkk g&
 $\frac{1}{a}\frac{1}{2}$ Ckkâ,k nYk $\frac{1}{b}\frac{1}{2}$ Ikq'k nYk $\frac{1}{c}\frac{1}{2}$ Ikq'k Ikq'k $\frac{1}{d}\frac{1}{2}$ Tkk,kkâk A
- 2- fuk"kkuk ds Ckkn QYk fokdfLkRk gkRkk g&
 $\frac{1}{a}\frac{1}{2}$ v . Mk' k,k Lks $\frac{1}{b}\frac{1}{2}$ CkhTkk . kq Lks $\frac{1}{c}\frac{1}{2}$ Ikq'kkLkuk $\frac{1}{d}\frac{1}{2}$ Ikj,kXkd . k Lks
- 3- Ikqik dk Ukj Tkukuk HkkXk g&
 $\frac{1}{a}\frac{1}{2}$ Ckkâ,k nYk $\frac{1}{b}\frac{1}{2}$ Ikq'k nYk $\frac{1}{c}\frac{1}{2}$ Ikq'k Ikq'k $\frac{1}{d}\frac{1}{2}$ Tkk,kkâk
- 4- fTkLk Ikqik Eka IkpLk,j , Oka L«kh dLk,j nkkkka vUkqfLkRk gkRks g&
 $\frac{1}{a}\frac{1}{2}$ f}fYkâkh $\frac{1}{b}\frac{1}{2}$ UkLk,kd $\frac{1}{c}\frac{1}{2}$ L«kh dLk,j,h,k $\frac{1}{d}\frac{1}{2}$ IkpLk,j,h,k
- 5- QYk dk IkEq'k dk,kz g&
 $\frac{1}{a}\frac{1}{2}$ Hkâk dks Lkj f{kRk j [kukk $\frac{1}{b}\frac{1}{2}$ [kk | IknkFkkâ dks LkâPkRk djUkk
 $\frac{1}{c}\frac{1}{2}$ CkhTka ds $\frac{1}{d}\frac{1}{2}$ Ikcdh. kâk Eka Lkgk,kRk j [kukk mlk,kâRk LkHkh A
mRRkj & 1- $\frac{1}{a}\frac{1}{2}$ 2- $\frac{1}{a}\frac{1}{2}$ 3- $\frac{1}{c}\frac{1}{2}$ 4- $\frac{1}{b}\frac{1}{2}$ 5- $\frac{1}{d}\frac{1}{2}$

fjDRk LFkkukka dh IkRkZ dhfTk, &

- 1- 'kgRkk dk &&&&&&LkâkFkRk QYk g&
 - 2- LkjLkâ&&&dYk dk IkkSkk g&
 - 3- Xkq'gYk &&&&&dYk dk IkkSkk g&
 - 4- 'kjhQk &&&&&dk Ikq'k QYk g&
 - 5- Pkukk &&&&&&dYk dk QYk g&
- mRRkj** & 1- LkkjksLkLk] 2- ØLkhQj h 3- EkkYkOkâ.kh 4- Ckj h 5- IkSikfYk,kkSkâ.khA

Lkgh TkkMh CkUkkb,ks&

	$\frac{1}{a}\frac{1}{2}$		$\frac{1}{c}\frac{1}{2}$
1-	dRFkk	$\frac{1}{a}\frac{1}{2}$	fUkdks/hfUk,kk VCKsdEk
2-	Xkkn	$\frac{1}{b}\frac{1}{2}$	dW QYk
3-	UkhYk	$\frac{1}{c}\frac{1}{2}$	vdSLk,kk dVBPkw
4-	RkEckkdw	$\frac{1}{d}\frac{1}{2}$	vdSLk,kk fUKYkkfVdk
5-	LkSk	$\frac{1}{e}\frac{1}{2}$	bf.MXkkQj k VhDVksj, kk A

mRRkj & 1- $\frac{1}{c}\frac{1}{2}$ 2- $\frac{1}{d}\frac{1}{2}$ 3- $\frac{1}{e}\frac{1}{2}$ 4- $\frac{1}{a}\frac{1}{2}$ 5- $\frac{1}{b}\frac{1}{2}$

LkR,k@vLkR,k fykf[k, &

- 1- IkqIk dk Ekknk HkkXk IkpLk,kj gkRkk gS
 - 2- IkSkks dk mnkgj .k [kj CkTtk gS
 - 3- dSkYkj dk mnkgj .k VEkkVj gS
 - 4- vkEk Ckj h dk mnkgj .k gS
 - 5- fTkUk IkqIkka Eka Tkk, kZkK Ukgha gkRkk] Oks Ukj , dfYkZkh dgYkkRks gS
- mRRkj &** 1- vLkR,k 2- LkR,k 3- vLkR,k 4- vLkR,k 5- LkR,k A

,d 'kCn Eka mRRkj nhfTk,ks&

- 1- fTkLk IkqIk Eka Pkkjka vksj PkØ mlkFLFRk gk] dgYkkRkk gS
 - 2- fTkLk IkqIk Eka IkpLk,kj , Oka L«khdLk,kj nkSkka gh vUkFLFRk gk] dgYkkRks gS
 - 3- fTkLk IkqIk Eka dSkYk L«khdLk,kj gk] dgYkkRks gS
 - 4- fTkLk IkqIk Eka dSkYk IkpLk,kj gk] dgYkkRks gS
- mRRkj &** 1- IkwkZkqIk 2- UkIkLkdIkqIk 3- L«khdLk,kjh,kIkqIk 4- IkpLk,kjh,kIkqIk A

bdkbZ10

10 1/2 jkxkkgd Tkhoka dk v/ , k, kul

cgfodYih; izu

I gh fodYi fy[kks

- 1 EkUkt, k 'kj hj Eka I kj TkhOkh fdRkUks Ikzlkj dh gkRkh g&
1/2 a, d 1/2 b nks 1/2 c Rkhuk 1/2 d Pkkj
- 2- EkYkfj, kk I kj TkhOkh ds IkkSkdka dk UkkEk Ckrkkb, k&
1/2 a IYkkTEkksM, kEkLIkh' khTk 1/2 b, .VvEkhCkk 1/2 c NfEk 1/2 d mIk, kDRk Lkhkh A
- 3- , .VvEkhCkk fTkTkhOkSYkLk EkUkt, k ds bLk HkkXk Eka I kj TkhOkh ds : Ik Eka jgRks g&
1/2 a vRk 1/2 b an, k 1/2 c EkLkMka 1/2 d TkckMk A
- 4- EkUkt, k Eka IYkXk bLkds }kj k QSYkRkk g&
1/2 a fIkLLkq/ka Lks 1/2 b [kVEkYk 1/2 c dhMka 1/2 d TkkUkOj ka
- 5- jkxkk. kq/ka dk Hk{k. k djRkk g&
1/2 a, .VvEkhCkk fgLVkSYkFvdk 1/2 b, .VhvEkhCkk fTkUTkhOkSYkLk
1/2 c, .VvEkhCkk dks/kkbZ 1/2 d gpdoeA
- 6- EkYkfj, kk QSYkRkk gS fUkEuk ds dkVUks Lks &
1/2 a Ekknk D, kYkDLk 1/2 b Ukj D, kYkDLk 1/2 c Ekknk , UkkSYkKhTk 1/2 d Ukj , UkkSYkKhTk A
- 7- Ikk, kfj, kk jkxk QSYkRkk gS fUkEuk ds }kj k &
1/2 a, .VhvEkhCkk fgLVkSYkKdk 1/2 b, .VvEkhCkk fTkUTkhOkSYkLk
1/2 c, .VvEkhCkk dks/kkbZ 1/2 d gpdoeA
mRRkj & 1- 1/2 2- 1/2 3- 1/2 4- 1/2 5- 1/2 6- 1/2 7- 1/2 A

fjDRk LfkUkka dh Ikariz dhfTk, &

- 1- &&&&Ikhuks Lks IksPK' k gks TkkRkh gA
- 2- QhRkkNfEk &&&&I kj TkhOkh TkURkq gA
- 3- Ekknk EkPNj vIkUks v. Ms &&&&&&&&Eka nBkh gA

- 4- EkPNj &&&&lkjTkhOkh TkUrqgÅ
- 5- QhRkkÑfEk ds YkkOkk&&&&ds 'kj hj Eka lkk, TkkRks gÅ
- mRRkj 1- Xkank lkkUkh 2- vk&kfjd 3- LOKPN TkYk 4- Ckkâ,k 5- Lkwj A

Lkgh TkkMh CkUkkb,ks&

	¼½		¼½
1-	, MhTk EkPNj	¼½	EkSYkXkUs V QhOkj
2-	D,kYkDLk EkPNj	¼½	Lkk/kkj .k Tokj
3-	, bkk&QfYkTk	¼½	lkhRk Tokj
4-	IYkkTEkksM,kEk QSYLkhikj Ek	¼½	M&kw
5-	IYkkTEkksM,kEk vk&kyk	¼½	Ekyk&j,k A

mRRkj & 1- ¼½ 2- ¼½ 3- ¼½ 4- ¼½ 5- ¼½

LkR,k@vLkR,k fykf[k, &

- 1- QhRkkÑfEk Eks vYk&Xd TkUkuk gk&kk gÅ
- 2- Ukj EkPNj gh EkUkt,k dk [k&k Pk&kRks gÅ
- 3- , Ld&jLk dHkh Tkk&S Eka Ukgha jgRkk
- 4- EkPNjka Lks CkPkUs ds fyk, EkPNjnkUkh dk lzk&kk djUk Pk&fg, A
- mRRkj 1- LkR,k 2- vLkR,k 3- vLkR,k 4- LkR,kA

, d 'kCn Eka mRRkj nhfTk, &

- 1- fLkXk&V fj&k vOkLFkk lkk,kh TkkRkh gÅ
- 2- Ekyk&j,k j&kk mRIkUk djUks OkkYks lkjTkhOkh dk UkkEk gÅ
- 3- , .VhvEkhCkk EkUkt,k ds 'kj hj Eka j&kk mRIkUk djRkk gÅ
- mRRkj & 1- Ekyk&j,k lkjTkhOkh ds TkhOkuk PkØ Eka 2- Ekyk&j,k lkjTkhOkh Llk&j k&fOkk&V IYkkTEkksM,kEk 3- l&PkLk j&kkA

10½ dks' kdk] dks' kdk f0kHkkTKuk] ÅRkd

cgfodYih; itu

I gh fodYi fy[kks

- 1- ÅRkdka dks bRkUks OkXkkz Eka Ckkv/k Xk,kk g&
½a½ , d ½b½ nks ½c½ RkHuk ½d½ Pkkj
 - 2- dks' kdk dh [kkst'k LkOkzkFEk bLkUks dh Fkh&
½a½ j kOkVZ gpl ½b½ TkUuk MfOkM ½c½ CkD Tkd ½d½ dkbZ UkghA
 - 3- jDRk , Oka YkLkhdK bLk lkdj ds ÅRkdka ds mnkgj .k g&
½a½ rjy ½b½ Lkqkst'kh ½c½ OkfgUkh ½d½ 'kfj dk A
 - 4- fdLk dks' kdk vdkd dks vkrRkEk?kkrkh FkSYk, kka ds UkkEk Lks TkUuk TkrRk g&
½a½ ?kkrkh, k FkSYkh ½b½ YkbbLkklkEk ½c½ fOk'kk, kd ½d½ dkbZ UkghA
 - 5- jDRk Eka fUkEuk jDRk df. kdk, j lkk, kh TkrRk g&
½a½ YkYk jDRk df. kdk, j ½b½ 'Okk jDRk df. kdk, j ½c½ lYkS/YkS/Ek ½d½ mlk, kDRk LkHkh
 - 6- dks' kdk Eka daed dh [kkst'k dh Fkh fUkEuk OkSkfUkd Uks&
½a½ j kOkVZ gpl ½b½ j kOkVZ CkkmUk ½c½ 'YkhMuk , Oka 'oku ½d½ lkg fdUTks A
 - 7- dks' kdk æ0, k dks TkhOkæ0, k dk UkkEk fUkEuk OkSkfUkd Uks fn, kk &
½a½ j kOkVZ gpl ½b½ j kOkVZ CkkmUk ½c½ 'YkhMuk , Oka 'oku ½d½ lkg fdUTks A
 - 8- dks' kdk dh [kkst'k dh Fkh] fUkEuk OkSkfUkd Uks &
½a½ j kOkVZ gpl ½b½ j kOkVZ CkkmUk ½c½ 'YkhMuk , Oka 'oku ½d½ lkg fdUTks A
- mUkj & 1- ½c½ 2-½a½ 3- ½b½ 4-½b½ 5-½d½ 6-½b½ 7-½d½ 8- ½a½

fjDRk LFkkUkka dh lkrRkZ dhFTk, &

- 1- , d gh LkEkkuk jPkUk , Oka dk, kz OkYks dks' kdkvka ds LkEkng dks&&&&dgRks gA
 - 2- EkUkq, k ds dks' kdk Eka&&&&&&ØkEkLkEkLk lkk, ks TkrRks gA
 - 3- EkkbVksdKw. Mª, kk XYkcdkst'k dk vkD Lkhdj .k djds TkSOkd &&&&dk fUkEkz, k djRkh gA
 - 4- &&&&&&TkBkq LkEkLkwhk f0kHkkTKuk }jk OkfnEk vksj f0kdLk djRks gA
- mRRkj 1- ÅRkd 2- 46 3- ATP 4- Ckgplks kh, k A

Lkgh TkkfM, kk; Ckukkb, ks&

	1/4 1/2		1/2 1/2
1-	Tkhokuk dh Lkj PkukkrEkd bdkbz	1/4 1/2	vEkhCkk
2-	dks' kdk dk ÅTkkZkg	1/2 1/2	Tkukuk dks' kdk
3-	LkEkLkukh fokHkkTkuk	1/4 1/2	dks' kdk
4-	vLkukh fokHkkTkuk	1/4 1/2	EkkbVksdkM. M°kk
5-	vnEkLkukh fokHkkTkuk	1/2 1/2	nfgd dks' kdkA

mRRkj & 1- 1/4 1/2 2- 1/4 1/2 3- 1/2 1/2 4- 1/4 1/2 5- 1/2 1/2

Lkr, k@vLkr, k fykf[k, &

- 1- dks' kdk fokHkkTkuk ds LkEk, k Rkdq Xkq kLkukka dh Xkfrk dks fuk, kkkRk djRks gA
 - 2- , fikFFfyk, kEk ÅRkd ds }kjk 'kjh dk Ckkgjh Ok vkRkfjd HkkXk <pk jgRkk gA
 - 3- jkbCkkk.kkkEk fokVfEkuk Lkj Pkukk dk dk, kz djRkh gA
- mRRkj 1- Lkr, k 2- Lkr, k 3- vLkr, k A

, d 'kCn Eka mRRkj nhfTk, ks&

- 1- vnEkLkukh fokHkkTkuk Eka fokfu; e gkRkk gA
 - 2- LkEkLkukh fokHkkTkuk Eka Xkq kLkukka dh Lkq, kk fdLkds LkEkuk gkRkh gA
 - 3- gfjRk YkOkd dk jk ds k gkRkk gA
 - 4- YkkbLkkk.kkkELk vkREkgr, kk djUks OkkYkh dgYkkRkh gA
- mRRkj %& 1- Tkuk 2- EkRk dks' kdk 3- gjk 4- FkYkA