



bdkbZ pkj

i kni dk; dh; ('kjhj fØ; kRedrk)

vè; k; 11
iK/lø ea ifjogu

vè; k; 12
[k'ut iKsk.k

vè; k; 13
mPp iKnilø ea izdk' k&l åySk.k

vè; k; 14
i kni ea 'ol u

vè; k; 15
i kni of} , oa ifjo/Zu

, d l e; oø i'plr tð l jpuK dk o. lù , oa thfor tðodkø dh fofHlurk (fooj.k)
dk vr nlsvyx : i eagyk tks tho foKku eaLi"V : i l s i j L i j f o j k / h i f j i ç ; oø
Fk ; g nls ifjiç ; 'lq vkrh nls ij thou Lo: i , oa ifrHkl oø l æBu oø nls Lrjka
ij vèk'fjr FkA bl ea , d dks tð Lo: i l æBu oø Lrj ij of. l r fd; k x; k tçd
nù js dks l æBu oø dks' kdh; , oa v. lq Lrj ea of. l r fd; k x; k ifj. kelo: i igyk
ifjLFkr&foKku rFk bl l sl æd/r foKku oø varx' Fk tçd nù jk 'kjhj foKku , oa
tð&jl k; u 'kL-k oø : i eaLFkrir g'kA i qih iKnilø ea 'kjhj oKkfud i Øelødk o. lù
, d mnkgj.k oø nls ij g\$ ftl s bl [kA oø vè; k; lø eafn; k x; k gA iKnilø ea [k'ut
iKsk.k] izdk' k&l åySk.k] ifjogu] 'ol u rFk i kni of} , oa ifjo/Zu dks varr% vkf. od
Hk'k ea gh dks' kdh; dk; fof/ vls ; gk rd fd tðod Lrj oðs l mfHkr fd; k x; k
gA tçk Hh vls pR; i w l z ik; k x; k g\$ ogk ij i; løj.k oø l mHl ea 'kjhj oKkfud i Øe
oø l æd'kø dh Hh pptz dh xbz gA



eyfou oðyfou
(1911 &)

eyfou oðyfou dk tle við 1911 eafeul k/k (; w, l -, -) eaqvk Fk vlg
vki usfeul k/k fo' ofo | ky; l s j l k; u 'kl-k ea ih-, p-Mh- dh mikf/ iklr
dhA vki uscdÿs dh oðyhi Oðuz; k ; whofl ÷h oð j l k; u 'kl-k oð i ki o l j oð
in ij l ok, a inku dhA

f}rh; fo'o ; ð; oð Bhd cln] tc i j k fo'o fgjk' kek&ulxkl kd dh
foLi Oð/d ?Kvuk l s j s M; k/fezk oð nði Hko dks n[kd j nð[k l s Lrc/ Fk]
rc eyfou vlg muoð l gdehÿ us j s M; k/fezk oð ykHnk; d mi; loka dks
izV fd; k vkiusts, - ck' ke oð l f k feydj C₁₄ oð l k k dlcZUMkvbvM l k b M
oð ycyifo/ } j k d Pph l kexh t s dlcZUMkvbvM l k b M ty , oa [kfutk
t s srRola l s r f k 'koj k j p u k l s x h u l y k / t (gfjr i k n i k) ea i f r f Ø; k d k
vè; ; u fd; k FkA eyfou us izrkfor fd; k fd i k s' i z k' k Å t k d k
j k l k; f u d Å t k ea cny n r s g ð f t l oð fy, , d o. k d v. k y k oð l æ f B r
, j s (l e g) r f k v l ; r R o l a ea , d b y d v M d k l F k u l a f j r d j r s g ð
i z k' k & l á y s k. k ea d k z u oð l o l a k h d j. k oð i k f k o s oð i f r f p - k. k d j u s i j
vki d k s 1961 ea u k s y i j l d k j i k l r g e y k A

eyfou oð } j k l F k f i r f d, x, i z k' k & l á y s k. k oð f l } h a r] v k t H k h]
Å t k , o a i n k f k s oð fy, i q % L F k i u ; k ; l á k / u l a oð v è ; ; u r f k l k s & Å t k
v u d a' l u ea v k / k j H a r v è ; ; u l a oð fy, H k h m i ; l s x f d ; k t k r k g ð

vè; k; 11

i kŷka ea i fjogu

11-1 ifjogu oð elè; e

11-2 ini&ty l eʔ

11-3 yeh njih rd ty
dk ifjogu

11-4 ok'ik&l tū

11-5 [kfut i kŷkda dk
mngx.k , oa
ifjogu

11-6 Ýyŷ e ifjogu%
mnxe l s>ŷ rd
idlg

D; k vki dksdHkh vk'p; Zughagv'k gSfd o{kkadh l cl s'Àph f'k[kj rd i kuh oð l s
igprk gŷ ; k fi Qj bl ckr oð fy, fd inkFKZ , d dks'kdk l s nŷ jh dks'kdk dh
vŷŷ oð l s c<+tkrs gā vŷŷ ; sinkFKZ l eku izdkj l s, d fn'kk ea pyrs gā D; k bu
rRoka dks vkxs c<us oð fy, miki p; h Åtkz dh vko'; drk gkrh gŷ i M&i kŷka dks
tāq/ka dh viŷkk dgha vf/d njih rd v.kv/ka dks ys tkus dh vko'; drk gkrh gŷ
tcf d mueafdl h izdkj dk ifjogu rak ugha gkrka tMka }kjk xg.k fd; k x; k i kuh
i kŷka oð l Hkh Hkkxkard igprk gŷ tksc<rs gq rus oð vxz Hkkx rd tkrk gā i fŷk; ka
}kjk l ā lu izdk'k&l ā yŷk.k oð ifj.kkelo: i mRi lu mRi kn Hkh i kŷka oð l Hkh vacka
rd igprs gā vŷŷ enk dh xgjkz ea var%LFkkfir tMka oð 'kh'kz rd tkrs gā ; g
xfr'khyrk y?kq njih rd] dks'kdk oð vmj ; k f>fydk oð vkj&ikj vŷŷ Ård oð
varx̄ , d dks'kdk l s nŷ jh dks'kdk rd kuh jgrh gā i M&i kŷka ea gksus okyh bl
ifjogu fof/ dks l e>us oð fy,] gea l cl s igys dks'kdk dh vk/kjHkr cukov
rFkk i kŷs dh 'kjh&jpuk foKku oð ckjseaeny tkudkj dks i q% Lej.k djuk gksk
vŷŷ bl oð l kFk gh l kFk gea fol j.k] foHko , oa vk; u oð ckjsea tkudkj Hkh i ktr
djuh gksxhA

tc ge inkFKkã oð ifjogu dh ckr djrs gārks l cl s igys gea ; g i kfjHkkf"kr
djuk vko' ; d gkrk gSfd ge fdl izdkj dh xfr vŷŷ fdu inkFKkã dh ppkz dj
jgs gā i qih; i kŷka ea ftu inkFKkã dk ifjogu gkrk gŷ muea ty] [kfut i kŷkd]
dkcŷud i kŷkd , oa i kŷka oð of¼ fu; ked e[; gā de njih rd inkFKkã dh xfr]
i l j.k , oa l kbVksyktfed /kjk l fØ; ifjogu dh enn l sgks l drk gā yeh njih
oð fy, ifjogu] l oguh; rak (tkbye rFkk Ýyk, e) }kjk l ā lu gkrk gŷ vŷŷ bl s
LFkkurj.k dgk tkrk gā

, d egúoiwZigywftl ij è;ku nsis dh vko'; drk gS og ifjogu dh fn'kk gð emyh; ikni ka ea tkbye ifjogu (ikuh vKš [kfutka dk) vko'; d : i l s, d fn'kkRed vFKkz~em lsrusrd gkrk gð dkcud vKš [kfut ikškdka dk ifjogu cgrfn'kkRed gkrk gð izk'k&l áys"kd i fúk; ka }kjk l áys"kr dkcud ; kšxdka dks i kš'soð l Hkh vakaftuea HhMkj vax Hkh l fEefyr gð rd igppk; k tkrk gð ckn ea Hkð/kj vaka l sblga i q% ifjogfur fd; k tkrk gð tMka }kjk [kfut ikškd rRoka dks tMka }kjk xg.k djoð ml sruš i fúk; ka , oaof¼ {kškdard Hkst k tkrk gð tc fdl h i kš'sdk dkbZ Hkx tjol Fkk dks i tkr djrk gšrks ml s {kškd oð i kš'dka dksoki l yd j of¼ d jusokys {kška dh vkj Hkst fn; k tkrk gð gkeku ; k ikni of¼ fu; ked rFkk vU; j l k; u&mlkst d Hkh ifjogfur fd, tkrsgð ; |fi budh ek-kk cgr de gkrh gð dbz ckj ; s, d /ph; ; k , d fn'kk; h gkrsgð vKš l áys"kr l Fkk l s nù js Hkxka rd ifjogfur gkrsgð vr% , d i qih; i kš'sea; kšxdka dk vkokexu dki th tFVY (yšdu l bkor% cgr Øekud kj) vKš fofHkku fn'kkvka ea gkrk gð i R; d vax oðN inkFkka dks xg.k djrk gšrFkk oðN nù jka dks nrk gð

11-1 ifjogu oð ekè; e

11-1-1 fol j. k

fol j. k }kjk xfr fuf"Ø; gkrh gS rFkk ; g dks'kdk oð , d Hkx l s nù js Hkx rd ; k dks'kdk l svU; dks'kdk rd de njih rd ; k , d k dg l drs gðfd i fúk; ka oð v rj dks'kdh; l Fkk l scká i ; kbj.k rd oðN Hkh gk l drh gð bl ea Åt kZ dk 0; ; ugha gkrka fol j. k ea v.kq vfu; fer : i l s xfr djrs gð ifj. kkeLo: i inkFkz mPp l kmrk l s fuEu l kmrk okys {kškd ea tkrsgð fol j. k , d /heh i fØ; k gS rFkk og thfor rak ij fuHkj ugha djrh fol j. k xš nð ea Li"V ifjyf{kr gkrh gS tcf d Bkd ea Bkd dk fol j. k oðN vák rd gh l bkko gð i kš'ka oð fy, fol j. k vr; r gh egúoiwZ gSD; kkd ikni 'kjhj ea xš h; xfr dk ; g vošyk ekè; e gð

fol j. k dh nj l kmrk dh ið.krk] mlga vyx d jusokyh f>Yyh dh i k j xE; rkj rki rFkk nkc l s i Hkkfor gkrh gð

11-1-2 l q kè; fol j. k

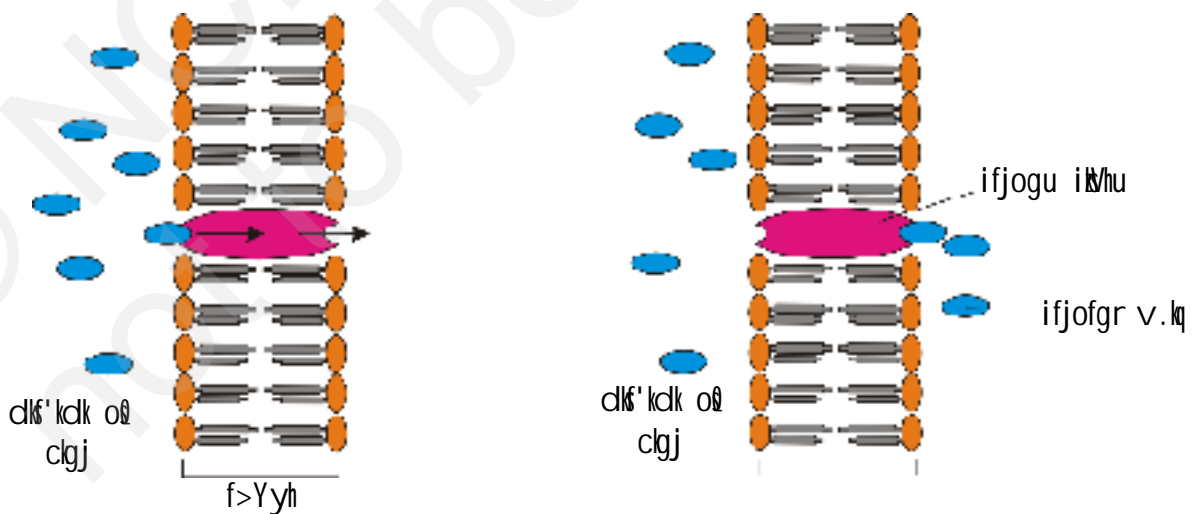
tš k igys crk; k x; k gS fd fol j. k mRi l u d jus oð fy, ið.krk dk igys l s mi l Fkr jguk vr; r vko'; d gð fol j. k dh nj inkFkka oð vkdkj ij fuHkj djrh gð ; g rks igys l s gh Li"V gS fd y?kq inkFkz rst xfr l s fol j. k djrs gð fdl h Hkh inkFkz dk fol j. k f>Yyh oð i e [k l g Hkxh fyfi M (Lipid) ea ?kyu'khyr ij fuHkj djrk gð fyfi M ea ?kyu'khy inkFkz f>fYydk oð ekè; e l s rst h l s fol fjr gkrsgð ft l inkFkz dk vák ; k ekbVh (Moiety) tyjxh gkrk gð og f>fYydk oð vkj&i kj dfBukbZ l s xqjrk gð vr% mudh xfr dks l qe cukus dh vko'; drk gkrh

gð , d s v . k q d k s v k j & i k j d j u s o ð f y , f > f Y y d k i k s / h u L F k k u m i y C / d j k r h g ð o s
 l k m r k i ð . k r k L F k k i r u g h a d j i k r s t c f d v . k q / k a o ð f o l j . k o ð f y , l k m r k i ð . k r k
 f u f ' p r r k s i j i g y s l s g h m i f L F k r g k s u h p k f g ,] H k y s g h m l g a i k s / h u l s e n n f e y
 j g h g k ð ; g i f Ø ; k g h l q k è ; f o l j . k d g y k r h g ð

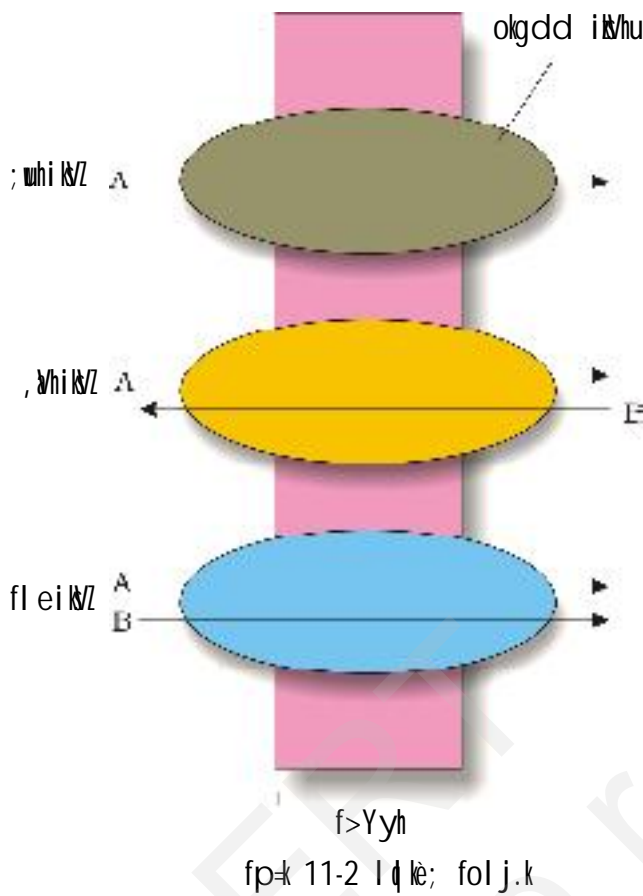
l q k è ; f o l j . k e a i n k F k k ð d k s f > Y y h o ð v k j & i k j d j u s e a f o f ' k ' V i k s / h u e n n
 d j r h g s v k s b l e a , V h i h Å t k z d k H k h 0 ; ; u g h a g k r k ð l q k è ; f o l j . k f u E u l s m P p
 l k m r k e a i w k z i f j o g u u g h a d j l d r k g s v r % b l d k j . k Å t k z f u o s k d h v k o ' ; d r k
 g k s h g ð i f j o g u d h x f r n j r c v f / d r e g k s h g s t c i k s / h u o ð l H k h l ð k g d k a d k
 i z k s i w k z i l s g k ð l q k è ; f o l j . k v f r f o f ' k ' V g k s k g ð ; g d k s ' k d k v k a d k s i n k F k k ð
 o ð m n x g . k o ð f y , p ; u d j u s d h N W i n k u d j r k g ð ; g f u j k s / d k a o ð i f r
 l ð s n u ' k h y g k s k g s t k s i k s / h u d h i k ' o z k k y k l s i f r f Ø ; k d j r h g ð

v . k q / k a d k s v k j & i k j t k u s o ð f y , f > f Y y d k e a e k s t m i k s / h u j k L r k c u k r h g ð o ð N
 j k L r s g e s k k [k y s g k s r s g ð r F k k o ð N f u ; ð k r g k s l d r s g ð o ð N c m s g k s r s g s t k s f o f H k l u
 i z k j o ð v . k q / k a d k s i k j t k u s d h N W n r s g ð i k f j u , d i z k j d h i k s / h u g s t k s
 l y k f L V M e k b v k s d k m s k r F k k c ð V h f j ; k d h c k á f > Y y h e a c m s v k d k j o ð f N n k a d k
 f u e k z k d j r h g s r k f d f > Y y h e a l s g k d j i k s / h u o ð N k s / l k b t o ð v . k q H k h m l e a l s
 x t j l o ð

f p = k 11-1 i n f ' k z d j r k g s f d c k á d k s ' k d h ; v . k q i f j o g u i k s / h u i j c ð / r j g r s
 g ð v k s ; g h i f j o g u i k s / h u c k n e a ? k w k z g k s d j d k s ' k d k o ð H k h r j v . k q d k s e ð r d j
 n r s h g ð m n k g j . k o ð r k s i j t y e k x z & t k s v k B r j g o ð f o f H k l u , D o k i k f j u l s c u k
 g k s k g ð



f p = k 11-1 l q k è ; f o l j . k



11-1-2-1 fuf"Ø; fl ei ks/Z rFkk , whi ks/Z

oqN okgd ;k ifjogu iks/hu fol j.k dh vuøfr rHkh nrsgð tc nksrjg oð v.kq, d l kFk pyrs gð fl ei ks/Z eð nksuka v.kq, d gh fn'kk ea f>fYydk dks ikj djrs gð tcfð , whi ks/Z ea osmyVh fn'kk ea pyrs gð (fp=k 11-2)A tc , d v.kq nð js v.kq l sLorak gkðj f>fYydk dks ikj djrk gð rc bl fof/ dks ; fui ks/Z dgrs gð

11-1-3 l fØ; ifjogu

l fØ; ifjogu l kmrk ið .krk oð fo#¼ v.kq/ka dks ið djus ea ÅtkZ dk mi ;ksx djrk gð l fØ; ifjogu f>fYydk iks/hu }kjk iwkZ fd;k tkrk gð vr% f>fYydk oð fofHkku iks/hu l fØ; rFkk fuf"Ø; nksuka ifjogu ea eq; Hkðedk fuHkkrsgð ið , d rjg dk iks/hu gS tks inkFkka dks f>fYydk oð ikj djkus ea ÅtkZ dk iz,ksx djrh gð ; sið iks/hu inkFkka dk de l kmrk lsvf/d l kmrk rd ifjogu dj k l drsgð ifjogu dh xfr vf/dre rc gksh gStc ifjogu djusokys l Hkh iks/hu dk iz,ksx gks jgk gks ;k og l arlr gh D;ka u gkð , atkbeka dh Hkðer okgd iks/hu f>fYydk oð ikj djusokys inkFkka oð ifr cgr vf/d fof'k"V gksh gð ; sið iks/hu fujks/d oð ifr Hkh l ðnu'khy gksh gS tks ik'oz kkyk l s ifr fØ; k djrs gð

11-1-4 fofHkku i fjogu fof/; ka dh rgyuk

rkfydk 11-1 ea fHkku&fHkku ifjogu rak dh rgyuk dh xbZ gð tS k fd Li"V gks pðk gS fd f>fYydk dh iks/hu l q kè; fol j.k , oa l fØ; ifjogu oð fy,

rkfydk 11-1 fofHkku i fjogu rakka dh rgyuk

xqk	l k/kj. k fol j. k	l q kè; ifjogu	l fØ; ifjogu
fof'k"V f>fYydk iks/hu dh vlo'; drk	ugha	gk	gk
mPp o. Hkðed	ugha	gk	gk
ifjogu l arlr	ugha	gk	gk
f'k[kjki fj (vifgy) ifjogu	ugha	ugha	gk
, Vhih ÅtkZ dh vlo'; drk	ugha	ugha	gk

mUkjnk; h gkrh gS rFkk bl idkj ; g mPp o.kkRed gksus oL lkekU; y{k.k tS sl arl
 gksuk] fujks/dka oLl ifr vuqØ; k rFkk gkekZuh; fu; ak.k inf'kZ djrsga yfdu folj.k
 pkgs l q kè; gks ; k ugha id.krk oLl vuq kj gkrk gS rFkk ÅtkZ dk mi ; kx ugha djrkA

11-2 ikni&ty lca'

i kS/ka oLl 'kkjhfd fØ; kdyki oLl fy, ty vfuok; ZgsvkS ; g l Hkh thfor i kf.k; ka oLl
 fy, , d vr; r egUoiwZ HkRedk fuHkkrk gA ; g og ekè; e mi yC/ djkrk gS ftlea
 l Hkh inkFkZ?kyu'khy gkrsgA tho nØ; eagtkjarjg oLl v.kq ikuh ea?kyS gkrsgA vkSj
 fuyfcr jgrsgA , d rjct oLl vaxZ 92 ifr'kr lsvf/d Hkx ikuh dk gkrk gS rFkk
 T; knkrj 'kkdh; i kS/ka ea 'kq d inkFkZ oLl boy 10 l s 15 ifr'kr gkrk gS ckdh ty gkrk
 gA gkykEd ; g dkr fcYoty l p gSfd , d i kS's ea ty dk forj.k fHkUu&fHkUu gkrk
 gS dk"B okys Hkx ea Fkkk/k de gkrk gS rFkk uje Hkx ea cgr T; knkA , d cht l v[kk
 l k fn[k l drk gS i jarq fi Qj Hkh ml ea ikuh dh oqN ek=kk gkrh gS vU; Fkk og thfor
 ugha jgsk vkSj 'olu Hkh ugha djskA

LFkyh; i kS's ifrfnu Hkjh ek=kk ea ikuh xg.k djrsga yfdu ifUk; ka l s
 budk vf/drj Hkx ok'i kBl tZ }jkj gok ea mM+ tkrk gA eDoLl dk , d ifjiDo
 i kS/k , d fnu ea yxHkx rhu yhVj ikuh vo'kks"kr djrk gS tcd l j l ka dk
 i kS/k yxHkx i kp ?k/sea viusotu oLl cjkj ikuh vo'kks"kr dj yrk gA ikuh dh bl
 mPp ek=kk dh ek oLl dkj.k] ; g vk'p; Z ugha gksuk pkfg, fd Nf"k , oa i kNfrd
 i ; kbj.k ea i kS's dh of¼ , oamRi kndrk dks l hfer djus okyk l hekdkjh dkjd ik; %
 ty gh gkrk gA

11-2-1 ty foHko ; k ty vr% kfDr

ikni&ty lca' dh 0; k[; k djus oLl fy, oqN fo'kks ekud 'kCnka dh l e> vè; ; u
 dks vkl ku cuk nrh gA ty foHko ty dh xfr ; k ifjogu dks l e>us oLl fy,
 vk/kjHkr /kj.kk gA foys foHko ; k foys vr% kfDr rFkk nkc foHko ; k nkc
 vr% kfDr ty foHko dks l fuf'pr djus okys nks e[; dkjd gA

ty oLl v.kq/ka ea xfrt ÅtkZ i kbZ tkrh gA nØ rFkk xS dh voLFkk ea os vfu; fer
 xfr djrsgg ik, tkrsgS ; g xfr rhoz rFkk lLFkj nksuka rjg dh gks l drh gA fd l h
 rak ea ; fn vf/d ek=kk ea ty gkrks ml ea vf/d xfrt ÅtkZ rFkk ty foHko gkskA
 vr% ; g l fuf'pr gSfd 'kq4 ty ea l cl s T; knk ty foHko gkskA ; fn dkbZ nks
 vrfoZV ty rak l a oLl ea gkars ikuh oLl v.kq oLl vfu; fer xfr oLl dkj.k ty oLl
 okLrfod xfr dh Rofjr xfr T; knk ÅtkZ okys Hkx l s de ÅtkZ okys Hkx eagkschA vr%
 ikuh mPp ty foHko okys vrfoZV ty oLl rak l s de ty foHko okys rak dh vkj
 tk, xA inkFkZ dh xfr dh ; g i fØ; k ÅtkZ dh id.krk oLl vuq kj gkrh gS vkSj folj.k
 dgykrh gA ty foHko dks xhd fpUg Psi ; k ψ l s fpeR fd; k x; k gS vkSj bl s
 i kl dYl tS h nkc bdkbZ ea 0; Dr fd; k x; k gA i j j k oLl vuq kj 'kq4 ty oLl ty

foHko dks ,d ekud rki ij tks fdl h nkc ea ugha g\$ ij 'k0; ekuk x;k g\$
 ;fn oqN foys 'k0 ty ea ?kksys tkrsg\$ rks ?kksy ea epr ikuh de gks tkrk
 g\$ ty dh lknrk ?kV tkrh gsvk\$ ty foHko Hkh de gks tkrk g\$ bl hfy, l Hkh
 foys uka ea 'k0 ty dh vi\$kk ty foHko fuEu gsrk g\$ bl fuEurk dk ifjek.k
 , d foys o\$ nhdj.k o\$ dkj.k g\$ ftl s foys foHko dgk tkrk g\$ (;k Ψ_s)A
 Ψ_s l n\$ udkjRed gsrk g\$ tc foys o\$ v.kq vf/d gsrsg\$ rks Ψ_s vf/d
 udkjRed gsrk g\$ ok; eMyh; nco ij foys ;k ?kksy dk ty foHko $\Psi_s =$ foys
 foHko Ψ_s gsrk g\$

;fn ?kksy ;k 'k0 ty ij ok; eMyh; nco l s vf/d nco yxk;k tk, rks
 ml dk ty foHko c<+tkrk g\$;g , d txg l snljh txg ikuh ia djuso\$ cjkj
 gsrk g\$ D;k vki l kp l drsg\$fd gekjs 'kjhj o\$ fdl rak eankc fufe\$ gsrk g\$
 tc folj.k o\$ dkj.k i k\$sdh dks'kdk eaty i\$sk djrk gsvk\$ og dks'kdk fHk\$
 dh vkj c<k nrk gsvk\$ dks'kdk dksLi chr cuk (i tyk) nrk g\$ (fp=k 11-2)A ;g
 nkc foHko dks c<k nrk g\$ nkc foHko T;knkrj l dkjRed gsrk g\$ gkyk\$
 i k\$ka ea udkjRed foHko ;k tkbye o\$ ty [kM ea ruko , d rus ea ty o\$
 ifjogu eaeglo i wkZ Hk\$edk fuHkrk g\$ nkc foHko dks Ψ_p l s fpfEr fd;k x;k g\$
 dks'kdk dk ty foHko] foys , oankc foHko nksuka gh l s i Hk\$for gsrk g\$ bu nksuka
 o\$ chp l ea/ fuEu izdkj l s gsrk g\$

$$\Psi_s = \Psi_s + \Psi_p$$

11-2 ijkl j.k

i k\$'s dh dks'kdk] dks'kdk f>Yyh ;k , d dks'kdk fHk\$ l s f?kjh gsrh g\$;g
 dks'kdk fHk\$ ty , oafoy;u ea inkFk\$ o\$ fy, epr : i l s i kxE; gsrh g\$ vr%
 ;g ifjogu ;k xfr o\$ fy, ck/d ugha gsrh g\$, d i k\$'s dh dks'kdkvka ea i k;%
 , d o\$mh; jl /kuh gsrh g\$ ftl dk jl /kuh; pr jl dks'kdk o\$ foys foHko ea
 Hk\$khkjh djrk g\$ ikni dks'kdk ea dks'kdk f>Yyh rFk\$ jl /kuh dh f>Yyh]
 Vksk\$y[kLV] nksuka , d l kFk dks'kdk o\$ Hk\$hrj , oackgj v.kq/kadh xfr fu/k\$jr djus
 o\$ fy, egRo i wkZ gsrsg\$

ijkl j.k fo'k\$: i l s , d foHknd v/Z ;k i kxE; f>fYyd o\$ vkj&ikj
 ty o\$ folj.k o\$ fy, l mfHk\$ fd;k tkrk g\$ ijkl j.k Lor% gh ifjr cy dh
 vuf\$;k l s i\$ik gsrk g\$ ijkl j.k dh fn'kk , oa xfr nkc i \$.krk , oa l knrk
 i \$.krk ij fuHk\$ djrh g\$ ty viusmPp jkl k;fud foHko (;k l knrk) l s fuEu
 jkl k;fud foHko ea rc rd l p\$fr gsrk g\$ tc rd fd l kE;rk ij u igp tk, A
 l kE;rk ij nks d{kka dk ty foHko , d leku gsk\$ p\$fg, A

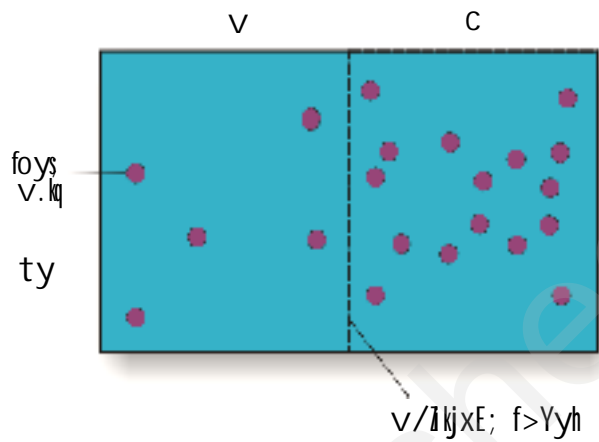
vkis fo|ky; ea igys o\$ pj.kka ea , d vkywdk ijkl j.kekih (vkl\$ehVj)
 cuk;k gsk\$A ;fn dm dks ikuh ea j[kk tkrk g\$ rks vkywo\$ dm dh xgk ea j[kk
 'ko\$jk dk l knz ?kksy ijkl j.k o\$ }kjk ikuh dks , d=k dj yrk g\$

fp= 11-3 dk vè; ; u dj] ft l eanks d{kkav , oa c ea j [ks x; s foy; uka dks Hkj dj v/ l k j x E; f > Yyh }kjk v y x & v y x fd; k x; k g ß

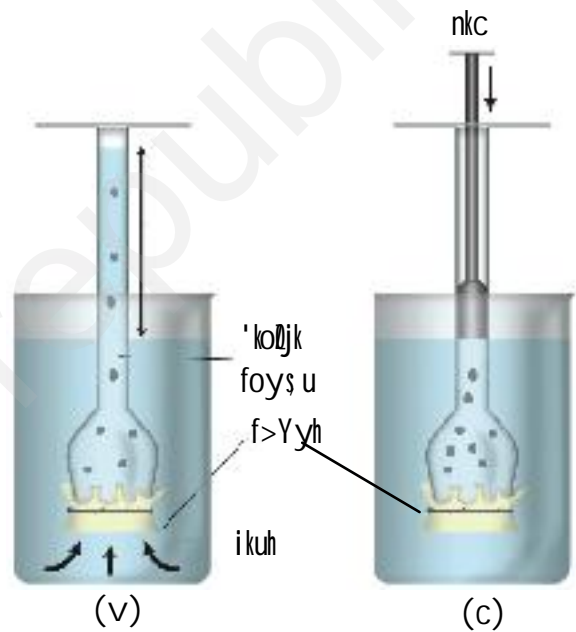
- (v) fdl d{k oß ?kky ea , d fuEurj ty foHko gß
- (c) fdl d{k oß ?kky ea fuEurj foys foHko gß
- (l) i j l j . k fdl fn'kk ea l a lu gksk\
- (n) fdl foy; u dk mPp foys foHko mPprj gksk\
- (;) l k E; rk oß l e; fdl d{k ea ty foHko fuEurj gksk\
- (j) ; fn , d d{k ea ψ dk eku & 2000 kPa gS v k j n l j s ea & 1000 kPa gS r k s fdl d{k ea mPprj ψ gksk\

vk b ,] , d n l j s i z k x dh p p k z d j] t g h 'koDjk oß foys u dks , d dhi eafy; k x; k gß tks , d chdj ea j [ks x , i kuh l s v / l i k j x E; f > Yyh }kjk v y x gß (fp= 11-4) A (vki bl idkj dh f > f Y y d k , d v M s l s i k r dj l d r s gß vki v M s oß , d fl j s i j N k s / k l k N n d j oß l k j k i h y k , oa 'o r i n k F k z (; k y d , oa , Y c f i e u) f u d k y y a v k j f i l j v M s oß d o p d k s o f N ? k a oß f y , r u q u e d oß v E y (H c l) ea N k M + n A v M s d k d o p ? k y t k , x k v k j m l dh f > Y y h l k o r i k r g k s t k , x h) A i kuh dhi dh v k j x f r d j s k v k j dhi ea ? k k y d k l r j c + t k , x k A ; g i f Ø ; k r c r d t k j h j g s c h t c r d f d l k E ; r k dh f l F k f r u g h a v k t k r h A ; f n f d l h d k j . k o ' k j ' k o D j k f > Y y h oß e k è ; e l s c k g j f u d y v k , a r c D ; k d H k h l k E ; r k dh f l F k f r v k , x h \

dhi oß Å i j h H k k x i j c k g j h n k c M k y k t k l d r k g S r k f d f > f Y y d k oß e k è ; e l s d h i e a i k u h f o l f j r u g k A ; g n k c i k u h d k s f o l f j r g k s s l s j k c d r k gß f o y s l k m r k v f / d g k s i j i k u h d k s f o l f j r g k s s l s j k c d u s oß f y , v f / d n c k o dh H k h v k o ' ; d r k g k s c h A l ð ; k R e d v k / k j i j i j l j . k n k c i j l j . k f o H k o oß c j k c j g k r k g S y s d u b l d k l o r f o i j h r g k r k gß i j l j . k n c k o e a i z o r n k c l d k j k R e d g k r k g S t c f d i j l j . k f o H k o u d k j k R e d g k r k gß



fp= 11-3



fp= 11-4 i j l j . k dk , d i n z l a , d dhi ea 'koDjk foy; u Hkj dj] i kuh l s H k j s c h d j e a m Y V k j [k k x ; k gß f t l d k e d k v / l i k j x E; f > Y y h l s c m gß (v) ty f > Y y h d k s i j d j r s g q f o l j . k l s d h i oß ? k y d j l r j c < k , x k (t s k dh r h j oß fu'ku fn [k j g s gß) (c) dhi ea ty oß c g l o d k s j k c d u s oß f y , n k c d k b l r e k y f d ; k t k l d r k g S t s k f d f p = k e a f n [k ; k x ; k gß

11-2-3 thonð; oþpu

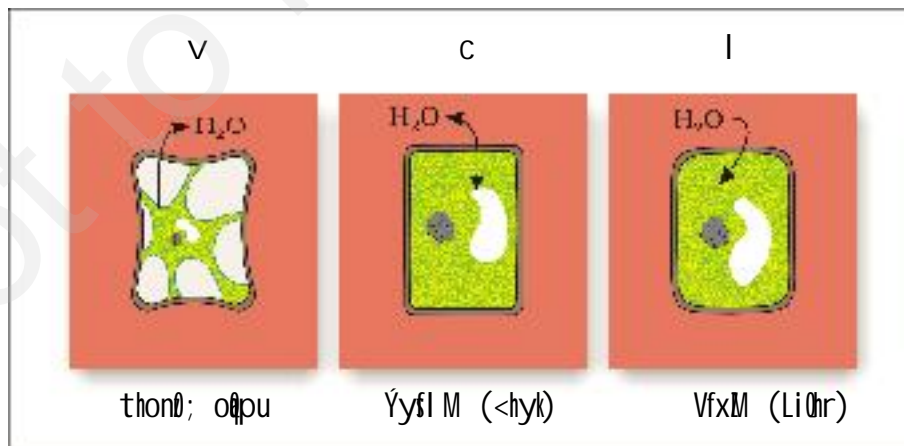
ikni dks'kdkvka (;k Årdkð) ea ty dh xfr oð ifr 0; ogkj djuk ml oð vkl & ikl oð ?kksy ij fuHkj djrk gð ;fn ckgjh ?kksy dks'kdk nð; oð ijkl.j.k nkc dks l arfyr djrk gS rks ml s ge l ei jkl kjh dgrs gð ;fn ckgjh foys u dks'kdk nð; l svf/d ruñr gS rks ml s vYi ijkl jh dgrs gð vks ;fn ckgjh foys u cgr vf/d l knrk; þr gkrk gS rks bl s vfri jkl kjh dgrs gð dks'kdk, avYi ijkl kjh ?kksy ea i þyrh gð vks vfri jkl kjh ea fl oðMfrh gð

thonð; oþpu rc gkrk gS tc dks'kdk l s ikuh ckgj xfr dj tk, rFkk ikni dks'kdk dh dks'kdk f>Yyh fl oðMedj dks'kdk fhkfulk l s vyx gk tkrh gð ; g rc gkrk gS tc , d dks'kdk (;k Ård) dks vfri jkl kjh ?kksy ea Mkyk tkrk gð l cl s igys thonð; l s ikuh ckgj vkrk gS fi Oj j l /kuh l a tc dks'kdk l s fol j.k }kjk ikuh fudy dj cká dks'kdk nð; ea tkrk gS rc thonð; dks'kdk fhkfulk l s vyx gk tkrh gS vks bl s dks'kdk dk thonð; oþpu dgk tkrk gð ty dk ifjogu f>Yyh oð vkl&ikj mPprj ty foHko {ksk (vFkkz~dks'kdk) fuEurj ty foHko {ksk ea dks'kdk oð ckgj (fp=k 11-5) tkrk gð

thonð; oþpr dks'kdk ea dks'kdk fhkfulk , oal oþpr thonð; oð chp dh txg dks dks Hkjrk gð

tc dks'kdk (;k Årdkð) dks l ei jkl kjh ?kksy ea j[kk tkrk gS rks ty dk oþy i Hkko vñj ;k ckgj dh vks ughagkrk gð ;fn cká ?kksy thonð; oð ijkl kjh nkc dks l arfyr j[krk gS rks bl s l ei jkl kjh dgrs gð dks'kdkvka ea tc ty vñj vks ckgj l eku : i l s iðkfr gkrk gS rks dks'kdk, a l kE; koLFkk ea dgh tkrh gð rc dks'kdk dks <hyk (Ýyksi M) dgk tkrk gð

thonð; l oþpu dh ifø; k ik; %i frorh gkrh gð tc dks'kdkvka dks vYi jkl kjh ?kksy (mPp ty foHko ;k thonð; dh rnyuk ea ruñr) foys u ea j[kk tkrk gS rks dks'kdk ea ty fol fjr gkrk gS vks thonð; dks fhkfulk oð fo#¼ ncko cukus dk dkj.k curk gS ft l s Li ðfr nkc dgk tkrk gð ikuh ?kd usoð dkj.k tho nð; }kjk



fp=k 11-5 ikni dks'kdk dk thonð; oþpu

i dV fd, x, d Bkj fHkfʲk oʲ fo i jhr nkc dks nkc foHko ; k ʰp dgrs gʲ dks' kdk
fHkfʲk dh n<ʰk oʲ dkj.k dks' kdk ugha i Ovrh gʲ ; g Li Ofr nkc vr% dks' kdkvka
oʲ foLrkj , oa i Oʲko oʲ fy, mʲkjk; h gksk gʲ
, d <hyh dks' kdk dk ʰp D; k gksk\
i kʰs oʲ vykok fdI tho ea dks' kdk fHkfʲk gksk gʲ

11-2-4 vr% kʰk.k

vr% kʰk.k , d fo' kʰk i d kj dk fo l j.k gʲ tc Bkd , oa dksykbMI }kjk i kuh dks
vo' kʰk'kr fd; k tkrk gS rks bl oʲ dkj.k ml oʲ vk; ru ea fo' kky : i l so f¼ gksk
gʲ vr% kʰk.k oʲ ifr' Br mngj. kka ea cht ka vks l vʲkh ydfM+ka }kjk ty dk
vo' kʰk.k gʲ i oʲy gʲz ydMh ; k dk" B oʲ }kjk i ņk fd, x, nkc dk iz kx vkfn
ekuo }kjk dMh pVvka , oa i RFjka dks rka M us oʲ fy, fd; k tkrk FkA ; fn vr% kʰk.k
oʲ }kjk nkc ughagksk rks uokn fHkn [knyh tehu ij mHkj dj ughavk i krʲ os l bkor%
ckgj vkdj LFkfir ughagks i kra

vr% kʰk.k Hkh , d i d kj dk fo l j.k gʲ D; k ad ty dh xfr l kmz k i d. krk oʲ
vuq kj gʲ cht ; k vʲ; , d h gh l kefxz ka ea i kuh yxHkx ugha oʲ cjkj gʲ vr%
; svkl kuh l sty dk vo' kʰk.k dj yrs gʲ vo' kʰk'kd rFk vr% kʰk'kr gksokys nʲ
oʲ chp ty foHko i d. krk vko' ; d gʲ bl oʲ vfrfjDr] dkbz Hkh inkFkz tksfdI h
Hkh nʲ dks vr% kʰk'kr djrk gʲ vo' kʰk'kd vks nʲ oʲ chp ca'rk gksk igyh
'krz gʲ

11-3 ych njih rd ty dk ifjogu

i kʲHkd voLFk eavki us, d iz kx fd; k gkskA bl iz kx oʲ nʲku vki usjachu i kuh
ea l i ņ i oʲy l fgr Vguh dks Mkyk gksk rFk ml oʲ ja oʲ ifjorʲ dks Hkh nʲkk
gkskA Vguh oʲ dVs Nkj dks oʲN ?kʲ/srd ?kʲy ea jgus oʲ ckn vki usfuf' pr gh
ml {kʲk dks è; ku l snʲkk gksk ft l ea l s jachu i kuh dk ifjogu gksk gʲ ; g iz kx
vkl kuh l sn' kʲz k gSfd i kuh oʲ ifjogu dk jkLrk l oʲguh cMʲy ed; r% tkbye gʲ
vc ge ykʲka dks vks vks <uk gʲ i kʰka ea i kuh rFk vʲ; inkFkʲ oʲ ifjogu dh
ifʲ; k dks l e >uk gʲ

y ch njih rd inkFkʲ dk ifjogu oʲoy fo l j.k }kjk ughagks l drk gʲ fo l j.k
, d /heh ifʲ; k gʲ ; g Nks/h njih rd v. kq/ka dks i gʲpkuse adkjxj gʲ mngj. k oʲ
fy, % , d ik: fid i kni dks' kdk (yxHkx 50µm) oʲ vkj& i kj v. kq dks xfr djus
oʲ fy, yxHkx 2-5s l e; yxrk gʲ bl nj ij vki D; k x. kuk dj l drs gʲ fd
i kʰka oʲ vʲj 1m dh njih r; djus ea v. kq/ka dks fo l j.k oʲ }kjk fdruk l e;
yxsk\
cMʲ, oa tVʲy thoka ea cgg'k inkFkʲ dk ifjogu ych njih rd gksk gʲ
dHkh&dHkh mRi knu ; k vo' kʰk.k , oa l xz. k oʲ LFkku , d nʲ js l s dki ņ njih gksk gʲ
vr% fo l j.k , oa l fʲ; ifjogu dki ņ ugha gʲ bl fy, fo' k" V 0; ki d njih dk

ifjogu rak vko'; d gkstrk gSrkfd vko'; d inkFKZ fuf'pr : i lsrhoz xfr l s
 igp l oA ty] [kfut rFkk Hkkstu lkefigd izkkyh }kjk ifjogu djrsgA lkefigd
 ; k Fkksd i okg ea inkFKkAdk , d LFkku l smt js LFkku rd ifjogu] nks fcmq/ka o chp
 nkc dh fHkkuurk o ifj.kkeLo: i gkrk gA lkefigd i okg dh ; g fof'k'Vrk gSfd
 inkFKZ pkgS ?kksy gks ; k fuyæu unh o i okg dh rjg gh cgrk gA ; g folj.k l s
 fHkku gkrk gS t gk ij fofHkku inkFKZ viuh l kmrk i o.krk o vud kj Lorak : i l s
 ifjogfur fd, tkrsgA Fkksd i okg dks rks ?kukRed tyh; nkc i o.krk ; k ½.kkRed
 tyh; nkc i o.krk (tS % i qky o }kjk pWk.k) o }kjk i ktr fd; k tk l drk gA
 inkFKkAdh i knika o l oguh Årdka o }kjk Fkksd ; k lkefigd xfr dks LFkkukarj.k
 dgrsgA D; k vki dks; kn gSfd tc vki us Åps i knika dh tMæ ruka rFkk i fûk; ka o
 vud LFk dkV (Økl l d'ku) dks n[kk Fkk vkSj ml dh l oguh izkkyh dk vè; ; u
 fd; k Fkks mPp i knika ea cgr gh mPp fo'kshNir l oguh Ård & tkbye vkSj
 Ýyks e gkrsgA tkbye e[; : i l sty] [kfut yo.kk o qN dkcud ukbVktu rFkk
 gkekA dks tM+l sok; oh; Hkkx rd LFkkukarfjr djrk gA Ýyks e e[; : i l s fofHkku
 izkj o dkcud , oavdkcud foys uka dks i fûk; ka l s i knika o fofHkku Hkkxka ea
 LFkkukarfjr djrk gA

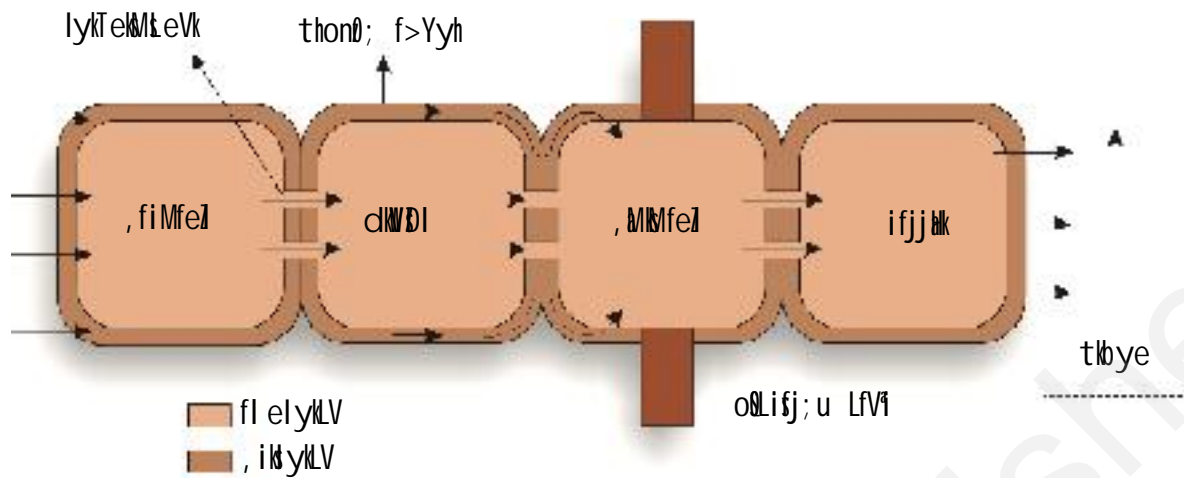
11-3-1 i kS's ty dks o l svo'kks'kr djrsgA

ge l Hkh tkurs gSfd tMæ i Mæ o fy, T; knkrj ty dks svo'kks'kr djrh gA bl hfy,
 ge ty dks enk ea MkyrsgA u fd i fûk; ka i jA ty vkSj [kfut rRoka o vo'kks'k.k
 dh ftEenkjh fo'kks : i l sey jkæka dh gkrh gS tksfd tMæ o vxz 'kh'kz Hkkx ij
 yk [kka dh l ; k ea ik, tkrsgA ey jkæ iryh fHkfûk okys gkrsgA tks svo'kks'k.k o
 fy, 0; ki d : i l s {kks ink u djrsgA ty] [kfut & foys o l kFk ey jkæ l s gkclj
 'kq : i l s folj.k i fØ; k o }kjk vo'kks'kr fd; k tkrk gA , d dkj tc ey jkæ
 }kjk ty vo'kks'kr dj fy; k tkrk gS rc og tMæ dh xgjh irkæ eank fHkku i Fkka
 l s xfr djrk gA nks fHkku i Fk fuEu g%

- , i ktykLV i Fk
- fl elykLV i Fk

, i ktykLV fudVorhZ dks'kdk fHkfûk dk rak gA tMæ o varLropk ea ekSt m
 o l i jh i VVh dks NkMl j i js i kS's ea i oSyk jgrk gS (fp=k 11-6)A ty dk
 , i ktykLV d ifjogu o boy varjdks'kdh; txgka vkSj dks'kdk vkadh fHkfûk ea mRi l u
 gkrk gA , i ktykLV o ekè; e l s gksisokyk ifjogu dks'kdk f>Yyh dks i kj ugha djrk
 gA ; g xfr i o.krk ij fuHkj djrh gA , i ktykLV ty o ifjogu ea dkbZ Hkh ck/
 k ugha Mkyrk gS vkSj ty ifjogu lkefigd i okg o ekè; e l s gkrk jgrk gA tS
 gh ty varjdks'kdh xgk ; k okroj.k eaok'ir gkrk gS rks, i ktykLV o l rr ty
 i okg ea ruko mRi l u gks tkrk gA vr% vki æ d , oal åkfDr 'khyrk o dkj.k ty
 dk lkefigd i okg gkrk gA

fl elykLV d rak var% l æ /r tho nð; dk rak gA i Ml h dks'kdk, a dks'kdk
 yMh l s tMæ gkrh gA tks fd tho nð; ræ rd foLr : i l s i oSyk jgrh gA



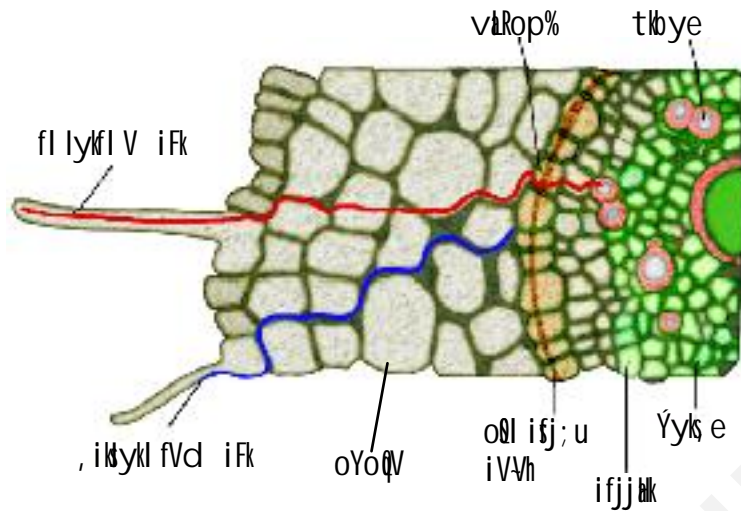
fp=k 11-6 tM+ea ty oL xfr dk iFk

fl elyLVd ifjogu ea ty dks'kdkvka oL tho nD; oL ekè; e lsrFk vrj dks'kdh ifjogu ea; g tho nD; rraq oL ekè; e lsvkxsc<fk gA ty dks'kdkvka oL vni dks'kdk f>Yyh oL ekè; e lsiDsk djrk gS vr%bl izdkj dk ifjogu vi{kkN r /hek gsrk gA fl elyLVd dks ifjogu ea dks'kdk nD; h iDkgu l gk; rk djrk gA vki dks'kdk nD; h iDkgu dks gkbFM'yk dh iUkh oL dks'kdk ea nS[kk gksk] DykjktyLV dk ifjogu iDkg oL dkj.k vki kuh l s fn [kkbz iM+l drk gA

tMka ea vf/drj ty iDkg , ikyLV oL ekè; e lsrMri lu gsrk gS pfid oYoQV&dks'kdk, j <hyh xBr gsrh gSvr% ty dh xfr eafdl h izdkj dk ifrjks/ mri lu ugh gsrkA gkyfd oYoQV dh vkrfjd l hek] l hek vr%ropk] i kuh oL fy, viDsk; gsrh gA , d k l pSjue; eSVDI oL dkj.k gsrk gSft l s oLi gh i VVh dgk tkrk gA i kuh dk v.kq irZ dks HknuS oL vl eFkZ gsrk gS vr% blga vl pSjue; dks'kdk fHkFk {sk dh vkj i q% f>Yydk oL ekè; e l s dks'kdk oL vni Hk k tkrk gA bl oL dkn ty fl elyLV oL }kj xfr'khy gsrk gSvkS i q% f>Yyh dks i kj djrk gSrkfd tkbye dks'kdkvka rd igp l oA ty dh xfr enyijr l s vr% dks'kdk rd fl elyLVd gsrh gA ; gh , d jklrk gSft l s i kuh rFk vl; foys oL oYj fl fyMj ea iDsk djrs gA

, d dkj tkbye ekè; e oL Hkhrj igpusij ty i q% dks'kdkvka oL chp rFk ml oL vkj&ikj tkus oL fy, Lorak gks tkrk gA ubZ tMka ea ty l h/s tkbye okfgdkvka ; k&vkS okfgudkvka ea iDsk djrk gA ; s thou jfgr ukfy; k; gA vkS , d izdkj l s , ikyLV dk fg l k Hkh gA eny l Dguh rak ea ty rFk [kfut vk; uka dk ekxZ fuEu fp=k ea l {k hN r fd; k x; k gS (fp=k 11-7)A

oQn i kS'ka ea vfrfjDr l j puk, a tMka gsrh gA tks mlga ty (, oa [kfutk] oL vo'kksk.k eaenn djrh gA ekbdkj kbt k tM+oL l kFk i Oi Qnh (dod) dk l gthoh l xBu gA i Oi Qnh ; k dod rraqubZ tMka oL vki &ikl uS'ood (cukrS) gA; k osemy dks'kdk ea iDsk dj tkrS gA dod rraqdk , d cMk 0; ki d ry {sk gsrk gS tks Hkne l s [kfut vk; u , oa ty dks eny l s vf/d ek=kk ea vo'kks"kr dj yrk gA



fp-k 11-7 ty , oa vk; u dk fl lyfllVd , oa , i kykl fVd iFk rFk tMla ea i dkg

;sdod tM+dksty ,oa [kfut mi yC/ djkrsgá vks cnysea tMaHkh ekbdkjktbth dks 'kodbj rFkk ulbVktu lekgr ; ksd indku djrs gá oqN i kS/kadk ekbdkjktk oØ l kFk dk vfodYih l a/ gkrsgá mnkgj.k oØ fy, ekbdkjktk dh mi fLFkr oØ fcuk phM+dk cht u rks vøfjr gks l drk gS vks u gh LFkkfir gks l drk gá

11-3-2 i kS/kaeaty dk Áij dh vkj xeu

geus vHkh ns[kk fd i kS's enk l s ty dk oØl s vo'kkS.k.k djrs gá vks l oguh Árdka eabl soØl sigpkrsgá vc ge ; g tkuuso le>usdk iz kl djksfd ty i kS'soØ fofHkuu Hkkxkaard oØl sigprk gá ; g ty dk pyu fØ; k'khy gS; k vHkh Hkh fuf"Ø; gS pfid ty iM+oØ ruseax#Rokd" k z k oØ fo#¼ xfr djrk gS rks bl oØ fy, Átkz dks nrk gS

11-3-2-1 ewy nkc

tS sfd enk oØ fofHkuu vk; u l fØ; rk oØ l kFk tMla oØ l oguh Árdka ea i fjogfur gkrsgá r ksty Hkh bl h i fØ; k dk vuq j .k (viuh foHko ið.krk l) djrk gS rFkk tkbye oØ vñj nkc c<rk gá ; g ?kukRed nkc gh ewy nkc dgykrk gS vks rus ea de ÁpkbZ rd ty dks Áij HkstusoØ fy, mlkjnk; h gkrk gá ge oØl ns[k l drs gáfd ewy nkc fo|eku gá bl oØ fy, ,d Nvk l k uje rusokyk i kS'k p qavks ft l fnu okrkoj.k i ; klr vknzk i w k g k ml fnu i kr%dky oØ l e; rus oØ uhps {k r t fn'kk eaml srh [k s C y M l s d k V n á vki t Y n gh ns[k sfd ml d V s g q rus i j n o dh o q N ek-kk Áij dh vkj m B vkrh gá ; g n o l d k j k R e d ewy nkc oØ d k j .k vkrk gá ; f n vki ml rusea , d j c j dh iryh uyh p < k narksvki okLro ea l ko dh nj eki l drsgá vks l kfor n o oØ d k j d k a dh l j p u k t k u l drsgá ewy nkc dk i H k k o j k r r F k k l q g oØ l e; H k h n s [k k t k l d r k g S t c o k " i h d j .k dh

ifø;k de gkrh gʰ vʰj vfrfjDr i kuh ?kkl oʰ frudka dh ukd ij fo'kʰk fNnka l s
l for ty cmka oʰ : i ea yVdus yxrk gʰ bl izdkj no oʰ : i ea i kuh dk {k;
fcmʰ ko (xVʰku) dgykrk gʰ

ty ifjogu dh oʰ ty fø;k ea euy nkc oʰ oy , d l k/kj.k nkc gh inku dj
i krk gʰ ;g mPp oʰ kka ea ty oʰ pyu ea bl dh dkbz cMh Hkfedk ugha gkrh gʰ
euy nkc dk 0;ki d ;ksnku tkbye ea i kuh oʰ v.kq/ka dks fujarj dMh oʰ : i ea
LFkfir j[kusea gks l drh gʰ tksfd vDl j ok'i kʰl tʰu oʰ }kjk i b̄k fd, x, ogr-
rukoka oʰ dkj.k VWrh jgrh gʰ vf/dkʰk ty dks ifjogu djusea euy nkc dk dkbz
vFkz ugha gʰ vf/drj i kʰka dh vko'; drk ok'i kʰl tʰur f[kpko l s i jh gks tkrh
gʰ

11-3-2-2 ok'i kʰl tʰu f[kpko

i kʰ.k;ka dh Hkfr i kʰka ea i fʰj l p.j.k rak ugha gkrk bl oʰ dktm] tkbye oʰ eke; e
l sty dk Åijh cgko i ;kʰr mPp nj l } yxHx 15 ehVj ifr ?kʰs rd gks l drk
gʰ ;g xfr oʰ l sgkrh gʰ ;g , d i phnk l oky vkt rd l oky gh cuk gʰ k gʰ
i kʰs oʰ }kjk i kuh Åij dh vʰj ^/oʰyk* tkrk gʰ ;k fi 0j Åij l s [khpok tkrk gʰ
vf/drj 'kʰs/drʰ l ger gʰ fd i kʰka }kjk i kuh eʰ; r% [khpok tkrk gʰ vʰj bl dh
l pkyu 'kʰDr i fʰk;ka ea ok'i kʰl tʰu dh ifø;k dk ifj.kke gʰ bl sty ifjogu dk
l a atu&ruko ok'i kʰl tʰu f[kpko ekWy oʰ : i ea i l r r fd;k tkrk gʰ i jarqbl
ok'i kʰl tʰu f[kpko dks dks tʰur dj jgk gʰ

i kʰka ea ty vLFk; h gʰ izdk'k&l a yʰk.k , oa of ¼ oʰ fy, i fʰk;ka ea i gʰ us okys
i kuh dk , d ifr'kr l s Hkh de iz ks fd;k tkrk gʰ i kuh dh vf/drj ek=k i fʰk;ka
l s ja/z }kjk mMh nh tkrh gʰ ty dh ;gh {kfr ok'i kʰl tʰu dgykrh gʰ

vki usfi Nyh d{kʰvka ea ok'i kʰl tʰu dk vè; ;u , d LoLFk i kni dks i kʰ/hfFku
oʰ v m j [kdj vʰj ml oʰ v m j dh l rg ij ty dh l v e cmka dk voyksdu
djoʰ fd;k gkskA vki i l kh l s i kuh dh bl deh dh ifø;k dks dks KYVDy kʰbM
i s j }kjk dj l drs gʰ ft l dk ja i kuh vo'kʰs'kr djus ij cny tkrk gʰ

11-4 ok'i kʰl tʰu (Vh i fʰjku)

ok'i kʰl tʰu] i kʰka }kjk ty dk ok'i oʰ : i ea i fʰjorʰ rFk bl l s mRi l u {kfr gʰ
eʰ; r% ;g i fʰk;ka ea i k, tkus okys ja'ka l sgkrk gʰ ok'i kʰl tʰu ea i kuh dk ok'i
cudj mMeus oʰ vykok vkt l htu , oa dkc ŷ mkbvkt l kbM dk vknku&inku Hkh
i fʰk;ka ea Nks/s fNnka ft l ga ja/z dgrs gʰ oʰ }kjk gkrk gʰ l keku; r% ;s ja/z fnu ea [kys
jgrs gʰ vʰj jkr ea cm gks tkrk gʰ ja/z dk cm gks vʰj [kys j {kd dks'kd kvka oʰ
Li Qhr (Vjxj) ea cnyko l s gkrk gʰ i R; d j {kd dks'kd dh vkrfjd fHkʰk
ja'fNnz dh rji 0 dki Qh eks/h , oarU; rki wʰz gkrh gʰ ja/z dks ?kʰs nks j {kd dks'kd kvka
ea tc Li Qhr nkc c<Fk gʰ rks i ryh ckgjh fHkʰk; k; ckgj dh vʰj mHkjr h gʰ vʰj
v m : uh fHkʰk dks v/pmkdkj l Fkfr ea vkus dks et c ij djrh gʰ ja'z fNnz oʰ [kys

I cfl Mjh
dks' kdk

j {kd} kj
dks' kdk



fp-k 11-8 j {kd} kdk ja'z oel l fKk

ea j {kd} dks' kdk dh fHkfÜk; ka ea mi fLFkr l w(e l wkkHk (ekbØksi Ucfjy) Hkh l gk; rk djrk gß l syvyst l w(e l wkkHk dk vfHkfoll; kl vjh; Øe l s gkrk gSu fd vupß; l Øe l } tks ja'fNnz dks vkl kuh l s [kksyrk gß i kuh dh deh gksus ij tc j {kd} dks' kdk dh Li Öfr l ekr gkrh gß (; k ty ruko [kRe gkrk gß] rks rÜ; vkrfjd fHkfÜk; k; i q% viuh eny fLFkr ea tkrh gß rc j {kd} dks' kdk; ; <hyh i M+ tkrh gß vksj ja'z fNnz cm gks tkrß gß l kekl; rkj ij , d i "B/kjh (ik; %f} chti=h) i Ükh oel fupyh vksj vf/d l ð; k ea ja'z gkrß gß tcf d , d

fj i k'ohz (ik; % , d chti=h) i Ükh ea ja'ka dh l ð; k nksakarji Q yxHkx cjkj gkrh gß

ok"i k&l tzu dbzckgjh dkjdka tS sfd rki] idk'k] vknzk , oaok; qdh xfr l s i Hkkfor gkrk gß ok"i k&l tzu dks i Hkkfor djus okys vl; ikni dkjd tS sfd ja'ka dh l ð; k , oaforj.k] [kys ja'ka dk ifr'kr] i kS'ka ea i kuh dh mi fLFkr rFkk forku jpuk vkfn gß

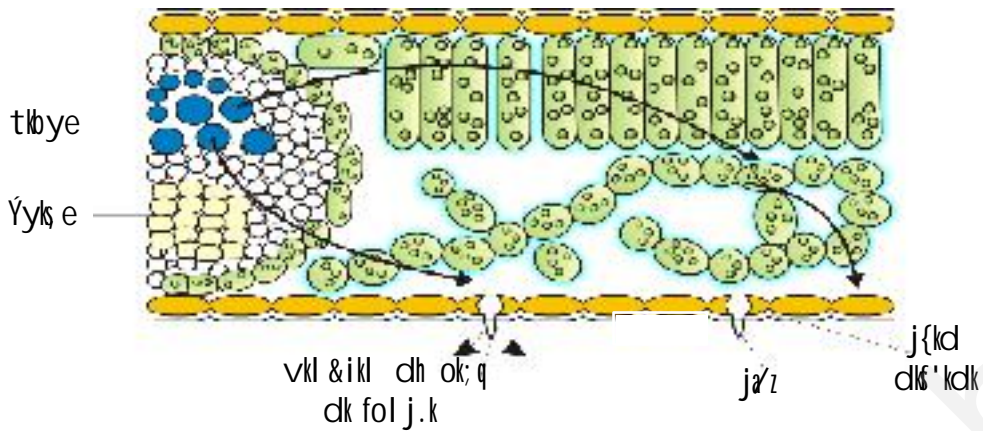
tkbye jl dk ok"i k&l ftz : i l s Åij p<uk eð; : i l s i kuh oel fuEu Hkk&rd xqkka ij fuHkj djrk g%

l kl atu & ty oel v.kq/ka oel chp vkil h vkd"Kz k
vkl atu & ty v.kq/ka dk /ph; l rg dh vksj vkd"Kz k (tS sfd okfgdh; rRoka dh l rg)

i "B ruko & i kuh oel v.kqdk nØ voLFkk eaxS h; voLFkk dh vi s k , d nß js l svf/d vkdf"Kz gksika

i kuh dh ; s fof'k"Vrk; j mls mPp rÜ; l keF; l inku djrh gß tS s , d oel'kdkRo f[kpko 'kDr l s ifrjks/ dh {kerk rFkk mPp oel'kdkRo vFkkz~fd l h iryh ufydk ea p<us dh {kerk i kS'ka ea oel'kdkRo dks y?kq; kl okys okfgdh;] rRo tS s V&hM , oa okfgdk rRo l s Hkh l gk; rk feyrh gß

idk'k&l áy'sk.k i fØ; k oel fy, ty dh vko'; drk gkrh gß tkbye okfgdk; i i kuh dks t: jr oel vuq kj tM+l s i Ükh dh f'kjkvkard igpkrh gß ysdu og dks l h 'kDr gß tks i kuh oel v.kq/ka dks i Ükh oel enrd rd t: jr oel vuq kj [khp ykrh gß tS s gh ok"i k&l tzu gkrk gß vksj pfid i kuh dh iryh ijr dks'kdkvka oel Åij yxkrkj gkrh gß vr% ; g tkbye l s i Ükh rd i kuh oel v.kq/ka dks [khp us ea ifri Öfyr gkrk gß v/kja'h xfgdk rFkk varjk dks'kdk txr oel ctk; okrkoj.k ea tyok"i dh l k&rk de gkrh gß vr% i kuh ikl dh gok eafol fjr gks tkrk gß vksj ; g f[kpko i ßk djrk gß (fp-k 11-9) A ekiu l s Li "V gkrk gß sfd ok"i k&l tzu } jkj i ßk fd; k x; k cy i kuh dks tkbye oel vkdkj oel Lrñk ea 130 ehVj dh Åpkbz rd [khp us oel fy, i ; k&r gkrk gß



fpɛ 11-9 ty , oa vk; u vo' kʰk.k , oa tMka ea pɣu oɔ fl ɔyɣLVd , oa , i kʰyɣLVd i Fk

11-4-1 ok'i kʰl tɔ , oa i d k' k & l ɔyʰk.k , d l e > kʰk

ok'i kʰl tɔ ea , d l s vf/d mnɛs ; fufgr gkrs gɔ tks fd fuEufyf [kr g%

- i kʰka ea vo' kʰk.k , oa i fjoɣu oɔ fy , ok'i kʰl tɔ f [kɔko i ɛk djuk
- i d k' k & l ɔyʰk.k fØ ; k oɔ fy , i kuh dk l ɔk j.k
- enk l s i kʰl [kfutka dk i kʰka oɔ l Hkh vɔka rd i fjoɣu djuk
- i ɔkh oɔ l rg dks ok' i hdj.k }kjk 10 l s 15 fMxh rd B M k j [kuk
- dks' kdk vɔ dks l i hr j [krs gɣ i kni ka oɔ v k d j , oa cuko v dks fu ; ɛkr j [kuk

, d l fØ ; i d k' k & l ɔyʰk.k ea jr i kʰs dks ty dh vR ; r gh vko' ; drk jgrh gɔ i d k' k & l ɔyʰk.k ea miyC / ty l hekdkjh gks l drk gɔ ft l s ok' i kʰl tɔ v kʰ i Hkkfor djrk gɔ o' kʰzuka ea vknɔk bl h ty & pØ oɔ dkj.k okro j.k ea r Fk i q% enk ea n s [kh x b z gɔ

l h & 4 (c₄) i d k' k & l ɔyʰk.k rɛk dk Øe & fodkl] l ɔkor% dkcɔ & Mkbv k l kbM dh miyC / rk dks c< kus r Fk i kuh dh {kfr dks de djus dh j.kuhfr oɔ rgr gɣv k gɔ c₄ i kʰs } c₃ dh rɣyuk ea dkcɔ ('koɔ jk cukus ea) dks l q l Fk j cukus ea nksɔqk l {ke gkrs gɔ c₄ i kʰs } c₃ i kʰs l s l eku ek=kk oɔ dkcɔ Mkbv k l kbM oɔ ; k s x dh j . k g r q v k / h ek=kk ea ty dks [krs (de djrk) gɔ

11-5 [kfu t i kʰk d dk mnɔg.k , oa l p j . k

i kʰs viuh dkcɔ , oa vf / drj v k l h tu dh vko' ; d ek=kk okro j.k ea miyC / dkcɔ Mkbv k l kbM l s i kʰl djrs gɔ gkykfd mudh 'kʰk i kʰk.k dh vko' ; drk gkbM kstu g r q enk l s i kʰl [kfutka r Fk ty l s i jh gkrs gɔ

11-5-1 [kfu t v k ; u k a dk mnɔg.k

ty oɔ l eku] l Hkh [kfu t rRo tMka }kjk fuf"Ø ; rk fof / }kjk vo' kʰk'kr ughafd , tk l drɔ bl oɔ fy , nks dkjd ftEen j gkrs gɔ (i) enk oɔ v m j [kfu tka dk vkof'kr : i ea jguk gɔ tks d dks' kdk fHk fuk dks i k j ugha dj l drs gɔ v kʰ (ii)

enk oð varxí [kfutka dh lkmrk] tMka oð vñj dh lkmrk l s ik; % de gkrh gð bl hfý, vf/drj [kfut tMka ea cá Ropk dh dks'kdkvka oð dks'kdk nð; ea lfø; vo'kkk.k oð }kjk iðsk djrs gð blea ,Vhíh oð : i ea Átkz dh vko'; drk gkrh gð vk; u dk lfø; mnæg.k ey eaty foHko ið.krk oð fy, vákr% ftEenkj gkrk gð vr% ijl j.k }kjk ty oð iðsk oð fy, Hkh oðN vk; u cá Ropk dks'kdk eafuf"ø; : i l s Hkh l pyu djrs gð ey jke dks'kdk dh f>Yyh eaik, tkusokysfof'k"V ikv/hu] vk; u dksenk l s lfø; i á }kjk cá Ropk dh dks'kdkvka oð dks'kdk nð; eaHkstrh gð l Hkh dks'kdkvka dh Hkkár var%Ropk ea Hkh dks'kdk dh f>Yyh eadbz ifjogu ikv/hu ik, tkrsgð osoðN foys dksf>Yyh oð vkj&ikj vkus tkus nrs gð yfdu vU; dks ugha var%Ropk dh dks'kdkvka oð ifjogu ikv/hu fu; ak.k fcmgkrs gð tgl; i k s'foys dh ek-kk , oaiðkj dks tkbye ea igpkrsgð rFkk l ek; kstr djrs gð ; gk; è; ku nafd ey var%Ropk ea l psjr dh iVvh gkus oð dkj.k , d fn'kk ea gh lfø; ifjogu djus dh {kerk gkrh gð

11-5-2 [kfut vk; Ukkadk LFkkukarj . k

tc vk; l k lfø; ; k fuf"ø; mnæg.k l s ; k fi Qj nkska dh lfEefJr ifø; k oð ekè; e l s tkbye ea igp tkrsgð rc mudk ifjogu ikni rus, oal Hkh Hkkxka rd ok"i kkl tzu iðkg oð ekè; e l s gkrk gð

[kfut rRoka oð fy, eð; oðM i k s'ka dh of¼ dk {sk gkrk g s t s' sfd f'k [kxzx , oai k'oz foHkkT; ksd] r#.k&i fùk; kj fodkl 'khy i Qy] i Qy , oacht rFkk HkkMkj.k vaxA [kfut vk; Ukkadk fol tzu eghu f'kjkvka oð vñre Nkj ij dks'kdkvka oð }kjk fol j.k , oal lfø; mnæg.k l s gkrk gð

[kfut vk; uka dks tYnh gh i q%l ækfvR fo'kšk : i l s igkus tjkoLFkk okys Hkkx l sfd; k tkrk gð i gkuh rFkk ejrh gðz i fùk; k; vius Hkhrj oð [kfutka dks ubz i fùk; ka eafu; kžrr dj nrh gð Bhd bl h iðkj l s i fùk; k; i .kà krh o{k l s >Mæs oð igys vius [kfut rRoka dks vU; Hkkxka dks nsnrh gð tks inkFkz ik; % Rofjr l p k fjr ; k l ækfvR gkrsgð os gð i QM i Qkj l] l Y i Qj] ukbVrstu rFkk i k s' s' k; ea oðN rRo tksfd l p jukRed dkjd gkrsgð t s' sfd oðY l ; e] blga i q%l ækfvR ugha fd; k tkrk gð tkbye l ko dk fo'yšk.k ; g n'kkžk g sfd oðN ukbVrstu vdkčud vk; Ukkaoð : i earFkk bl dk vR; f/d Hkkx dkačud , feuks vEy rFkk l ač/r dkjdka oð : i ea <k tkrsgð bl h rjg i QM i Qkj l , oal Y i Qj Hkh dkačud ; k s x dka oð : i ea igp k , tkrsgð bl oð vykok tkbye , oayk s e oð chp Hkh inkFkka dk vknku&inku gkrk gð vr% ge Li"V : i l svñj ugha dj i k r sfd tkbye oðoy vdkčud i k s k dka dk ifjogu djrk g s r Fkk Ýy k s e dkačud inkFkka dk] t s k fd igys fo'okl fd; k tkrk FkA

11-6 Ýy k s e ifjogu% mnæe l s oðM dh vkj iðkg

vk gj eð; r% 'koðkj okfgdk Ård oð Ýy k s e }kjk mnæe l s oðM dh vkj ifjogfur fd; k tkrk gð l keU; r% l k s dks i k s' s' dk og fg l l k ekuk tkrk g s t g k ; vk gj l á y s' kr gkrk g s t s' sfd i fùk; k; vk s oðM (fl ad)A ; g og Hkkx g s t g k ;

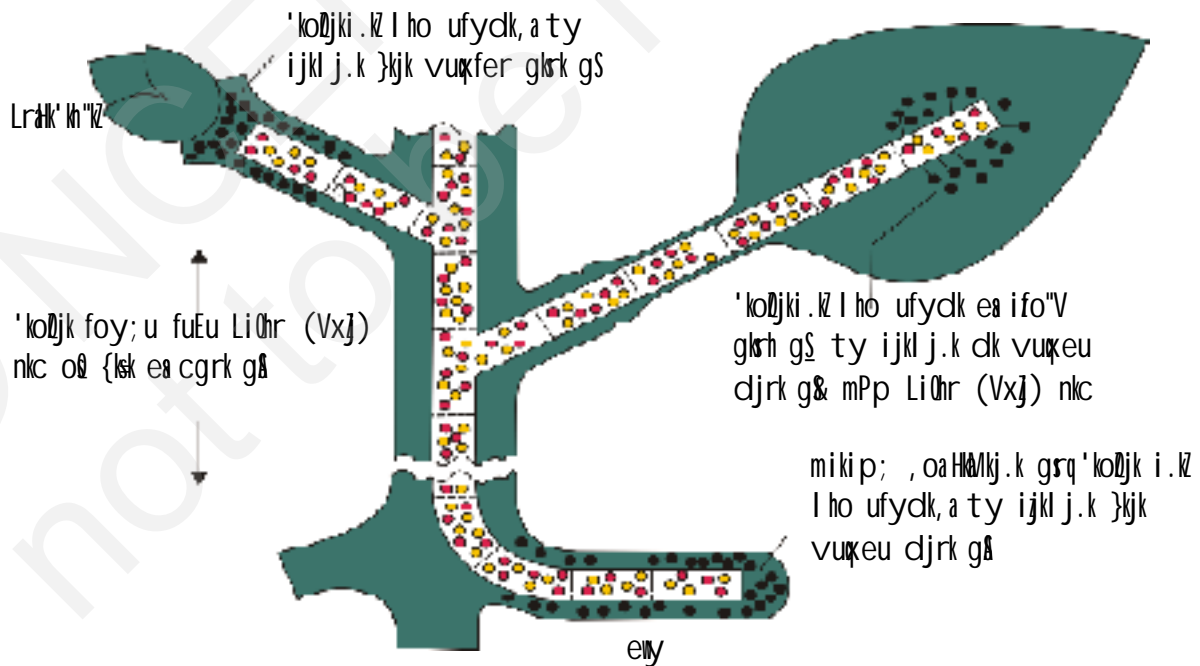
Hkkstu, d=k gkrk gð yfdu; g lkr vks oðm viuh Hkkredk, j eks e, oat: jr oð vud kj cny Hkh l drsgð tMkaea, d=k dh xbz 'koðjk ol r oð vkjðk eavkgkj dk lkr cu tkrh gð bl le; iknika ij ubz dfy; k; oðm dk dke djrh gð izlk'k&l áysk.k lk/uka dh of¼, oafjo/ú gsrqÁtkz dh vko'; drk gkrh gð pðid lkr vks oðm dk lca/ ifjorú'khy gð vr%xf r dh fn'kk Áij; k uhps dh vkj vFkkz~nkrji Ok gks l drh gð tkbye oð l kFk; g foijhr gð tgk; xfr l nð uhps l sÁij dh vkj, d fn'kk ea gkrh gð; |fi| ok'i k&l tzu dk ty, drji Ok izkg djrk gðfoðr qÝyks e oð jl ea Hkkstu dk ifjogu l Hkh fn'kkvkaea gks l drk gð tc rd lkr vks oðm 'koðjk dk mi; kx l azg.k rFkk viknu ea l {ke gla

Ýyks e jl ea eð; r% ty vks 'koðjk gkrk gð yfdu vl; 'koðjk, j gkekzu rFkk, ehuks vEy vkfn Hkh Ýyks e oð }kjk LFkkukarfjr gkrk gð

11-6-1 nkc izkg; k l kefgd izkg ifjdYi uk

lkr l soðm dh vks 'koðjk oð LFkkukarj.k oð fy, vko'; d LohÑr fØ; kfof/ dks nkc izkg ifjdYi uk dgrsgð (fp=k 11-10) A ts sgh lkr ij Xymkst (izlk'k&l áysk.k }kjk) l áys'kr gkrk gð 'koðjk (, d Mkl bðjkbM) ea cny fn; k tkrk gð bl oð ckn; g 'koðjk l [kh dks' kdkvka earFkk ckn ea l fØ; ifjogu }kjk thor Ýyks e pkyu ufydk dks' kdk ea l pðjr gkrh gð lkr ij ynku (yksMak) dh; g ifØ; k Ýyks e ea, d vfri jkl kjh voLFkk dks iðk dj nrk gð

fudVorth tkbye ty ijkl j.k oð }kjk Ýyks e ea pyk tkrk gð tc ijkl j.kh nkc Ýyks e ea curk gð rks Ýyks e jl fuEu nkc oð {ksk ea pyk tkrk gð oðm ij ijkl j.kh nco fuf'pr: i l s?kvuk pkfg, A, d ckj fi Oj Ýyks e jl l s'koðjk dks



fp=k 11-10 LFkkukarj.k dh ifØ; k dh vkjðk; iLrðr

ckgj djusrFkk ml dks'kdk rd tglk 'koDjk Åtkj LVkpZ ; k l syykst eacnyrh gš
ys tkusoð fy, l fØ; ifjogu vko'; d gkrk gð tš sgh 'koDjk, i gVrh gð ijkl j.kh
nkc ?kVrk gš vks ty Ýyke l scckj pyk tkrk gð

l kjk k ea Ýyke 'koDjkvka dk ifjogu l kr l s'kq gkrk gš tglk 'koDjkvka dks
, d pkykuhufydk ea (l fØ; ifjogu }kjk) yknk tkrk gð Ýyke dh ; g ynku
, d ty foHko ið.krk dh 'kq vkr djrk gš tksfd Ýyke ea l kefgd iðkg dks
l øe cukrk gð

Ýyke Ård l ho V;æ dks'kdkvka (pkykuh ufydk dks'kdk) l scuk gkrk gš
tksyæh Lrðk dh jpuk djrk gš ft l oð väre fhkfk ea fNnz gkrk gš ft l ga pkyuh
i Vfvdk dgrsgð dks'kdk nð; h rarq pkyuh i Vfvdk oð fNnzea iðs'kr gkrh gš rFkk
l rr rarq cukrh gð tš sgh nðLFkrd nco Ýyke oð pkyuh ufydk ea c<fk gš
nkc iðkg 'kq gsk tkrk gš rFkk nð (jl) Ýyke l spyu djrk gð bl chp oð
ij vkus okys 'koDjk dks Ýyke l s l fØ; ; i l s rFkk 'koDjk oð ; i ea ckj fd ; k
tkrk gð Ýyke ea foys dh {kfr l s, d mpp ty foHko iðk gkrk gš vks i kuh
væ ea tkbye oð ikl vk tkrk gð

, d l k/kj.k iz kx] ft l s fMfya dgk tkrk gš ml dk iz kx Hkkstu oð ifjogu
ea gks okys Ård dks igpkuusea fd ; k x; ka ið+oð Lrðk ij Nky dk , d oy;
(fjæ) Ýyke rd l ko/kuhi oð gVk; k tkrk gð uhps dh rji o vc Hkkstu dh xfr
u gks oð dkj.k oy; oð Åij dh Nky oð N l rkg oð ckn i ovy tkrh gð ; g l k/
kj.k iz kx n'kkrk gšfd Ýyke Ård Hkkstu oð LFkkur j.k oð fy, mlkjnk; h gš rFkk
ifjogu dh fn'kk , d fn'kh; gš vFkkz-ey dh rji oð bl iz kx dks vkl kuh l sfd ; k
tk l drk gð

I kjk k

i s' s foHku vdkcud rðla (vk; u) , oa yo.æa dks vius vkl & ikl oð i; kbj.k l s fo'kldj] golj
i kuh rFkk enk l s yrs gð bu i kldla dh xfr i; kbj.k l s i s'æa rFkk , d i s'æ dh dks'kdk l s nð j s
i s'æ dh dks'kdk rd] vko'; d : i l s f>Yyh oð vkj&ikj ifjogu oð }kjk gkrh gð dks'kdk f>Yyh
oð vkj&ikj ifjogu] fol j.k] l q k; ifjogu ; k l fØ; ifjogu oð }kjk gkrk gð eyy oð }kjk vo'kkr
[krut , oa i kuh dks tkbye oð }kjk l pkr fd ; k tkrk gš rFkk i fuk; æa oð }kjk l æys'kr dlcud inkr
i kni oð foHku Hkxla ea Ýyke oð }kjk ifjogu fd, tkrsgð

fuf'Ø; ifjogu (fol j.k] ijkl j.k) rFkk l fØ; l pj.k] thola ea i kldla dks f>fydkvlo oð vkj&ikj
l pkr djus oð nkrjhoð gð fuf'Ø; ifjogu ea fol j.k oð }kjk f>Yyh oð vkj&ikj fcuk Åtkz 0; ;
fd, i kldla dh xfr l krk ið.krk oð vuð kj gkrh gð inkræ dk fol j.k vdkj rFkk ml oð ty ea ; k
dlcud foys u ea ?kyu'khyrk ij fuHj djrk gð ijkl j.k , d fo'kkr iðkj dk fol j.k gš ft l ea ty
v/æ kjx E; f>Yyh oð ikj tkrk gš rFkk nkc , oa l krk ið.krk ij fuHj djrk gð l fØ; ifjogu ea, Vh
dh Åtkz v.ævæ dks l krk ið.krk oð fo: ¼ f>Yyh oð ikj ið djrh gð ty foHko i kuh dh l fkr
Åtkz gš tks ty dh xfr ea l gk; rk djrh gð ; g foys vkr'kr rFkk nkc vkr'kr }kjk
fu/æjr gkrh gð dks'kdk dk ; g 0; ogkj vkl & ikl oð foys ula ij fuHj djrk gð ; fn dks'kdk oð
vkl & ikl dk foy; u vfrijkl kjh gš rts thonð; oð pr gsk tkrk gð chtla , oa 'kq dks'kdk }kjk ty

dk vo'Wsk.k fo'Wsk izdkj oð fol j.k l s glrk gSft l s var%'Wsk.k dgrs gð

mPp ik/ka ea oðfgdk rak tboye vlg Ýyls e LFKularj.k oð fy, mUkjnk; h glrk gð ty [krut rFk ikSkd ikni 'kjhj oð vnj oðoy fol j.k }kjk l pkrj ughags l drsgð bl fy, ; sl ketigd izkg rak }kjk l pkrj glrs gð rRokadk l ketigd : i ea, d txg l snl jh txg ifjogu nksfcnd/ka oð chp nlc oð varj oð dkj.k glrk gð

ew jkela }kjk vo'Wsk'kr ty tMladh xgjkZeanksvyx&vyx iFka l stkrk gð mnkgj.WFZ& , ikyLV rFk fl elyKVA enk l s fofo/ vk; u rFk ty rusdh de ÅpkZ rd ewnkc l s ifjofgr fd, tkrsgð ok'iRl tZ f[lpkoemly ikuh oð ifjogu dk l ok/d LohNir : i gð ok'i oð : i ea ikni oð foFHku Hkxla }kjk ikuh dk {k; ja'ka }kjk glrk gð rki} izdk'kj vknZkj ok; qdh xfr ok'iRl tZ dh nj dls iHkfor djrh gð ikuh dh vf/d ek-ek ikni dh iFk; ka oð 'kr'iz l s fcmq ko oð }kjk fudkyk tkrk gð iknile ea Hkstu e[; r%'koDjk dk ifjogu mnxe l soeM rd oð fy, Ýyls e ftEenskj glrk gð Ýyls e ea LFKularj.k f)fn'kk; h glrk gS rFk mnxe rFk oðM l ea' ofoe; i wZ glrs gð Ýyls e ea LFKularj.k nlc&izkg ifjdYiuk oð }kjk of. kr fd; k x; k gð

vH; kl

- 1- fol j.k dh nj dls dks l s dkjd iHkfor djrs gð
- 2- iKthul D; k gS fol j.k ea ; s D; k Hkredk fuHkrs gð
- 3- iknile ea l fØ; ifjogu oð nlgku iks/ku ia oð }kjk D; k Hkredk fuHkZ tkrh gð 0; k[; k djð
- 4- 'kq ty dk l c l s vf/d ty foHko D; ka glrk gð o. kZ djð
- 5- fuEu oð chp varj Li"V dj&&
 (d) fol j.k , oa i jkl j.k ([k] ik'iRl tZ , oa ok'i hdj.k
 (x) i jkl kjh nlc rFk i jkl kjh foHko (?k) fol j.k , oa var%'Wsk.k
 (p) iknile ea ikuh oð vo'Wsk.k dk , ikyLV vlg fl elyKVA iFk
 (N) fcmq ko , oa ifjogu (vfHkxeu)
- 6- ty foHko dk l {kr o. kZ djð dks l s dkjd bl s iHkfor djrs gð ty] foHko] foys foHko rFk nlc foHko oð vki l h l ea'ka dh 0; k[; k djð
- 7- rc D; k glrk gS tc 'kq ty ; k foys u ij i; kZj.k oð nlc dh vi\$kk vf/d nlc ykxwfd; k tkrk gð
- 8- (d) j\$Widr fp-k dh l gk; rk l s iks/ka thonð; oðpu dh fofo/ dk o. kZ mnkgj.k nsdj djð ([k] ; fn iks/s dh dks'kdk dls mPp ty foHko okys foys u ea j[k tk, rls D; k glrk
- 9- ikni ea ty , oa [krut oð vo'Wsk.k ea ekOjib tyh; (dodew l gthou) l ea' fdrus l gk; d gð
- 10- ikni ea ty ifjogu grq ewnkc D; k Hkredk fuHkkrk gð
- 11- iknile ea ty ifjogu grq ok'iRl tZ f[lpkoemly dh 0; k[; k djð ok'iRl tZ fØ; k dls dks l k dkjd iHkfor djrk gð iknile oð fy, dks mi; ksh gð
- 12- iknile ea tboye j l kjkg.k oð fy, ftEenskj dkj dka dh 0; k[; k djð
- 13- iknile ea [krut oð vo'Wsk.k oð nlgku var'Ropk dh vko'; d Hkredk D; k glrk gð
- 14- tboye ifjogu , dfn'kh; rFk Ýyls e ifjogu f)fn'kh; glrk gS 0; k[; k djð
- 15- iknile ea 'koDjk oð LFKularj.k oð nlc izkg ifjdYiuk dh 0; k[; k dhft, A
- 16- ik'iRl tZ oð nlgku j{kd}kj dks'kdk [kyus , oa cm gks oð D; k dkj.k gðs