Specification Grid-2065

Time: 2.15 hours. Full Marks: 75

Subject: Science Pass Marks: 24

S.N.	Topics	No. of question	No. of Sub question	Marks	Abilities			Remarks	Total Marks
					K 20%	U 30%	HA 50%		
1.	Force+Energy	1	a b	7.5	6	9	15	Physics 4 question	30
2.	Pressure	1	a b	7.5					
3.	Heat+Light	1	a b	7.5					
4.	Current Electricity & Magnetism	1	a b	7.5					
5.	Classification of element+chemical Reaction + Hydrocarbon and its compounds + Gases	1	a b	7.5	3	4.5	7.5	Chemistry 2 question	15
6.	Metals + Materials used in daily life + Acid, Base and Salt	1	a b	7.5					
7.	Virus + Stimuli and reactions + Blood circulatory System	1	a b	7.5	4.5	7	11	Biology 3 questions	22.5
8.	Cell division+Asexual & Sexual Reproduction+ Reproduction by spores	1	a b	7.5					
9.	Classification of Plants and Animals+ Ecosystem+ Genetics	1	a b	7.5					
10.	History of Earth + Atmosphere+ Universe	1	a b	7.5	1.5	2.5	3.5	Geo+ Astronomy 1 question	7.5
	Total	10	20	75	15	23	37	10	75

Note: There are ten questions, each carrying 7.5 marks. Each question has two sub-questions. Each sub-question has the weightage

K = Knowledge

U = Understanding

HA = Higher abilities (Application, synthesis, analysis and evaluation)

clgjfo{lj1fg (Compulsory Science)

Set - 1

;do M @ 306f !% ldg]6	k0ff{Í\s M &%
pTtL0ff{Í\s M @$

ef}lts lj1fg (Physics)

!= -s_ u?Tj an eg]sf] s] xf]< o;sf] lbzf stflt/ xG5 < olb k[YjLsf] lk08 6 × 10^{24} kg / cw{of; 6380 km 5 eg] k[YjLsf] ;txaf6 500 km dfly /x]sf] 200 kg lk08 ePsf] j:tsf] tf}n slt xG5 < 1+0.5+3 = 4.5

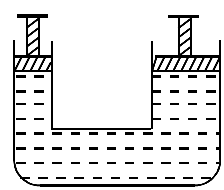
What is gravity? In which direction does it act? if the mass and radius of the earth are 6 × 10^{24} kg and 6380 km respectively. What is the weight of the body of mass 200 kg at height 500 km above the earth's surface?

-v_ ydf{olSno/ km\bhg k|ltlj|of eg]sf] s] xf]< g]kfn ;/sf/n] uf]a/ Uof; KnfG6 lgdf{0fsf nflu cgbfg lb0/x]sf] 5 . o;n] pm{hf{ ;ª\s6 GoØg ug{ s;/L dbt ub{5 < sg}bO{ cf]6f ts{lbO{kli6 ug{xf]; \. 1+2 = 3

What is thermonuclear fusion reaction? Government of Nepal is giving subsidy to establish Bio-gas plant. How does it minimize the energy crisis? Give any two openion to prove it.

@= -s_ rfknfO{ c;/ kfg]{ bO{ cf]6f tTTjx¿sf] gfd n]Vgxf]; \. tnsf] lrq x]/L ;f]wPsf k|Zgx¿sf] pTt/ n]Vgxf]; \.

What are two factors that affect the pressure given by an object? Study the given figure and answer the following: 1+0.5+1+1 = 3.5



(i) lrqdf sg l;b\wfGt b]vf0Psf]5 <

Which law is shown in the diagram?

(ii) pSt l;b\wfGt n]Vgxf]; \.

State the law.

(iii) o; l;b\wfGtdf cfwfl/t c¿ sg}bO{ cf]6f pks/0fx¿sf] gfd n]Vgxf]; \.

Name any two devices based on this law.

-v_ sg} A eGg] j:tsf] ;fk]lfs 3gTj 5 5 eGgsf] cy{ s] xf]< Knjgsf] lgod cfls{ldl8hsf] l;b\wfGteGbf s;/L leGg 5 < sg} Ps sf/0f lbgxf]; \. Pp6f 20m×10m×5m cfotg ePsf] l6gsf] 6\bfª\sLdf cfwf kfgL xF]F kfgLn] lkF]wdf lbg] rfk lgsfNgxf]; \. 1+1+2 = 4

The relative density of an object A is 5. What does it mean? How is law of floatation different from Archimedes's principle. Give one reason. A metallic tank of dimension 20m×10m×5m is half filled with water? Find the pressure exerted by the water on its bottom.

#= -s_ 1 Sofnf] tfkzlStsf] kl/efiff n]Vgxf];\. /]kh]6/df /flvg] sf]sfsf]hf, lao/x¿sf] af]tndf s]xL 7fpFvfnL /flvPsf] x¢5, lsg < s}kbfy{sf] 5 kg lk08nfO{10°C tfkj]d jb]lw ug{ 2.1×10^5 J tfkzlSt cfjZos k5{eg] ;f] kbfy{sf]lj|zi6 tfk wf/0f lfdtf slt xf]hf < 1+1.5+2 = 4.5

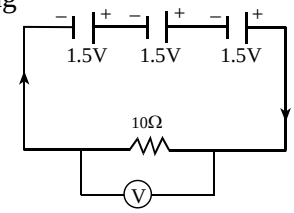
Define one calorie heat. There is some empty space in the bottles of Coca-Cola, beer etc. which are kept in refrigerator, why? If 2.1×10^5 J heat energy is required to increase temperature of 5 kg mass of a substance by 10°C. What will be the specific heat capacity of the substance?

-v_ n]; sf] ;fdYo{sf] P;=cfO{ Psf0 s] xf] < cfWfsf] s}g efun] cfWfsf] n]; sf] s]bls/0f b/Lnf0{36a9 ug{ sfd u5{< cfWfsf] n]; sf] s]bls/0f b/L 36fpg g;lsg] sdhf/Lnf0{s;/L ;wfg{;ls¢5 < lrq;lxt n]Vgxf];\. 0.5+0.5+2 = 3

What is SI unit of power of lens. Which part of eye changes the focal length of eye lens? How can we correct the defect of eye in which focal length cannot be decreased? Write with corrected figure.

4. -s_ lbOPsf] lrq c:oog u/L ;fwPsf kZgx¿sf] pTt/ lbgxf];\. 0.5+1.5+1+1 = 4

Study the given figure and answer the following questions:



(i) lbOPsf] ;fnx¿sf] ;dXLs/0f s}g k|sf/sf] xf]<

What type of combination of cell is given?

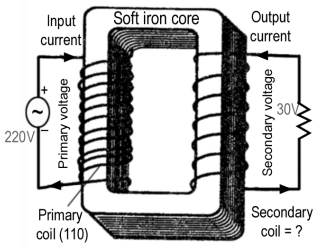
(ii) ef]6fld6/df slt dfg b]vfpnf < lx;fa ug{xf];\.

What will be the value of voltage shown by the voltmeter? Calculate.

(iii) o; h8fgsf] Pp6f a]kmfObf / Pp6f pkof]u tf n]Vgxf];\.

Write one disadvantage and one application of this combination.

-v_ ljb]b't\ r/Dasl/o pkkfbg eg]sf] s] xf] < lbOPsf] 6f]k;kmd{ s}g k|sf/sf] xf] < p/St 6f]k;kmd{df ;fy]8/L km¢sfx¿sf] ;aVof kTtf nufpgxf];\.



What is electromagnetic induction? What type of transformer is given in the diagram? Calculate the number of turns in secondary coil. 1+0.5+2 = 3.5

/;fog lj1fg **(Chemistry)**

%= -s_ clS;hg / Snfl/gdWo]sg a9L ;ljlo tTj xf]< lsg < clS;hgn];f]8od;Fr k|tljlofubf{xg]/f;folgs k|tljlofsf];Gtlnt ;q ;dLs/0f n]vgxf];\.

0.5+1+2 = 3.5

Which one is more reactive between oxygen and fluorine? Why? Write the balanced chemical equation of reaction between oxygen and sodium.

-v_ 0y/sf];/rgfTds ;q / Pp6f pkof]utf klg n]vgxf];\. kfgL;Fr 3Nbf sfafgs cDn agfpg]Uof;sf]kpfu zfnfdf agfpg]lalwsf]lrq agfpgxf];\. 1+1+2 = 4

Write structural formula of ether and one use of it. Draw a well labeled diagram of the laboratory preparation of gas that forms carbonic acid when dissolved in water.

^= -s_ kfoW Pgufsf]6ns lbg]kl5Nnf]efudf sg wft'nkg ul/Psf]xG5 < ;f]wft'/ Snfl/g Uof;sf]larsf]/f;folgs k|tljlofsf];Gtlnt ;q ;dLs/0f n]vgxf];\. ;f]8od sfafgG6 lff/Lo nj0f xf]lsg < 0.5+2+1.5=4

Which metal is used to plate on the back part of mirror to make it bright generally? Write the balanced chemical equation of the reaction between that metal and chlorine gas. Sodium carbonate is basic salt, why?

-v_ l;d]6, afn'jf / kfgLsf]ld>0fnfO{s]elgG5 < ;f]ld>0fsf]hDg]cjlw a9fpgsf] nflu s]ugk5{< sRrf kbfy{/ 3Ng]lfdtfsf cfwf/df ;fag / l86/h]6df km/s n]vgxf];\. 0.5+1+2 = 3.5

What is mixture of sand, cement and water called. How setting time of such mixture is increased? Write the difference between soap and detergent on the basis of raw materials and dissolving capacity.

hLj lj1fg **(Biology)**

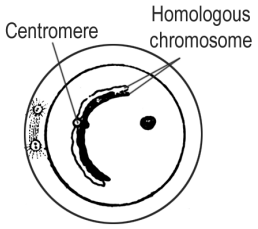
&= -s_ efO/;nfO{lsg ;hLj / lghL{ larsf]>[vnf elgG5 < ;f]af]:kf0gn kn8 dl:tissf]sg efudf kfOG5 < o;n]s]sfo{ubf5 < kmf6f]6bflS;; / kmf6f] 6kHdlar sg}bO{cf6f leGgtf n]vgxf];\. 1+1+0.5+2 = 4.5

Why is virus called the bridge or connecting link of living and non-living beings? In which part of the brain cerebrospinal fluid found? What is its function? Write any two differences between phototaxis and phototropism.

-v_ /Strfk eg]sf] s] xf] < /ftf /Stsf]f / ;]tf /Stsf]flar agfj6 / sfo{sf cfwf/df b'O{cf6f leGgtfx¿ n]vgxf];\. 1+2 = 3

What is blood pressure? Write any two differences between red blood cells and white blood cells on the basis of their structure and function.

*=-s_ ;f06f]sf0g]l;; eg]sf] s] xf] < lrqdf sfg kl/sf/sf] sf]f ljefhg b]vf0Psf] 5 < o;sf] cj:yf klg n]vgxf];\. s:tf vfnsf la?jfx¿nf0{ e]h6]6e k|fkfu];gaf6 k|hgg\ ul/G5 < To;/L k|hgg\ ug{]Ps la?jfsf] gfd n]vgxf];\.



What do you mean by cytokinesis? Which type of cell division is shown in figure? Write its phase too. What types of plants are reproduced by vegetative propagation? Also write the name of a plant that reproduces by this method. 1+0.5+0.5+1+0.5= 3.5

-v_ Rofp vfg lsg ;ts{ xfg h?/L 5 < vfg of]o Rofpsf b'O{ cf6f pbfx/0f n]vgxf];\. plgpF5f] Uofd6f]kmf06 cj:yfsf] lrq agf0{ sfg"g b'O{ efusf] gfds/0f ug{xf];\. 1+1+2 = 4

Why should we be careful while eating the mushroom? Write two examples of edible mushroom. Draw the gametophyte stage of fern plant and label its two parts.

(=-s_ /fof]hf0{ ju{sf/0f u/L o;sf] Pp6f u0f n]vgxf];\. vfb\bb >[vnf eg]sf] s] xf] < sfag"g rj|sf]/]vflrq agfpgxf];\.

Classify lattice with one characteristic. What is food chain? Draw the graphic sketch of carbon cycle1.5+0.5+1.5 = 3.5

-v_ j¥f0fut nlf0f eg]sf] s]xf] < /ftf]kmh kmNg](RR) / ;]tf]kmh kmNg](rr) sf]fpsf lardf klxn]k/;]rg / kl5 :j;]rg u/f0of]. klxnf]/ bf];f] j¥df s:tf] s:tf] /asf kmh xg] sf]fpsf] la?jf lg:sG5g\ / lsg < cfjZos rf6{ tof/ kf/L n]vgxf];\. 1+3 = 4

What is hereditary character? Pea plants with red flower (RR) and white flower (rr) are cross pollinated first then self pollinated. What will be the colour of

flower in first and second generation of that pea plant and why? Write with necessary chart of filial generation.

e"tyf c©tl/lf lj1fg (Geology and Astronomy)

!)= -s_ k[j⊥sf] p⊤klT taf/] hh{ jk⊓gsf] kl/s⊗kgf ;a\lfkdf n]vgxf];\. s5'jf / 3f8fsf] p⊤klTt ePsf] sfnsf] gfd n]vgxf];\. cfhf©g tx ljgfz x©gfsf s©g}bO{ cf©f sf/0fx¿ n]vgxf];\. 1.5+1+2 = 4.5

Explain in brief about the origin of the earth on the basis of George Woffen hypothesis. Name the periods in which tortoise and horse evolved. Write any two reasons for the depletion of ozone layer.

-v_ sfnf] l5b| eg]sf] s] xf] < tf/f d08n / tf/fk⁄hlar s©g}bO{ cf©f le©gtf n]vgxf];\. 1+2 = 3

What is black whole? Write any two differences between constellation and galaxy.

✹

p⊤t/ kl:tsf k/⊥lf0f sl~hsf (Marking Scheme)

Set 1

!= -s_ s©g}uk tyf pku⁄kn] s©g}j:thf0{ cfk⊓gf] s]⊓b|t/ cfsif©f ug{ annf0{ u?⊤j an elg©5 . 1

u?⊤j ansf] lb;f k[j⊥sf] s]⊓b|t/ x©5 . 0.5

oxfF k[j⊥sf] lk08 (M) = 6×10^{24} kg

cw{of; (R) = 6380 km

j:t⁄sf] lk08 (m) = 200 kg

j:t⁄sf] prf0 (h) = 500 km

G = 6.67×10^{-11} Nm^2/kg^2

tf©n (w) = ?

R + h = 6380 + 500 km

= 6880 km

ca, ;⁄cg';f/, tf©n (w) = $\frac{G\,Mm}{(R+h)^2}$ cg';f/ 0.5

$$= \frac{6.67 \times 10^{-11}\ Nm^2/kg^2 \times 6 \times 10^{24}\ kg \times 200\ kg}{(6880\ km)^2}$$

$$= \frac{6.67 \times 6 \times 200}{(6.88 \times 10^6)^2} \times 10^{-11\ +24}\ N$$ 0.5

$$= \frac{6.67 \times 6 \times 200}{6.88 \times 6.88} \times 10^{13-12}\ N$$

$$= \frac{8004}{47.3344} \times 10\ N$$ 0.5

$= 169.09 \times 10$ N

$= 1690.9$ N 0.5

-gf6\ Psf0 gn]vdf 0.5 s6fpg]

-v_ b0{cf6f xn'sf GolSno;x¿ tfk / rfksf] sf/0fn] ;+s'lrt eO{ uxF GolSno; agf0{zlSt lg:sg]k|lj|ofnf0{ydf{ GolSno/ km\hg k|tlj|of elgG5 . 1

(i) uf{a/ Uof; Knf G6 lgdf{0f u/L pkofu ubf{ cgljs/0fLo pmhf{sf]vkt ug{[b/ 36\g uO{phf{;ª\s6 Gof\g xG5 . 1

(ii) ufj / Uof; KnfG6af6 v]/ uO/x]sf j:t'x¿af6 bL3{sfnLg ¿kdf ;:tf]phf{sf] ;[lt aGg]ePsfn]vlgh tl h:tf dxF]pmhf{sf]vkt sd eO{pmhf{;ª\s6 36\5 . 1

@= -s_ an 0.5

lf{kmn 0.5

(i) kf:snsf]lgod 0.5

(ii) aGb efF8fdf /x]sf] t/n kbfy{df sg} Ps 7fpdF rfk lbOof] eg] Tolt g} rfk ;a}t/ nDa eP/ k|;f/0f xG5 . 1

(iii) xf08f|lns lnkm6, xf08f|lns a|s cflb . 1

-v_ j:t' A sf] ;fk]lIfs 3gTj 5 5 eGg'sf]cy{ j:t' A 4°C tfkj|ddf ePsf]kfgLsf] 3gTj eGbf 5 uOff a9L uxf}xG5 eGg]ale mG5 . 1

Knjgsf] lgod tl/x]sf] j:tdf dfq nfu' xG5 t/ cfls{dl8hsf] l;bwfGt tl/x]sf]/ 8'a]sf]b'j} j:tdf nfu' xG5 jf o:t}sf/0f n]vdf 1

oxfF, $= \frac{5}{2} = 2.5$ 0.5

d $= 1000\ kg/m^3$

g $= 9.8\ m/s^2$

P $= hdg$ 0.5

$= 2.5 \times 1000 \times 9.8$ 0.5

= 24500 pa -gf6{ Psf0 gnjj/df 0.5 cª\s sf6g]   0.5

#= -s_ 1 gm zbl\w kfgLsf] 1°C tfkj|d a9fpgsf nflu rflxg] tfksf]kl/df0fnfO{ 1 Sofnf]/L elgG5 .   1

kfgLsf] clgoldt k|;f/sf] sf/0fn] ubf{ /]kl|h/]6/leq /x]sf] sf]sfsf]nf laO/df /x]sf]kfgLsf] tfkj|d 4°C af6 tn em'bf{To ;sf]cfotg j[l4 xG]ePsfn]   1.5

m = 5 kg

dt = 10°C

Q = 2.1×10^5J

= 210000 J

S = ? 0.5

Q = msdt

S = $\frac{Q}{m \times dt}$

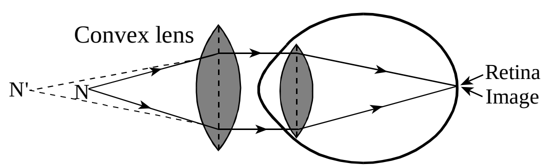
= $\frac{210000}{5 \times 10}$ 1

= 4200 J/kg°C -gf6{ Psf0 gnj/df 0.5 cª\s sf6g]   0.5

-v_ P;=cf0= Psf0 8fof]6/   0.5

l;lno/L d;n   0.5

sG]e]$; n];sf]kbfu] u/]   1



1

$= -s_ (i) >]0fLj|d h8fg   0.5

(ii) >]0fLj|d h8fgdf hDdf ef]N6h (v) = $v_1 + v_2 + v_3$ 0.5

= 1.5 + 1.5 + 1.5

= 4.5V   1

t;y{ef]N6ld6/ 4.5V b]vfpF5 .

ak|mf0bf   ;]hx¿sf]cfo' 5f]6f]xG5 .   1

pkof]utf   6r{nf06, ;r{nf06 === === cflbdf kbfu] ul/G5 .   1

-v_ sg}rDasLo lf]qdf /x]sf];'rfns tf/nfO{nDa xg]u/L rfndf Nofpbf pSt tf/df ljb\o't\zlSt pTkGg xG5 .   11

:6]k 8fpg 6«;kmd{ xf].   0.5

oxfF, $n_1 = 110$

$v_1 = 220$ V

$n_2 = ?$

$v_2 = 30$ V

ca, ;'qcg';f/,

$$\frac{v_2}{v_1} = \frac{n_2}{n_1}$$ 0.5

$$\therefore \frac{30V}{220V} = \frac{n_2}{110}$$

or, $3300 = 220\, n_2$ 1

$$\therefore n_2 = \frac{3300}{220}$$

$= 15$

t;y{ ;]s]08/L kmGsf ;ªVof $= 15$ 0.5

%= -s_ Snf]/g a9L ;ljn]o 5 . 0.5

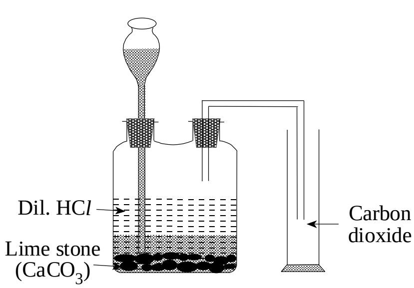
Snf]/g a9L ;ljn]o xG5 lsgls o;sf] aflx/L sIfdf 7 cf]6f O{n]S6«f]g xG5 / o;nfO{ fulfill xg Pp6f O{n]S6«f]g dfq cfjZos kb{5 hals cS;hgsf] ;a}eGbf aflx/L sIfdf 6 cf]6f O{n]S6«f]g xG5 / o;nfO{ fulfill xg 2 cf]6f O{n]S6«f]g rflxG5 . 1.

$Na + O_2 \longrightarrow Na_2O$ 1

$4Na + O_2 \longrightarrow 2Na_2O$ 1

-v_
$$\begin{array}{ccccccccccc} & & H & & H & & & & H & & H \\ & & | & & | & & & & | & & | \\ H & - & C & - & C & - & O & - & C & - & C & - & H \\ & & | & & | & & & & | & & | \\ & & H & & H & & & & H & & H \end{array}$$ 1

nf]sn Pg]y]{;of ¿kdf kof]u ul/G5 jf c¿ o:t}n]vdf 1



1+1

6. -s_ nk{g ul/g]Wft' rfFbL 0.5

$Ag + Cl_2 \longrightarrow AgCl$ 1

$2Ag + Cl_2 \longrightarrow 2AgCl$ 1

;f]8od sfaf{g]6 nj0f s8f lff/ / g/d nj0flarsf]/f;folgs k|tlj|ofaf6 aGg] ePsf]xf]fn] ;f]8od sfaf{g]6nf0{lff/Lo cDn elgG5 . 1.5

-v_ uf/f elgG5 egL n]Vgf] 0.5

l;d]6 agfpg] l;d]6df lhK;d ld;fP/ 1

;fa]	l86/h]6
(i) kmbf6s«Pl;8af6 agf0G5 .	(i) k]6«f]nod /;fogaf6 agf0G5 .
(ii) kfgLdf sd 3hgzLn xG5 .	(ii) kfgLdf a9L 3hgzLn xG5 .

&= -s_ ef0/;n] ;hLj / lghLj{ b'j}sf] sIf0f uf0f b]Vfpg]ePsfn] 1

* ;}]af]kf0gn kIn8 dl:tissf jfodf6/ / P/fsGj08sf]lardf kf0G5 . 1

* o;n]dl:tisnf0{afIx/L rf]6k6s nfUgaf6 arfpF . 0.5

kmf]6f]6bflS;;	kmf]6f]6kkHd
(i) k|sfz pTk]/s e0{;hLjn]b]Vfpg] rfnnf0{kmf]6f]6bflS;; elgG5 .	(i) k|sfz pTk]/s e0{ la?jfsf ljleGg efux¿df xf] j[l4wnf0{ kmf]6f]6kkHd elgG5 .
(ii) o;df ;hLjsf]k'/}efu rfndf cfpF .	(ii) o;df la?jfsf]sIf efu dfq j[l4w xG5 .

-v_ /utn]/St glnsf leTtfx¿df kfg{ rfknf0{/St rfk elgG5 . 1

/ftf /St sf]f	;]tf /St sf]f
(i) logLx¿ af0sGs]e cfsf/sf xG5g\ / GolSno; xF}g .	(i) logLx¿sf] clgoldt cfsf/ xG5 / GolSno; xG5 .
(ii) logLx¿n]clS;hgsf]k|j fx ub5g\.	(ii) logLx¿n] /f]usf sL6f0fx¿;F n8\g]sfo{ub5 .

*= -s_ sf]f ljefhg k|j|ofdf cytoplasm ljefhg xf]hf0{cytokinesis elgG5 . 1

ldof]];; 0.5

hf0uf]6g 0.5

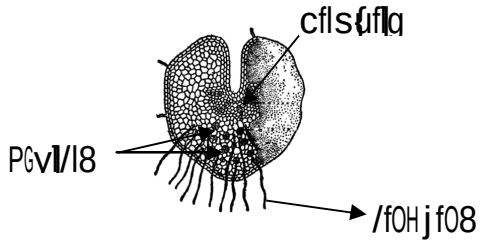
/fdf[]vfnsf lap agfpg g;Sg]la?jf 1

pv' jf c¿ 0.5

-v_ sf}Rofpx¿ ljiffn'xf] ;Sg]ePsfn] 1

k/fn]Rofp 0.5

s6g]Rofp jf c¿ sg}gfd n]vdf 0.5



1+1

cfls{ufgLod 0.5

PG6y]/l8od jf c¿ 0.5

(= -s_ /fof]sf] ju{sf/0f

ls^8d – jg:klt

;a ls^8d – km6g]/fu]/;

l8lehg – Pl6hcf]kd{

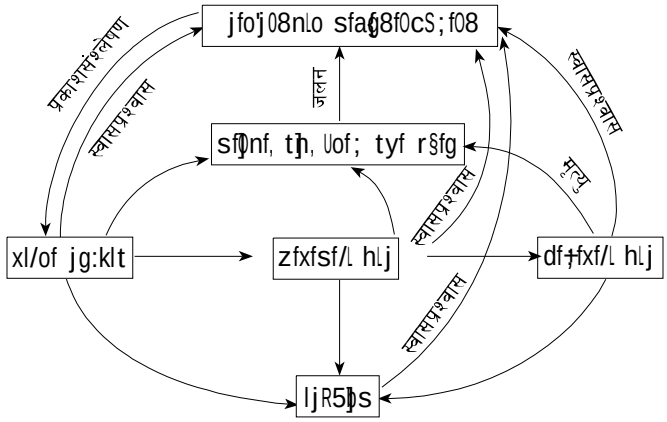
;al8lehg – 8f0sf]6ln8g

pbfx/0f – /fof] (Lettuce) 1

o;sf]kftsf /]fx¿ hfn{ h:tf x6g5g\.

sg}Ps kfl/l:ylts k|ffn{df Pp6f 6kms n]enaf6 csf]6kms n]endf / o:t} u

elg6g5 . 0.5

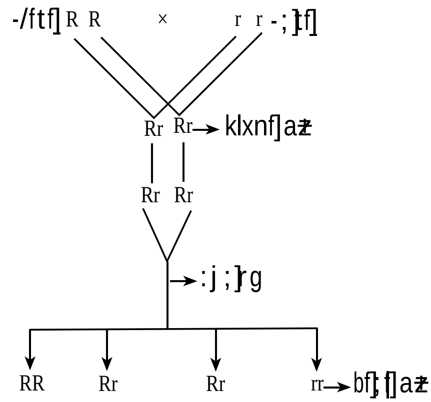


1.5

-v_ cfdfafaaf6 5f]/f5f]/{df ;g{;Sg] (Transferable) nlf0fnf0{ j≠f0fut nlf0f (Hereditary Character) elg6g5 . 1

klxnf] jz{df ;a}/ftf] xG5 lsgls /ftf] k|an uÚf of k|ollf uÚf xf] ha ls bf];|f] jz{df Pp6f zbÜ /ftf] Pp6f zbÜ ;]tf]/ bÒ{cf}6f jÒf{z^a\s/ -l7dfxf_ /ftf] xG5 lsgls Ûofd]6 (Gamete) aGbf hLgx¿sf] ;]uµ]g xG5 . 1

1



1

!)= -s_ w|[}]{;do klxn] a|x\df08df 3Db}u/]sf] Pp6f ljzfn nfdkR5|+tf/f ;Ü{ E 7Ss/ vfg uÒ{k|[jLnufot cGo uk| / pkuk|x¿sf] pTklTt eP . 1.5

s5'jf– 6fS;l ;s 0.5

3f8f – kfnof]l;g 0.5

cf]hfg txsf ljgfz xÚsf sf/0fx¿

o Snf]/f]kmn]f/f]sfaÛsf a9L kbf]{un] cf]hfg Ûof;nfÒ{ljR5]bg ug{[ePsfn] 1

o sfaÛ 66fS'nf]/f08, ldyf0n a|f]df08 h:tf Snf]/g oSt of}ussf]sf/0fn] cf]hfgnfÒ{ljR5]bg ug{[ePsfn] 1

gf]6 ‖ cGo ;xL pTt/ nl[v]df klg c^a\s lbg]

-v_ cToGt 3g cfsfzLo j:t' h;sf] c;Lldt u?Tj an xG5 To;nfÒ{ sfnf] l5b| elgG5 . 1

tf/f d08n	tf/fk'~h
(i) logLx¿sf] lglZrt cfsf/ xG5 .	(i) logLx¿sf] lglZrt cfsf/ xbÛ .
(ii) logLx¿sf] ;^a\of 88 cf}6f 5g\.	(ii) logLx¿sf] ;^a\of 1011 xG5 .

✹

clgjfo{lj1fg **(Compulsory Science)**

Set - 2

;do ⦀ @ 306f !% ldgG5 k"0ff{bs ⦀ &%

pTtL0ff{bs ⦀ @$

---

ljifo lj1fg Group A – Physics

1. -s_ u?Tj kjju egL sf]s]xf]< lxdfn / t/f0{lfqdWo]sg 7fpFdf u?Tj kjjusf]dfg a9L xG5, lsg < lglZrt prf0af6 k"jLsf];txlt/ sg}j:t'v;fNbf b0{;lsG8 ;dokl5 pSt j:t'hldgdf k"0of]eg]prf0 kTtf nufpgxf];\.

[1+0.5+1+2=4.5]

What is acceleration due to gravity? In which region between Himalayan and Terai, the acceleration due to gravity is more why? If a body dropped from a certain hight and it reaches the ground after 2 seconds Calculate the height of that place.

-v_ gjLs/0fLo / cgljs/0fLo pmhf{ar b0{leGgtf n]vgxf];\. jfo'pmhf{af6 s;/L ljb\t\pTkfbg ug{;lsG5 < 5f6s/Ldf n]vgxf];\. [2+1=3]

Write any two differences between renewable and non-renewable sources of energy. How is electrical energy obtained from the wind energy? Write in short.

2. -s_ pmWj{rfk egL sf]s]xf]< cflsl{dl8h / knjgsf]lgodlar b0{leGgtf n]vgxf];\. xf08]nsk];sg l;bwfGtdf cfwfl/t 5 < pSt l;bwfGt sg cj:yfdf dfG5 xG5 < [0.5+2+0.5+0.5=3.5]

What is up thrust? Write any two differences between Archimes's principle and law of floatation. In which rule the hydraulic press is based on and in which condition this rule is valid?

-v_ xf08]nd6/ egL sf]s]xf]< c08f -kmh_ zbw kfgLdf 8A5 t/ gg kfgLsf];Gtl{t 3f]ndf pqG5, lsg < Pp6f sf7sf]6'jlf (8cmx5cmx4cm) kfgLdf /fVbf slt efu kfgLleq xG5 < -sf7sf]3gTj = 800 kg/m^2 / kfgLsf]3gTj = 1000 kg/m^3_

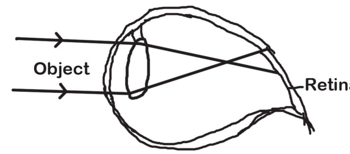
[0.5+1.5+2=4]

What is hydrometer? An egg sinks in pure water but floats in saturated solution of salt, why? a piece of wood (8cmx5cmx4cm)is floating on water. What portion of wood should be inside the water surface? [The density of wood = 800kg/m^3 and density of water = 1000kg/m^3]

3. -s_ sg bO{tTjdf j:t'sf] tfkzlSt e/ k5{< tfkzlStsf] CGS kl/ffnLdf Psf0 s] xf]< Pp6f tfdfsf] ½ Kg sf]lk08nf0{ 20^0C af6 90^0C df ttfpbf slt tfkzlSt lbgk5{< tfdfsf]ljlzi6 tfk wf/0f zlSt 400J/kg^{0}C 5 . [1+0.5+2=3.5]

On what two factors do the quantity of heat in the substance depend upon? What is the unit of heat energy CGS system? What quantity of heat energy is absorbed by copper of ½ kg mass when it is heated from 20^0 C to 90^0C ? The specific heatt capacity of copper = 400 J/Kg^{0}C

-v_ n]\;sf]kmf]s; ug{k|lj|of eGgfn]s]alem]G5 < Pp6f sGe]\$; n]\;sf] lj:t[t Ps xg j:thf0{ n]\;af6 sxfF/fVgk5{ < tn lbPsf] lrqdf cfFfsf] sg k]sf/sf] sdhf]/L b]vf0Psf] 5 < pSt sdhf]/L x6fpg sg n]\; kbfl] ug{kb{5 < lrqdf b]vfpgxf];\.



[1+1+0.5+1.5=4]

What is focusing ? in which place of the principle axis, the object is kept so that the magnification of convex lens is one ? Which type of defect of vision is shown in the given figure? Which lens is to be used to remove this defect of vision? Show in diagram.

4. -s_ ljb\'tsf] tfk c;/ eg]sf]s]xf]< o; ;DaGwL Ps pks/0fsf]gfd n]Vgxf];\. Pp6f 3/df 60w sf 6 cf]6f aNax¿, 750 w sf 2 cf]6f lx6/ / 1 kw sf]Ps 0:qL kbfl] ul/G5 eg] 220v sf]nf0gdf ;'/llft ;fy ljb\'tLo pks/0f ;~rfng ug{ slt lfdtfsf]km\'h kbfl] ul/G5 < [1+0.5+2=3.5]

What is heating effect of electricity? Write the name of one instrument related to it. In a house, 5 bulbs of 60w, 2 heaters of 750 W and 1 iron of 1 kw power were used in the circuit of 220v. What capacity of fuse should be used to operate these equipments safely? Calculate it.

-v_ zlSt ¿kfGt/ / l;bWfGtsf cfwf/df hg]/6/ / ljb\'t\df]6/lar sg}bO{leGgtf n]Vgxf];\. kfgLsf]ljb\'t\ljR5]bg k|j|ofsf]gfdfª\st lrq n]Vgxf];\. [2+2=4]

Write any two differences between generator and electric motor on the basis of energy transfer and working principle. Draw a well labeled diagram of electrolysis of water.

5.-s_ d]8]ne k]/of]8s lgod n]Vgxf];\. tflnsfdf lbOPsf tTjx¿sf cfwf/df tnsf k|Zgx¿sf]pTt/ n]Vgxf];\. [1+1+0.5+2]

Write the Mendeleer's periodic. Answer the following questions on the basis of given electronic configuration of elements.

A = $1S^2, 2S^2 2P^6, 3S^2$

B = $IS^2, 2S^2 2P^6, 3S^2 3p^2$

C = $IS^2, 2S^2 2P^6$

i. A / C tTj sf] ;+of]hotf n]Vg'xf];\. Write valiancy of element A and C.

ii. B sf] AnS n]Vg'xf];\. Write the bolck of element B.

iii. tTj A / B lar xg] /f;folgs k|ltlj|ofsf] ;Gtlnt /f;folgs ;dLs/0f n]Vg'xf];. Write Balance chemical equation of reaction between A and B.

-v_ lUn;/fnsf] Pp6f pkof]u tf n]Vg'xf];\. lbOPsf] lrqsf cfwf/df tnsf k|Zgsf pTt/ n]Vg'xf];\. [0.5+0.5+1+1=3]

Write one use of glycerol. Answer the following questions on basis of given figure.

i. Uof; hf/df sg Uof; hDdf ul/Psf]5 <

Which gas is being collected in the gas jar?

ii. pSt Uof; agfpg rflxg] /;fogx¿sf] gfd n]Vg'xf];\.

Write the necessary chemicals required to prepare this gas.

iii. pSt Uof;nfO{s;/L k/LIf0f ug{;lsG5 < n]Vg'xf];\.

How do we test this gas?

6\. -s_ rfNsf]kfO/fO6af6 sg wft'kfOG5 < wfpm / ldn]ndf kfOg] Ps leGgtf n]Vg'xf];\. rfFbLn] uf9f ;NˆolDo"l/s PlN;8 ;+u /f;folgs k|ltlj|of ubf{ s] aG5 < ;Gtlnt /f;folgs ;dLs/0f;lxt n]Vg'xf];\. [0.5+1+2=3.5]

Which metal is obtained from the ore chalcopyrite ? Write a difference between ore and mineral. What happens when silver reacts with concentrated sulphuric acid? Write with balanced chemical equation.

-v_ l;d]G6 lSNªs/nfO{kl/eflift ug{xf];\. k|];/ ssf/sf]la8 af]SnfO6af6 agfOG5, lsg < ;fa'gsf]Pp6f pbfx/0f n]Vg'xf];\. l8l86Lsf]kof]u Hofb}xflgsf/s xG5, lsg < [1+1.5+0.5+1.5=4.5]

Define cement clinker Handle set of pressure cooker is made with bakelite, Why? Give an example of soap. The use of D.D.T. is very dangerous, Why?

7\. -s_ ef0/; eg]sf]x]xf]< xfD|]/fu sg ef0;/sf]sf/0fn]nfU5 < /utsf]sg}bO{cfwf sfdx¿ n]Vg'xf];\. [1+0.5+2=3.5]

What is virus? Which type of virus causes mumps ? Write any two functions of blood.

-v_ csfDo ljljof egfsf]s]xf]< PShf]jfOg / OG8fjfOg u{yLx¿df sg}bO{cf6f leGgtfx¿ n]vgxf];\. ;b{dvL kmh rxlsnf]3fdlt/ kmsfg'sg kbf/sf]6bflS;; xf]< [1+2+1= 4]

What is reflex action? Write any two difference between exocrine and endocrine glands. Sunflower moves towards the sunlight. What type of taxis is it?

8. -s_ ldof]; ; sf]f ljefhg egfsf]s]xf]< lbOPsf]lrqsf cfwf/df df06f]; ;sf]sg cj:yf b]vfpg vf]hPsf]xf]< pSt cj:yfsf bO{cf6f kl/jt{gx¿ n]vgxf];\. df06f]; ; sf]f ljefhgsf]bO{dxTjx¿ n]vgxf];\. [0.5+0.5+2+1=4]

What is meiosis cell division? Which stage of mitosis is shown in given figure? Write any two features of this phase. Write any two importances of mitosis cell division.

-v_ d}lgs kfhggbsf bO{cf6f ljz]ftfx¿ n]vgxf];\. cN6/g];g ckm hgz/];g egfsf]s] xf]< Rofpsf]dxTj n]vgxf];\. [2+1+0.5=3.5]

Write any two characteristics of sexual reproduction. What is alternation of generation in the lifecycle of fern plant? Write the importance of mushroom.

9. -s_ zbw sfnf]d';f (BB) / zbw ;]tf]d';f (bb) lar k/kfhgg\u/fpF5f klxnf]jz+df sfnf d';f dfq b]vf k/]lsg < tL sfnf d';fx¿lar :jkfhgg\u/fpF5f bf];f]jz+df sfnf d';f / ;]tf d';fsf]lkmgf6fOk cgkft tyf lhgf6fOk cgkft n]vgxf];\. cf/PgPdf kfOgf]bO{cf6f gfO6fkhg a];sf]gfd / l8PgPsf]Ps sfo{n]vgxf];\. [1+0.5+2=3.5]

When pure Black rat (BB) and Pure White rat (bb) are crossed reproduced all black rats appeared in F_1 generation, why? What will be the phenotype and genotype ratio when they are self reproduced in F_2 generation? Write the name of two nitrogen bases in RNA and one function of DNA.

-v_ lap / k/fu ;]rg kljljofsf cfwf/df ;Nnf]/ ;Ntnflar km/s n]vgxf];\. ;kfnfO{ sh Snf;df /flvPsf]5 < rp/sf]kl/l:ylts kbwltdf kfOg]bO{cf6f chljs tTj / Pp6f hljs tTjsf]gfd n]vgxf];\. [2+0.5+1+0.5=4]

Write the difference between pinus and orange on the basis of seed and pollination process. What is the class of snake? Write two biotic factors and one biotic factor in grassland ecosystem.

10. -s_ k[j{Lsf] pTklTt af/] nf]nf ;sf] kl/sNkgf ;ª\lf]kdf n]Vg'xf];\. 8fO{gf];/ / dflg;sf] pTklTt ePsf sfnsf]gfd n]Vg'xf];\. xl/t uQ k|efjsf s'g}b'O{cfkQ\f a'kmfO{bfx¿ n]Vg'xf];\. [1.5+1+2=4.5]

Explain in brief about the origin of the earth of the basis of laplace's hypothesis. Name the period in Which dinosaurs and human were evolved. Write down any two disadvantages of green house effect.

-v_ ;f}o{d08n eg]sf]s]xf]< tf/f d08n / tf/fk'~h lar s'g}b'O{leGgtfx¿ n]Vg'xf];\. [1+2=3]

What is solar system? Write any two differences between constellation and galaxy.

Marking Scheme

Set 2

1. -s_ s'g}uqx tyf pkuqsf] ;txlt/ :jtGq k'jf{ vl;/x]sf] j:t'df To;sf]u?Tj ann] ubf{{pTkGg xg]kj{ju nfO{u?Tj kj{ju elgG5 . [1]

t/fO{lf]qsf]u?Tj kj{jusf]dfg a9L xG5 . [0.5]

lsgeg]u?Tj kj{jusf]dfg cw{of; / prfO{sf]ofukmnsf] ju{{ JoTj|dfgkflts xG5 / t/fO{sf]prfO lxdfnL lf]qsf]eGbf sd ePsfn]u?Tj kj{ju a9L xG5 . [1]

oxf, ;?sf]ult (u) = o m/s

kj{ju (g) = 9.8m/s²

;do (t) = 2 s

prfO (h) = ?

;'q h= ut+ ½gt² [0.5]

or h=0x2+ ½ x9.8 x (2)²

= 19.6m [1.5]

∴ prfO (h) = 19.6m

-gf]6 ∥ PsfO gn]v]df 0.5 36fpg]

-v_ gjLs/0fLo pmhf{/ cgjLs/0fLo pmhf{ar leGgtfx¿

	gjLs/0fLo pmhf{		cgjLs/0fLo pmhf{
-s_	kf]fu ub{{hf]F gl/lTtg]/ sd ;dodf kg'∥ lgdf{0f ug{;lsG5 .	-s_	kf]fu ub{{hf]F l/lQb}hfg]/ kg'∥ lgdf{0f ug{nfvf}+jif{nfU5 .
-v_	a9L kf]fun]phf{;s6 b'/ xG5 .	-v_	a9L kf]fun]phf{;s6 lgs6

			eljiodf cfpF5 .

jf o:t}ldNbf]bO{km/s n]Vg'xf]df [2]

xfjf rNg]7fpdf Ff ka'Vf h8fg ug{'/ ka'Vfnf0{6jf0{gdf hf8]/ hg'/6/ rnfpFf ljB'tzlQmpTkfbg xG5 . [1]

2. -s_ sg}j:thf0{t/n jf Uof;df /fVbf j:thf0{dflylt/ wsNg]kl/df0fFTds annf0{ pmNj{fk elgG5 .

-s_ cflsdl8hsf]l;bfGt t/n / Uof; bj}df nfu' xG5 .	-s_ Knjgsf]l;bfGt t/n kbfy{df dfq nfu' xG5 .
cflsdl8hsf]l;bfGt pmNj{fk Ö lj:yflkt t/nsf] tf}n xG5 .	KNjsf]l;bfGt pqg]j:t'sf] tf}n Ö lj:yflkt t/sf] tf}n xG5 .

jf o:t}ldNg]bO{km/s n]Vg'xf]df [2]

– xf08f]ns k|]; kf:snsf]lgoddf cfwfl/t 5 . [0.5]

– pSt lgod 3if{f zGo / grlxg]cj:yfdf dfGo xG5 . [0.5]

-v_ – t/n kbfy{sf]3gTj gfKg]pks/0fnf0{xf08f]ld6/ elgG5 . [0.5]

– knnsf]3gTj zbw kfgLsf]3gTjeGbf a9L xg]ePsfn]of]zbw kfgLdf xA5 t/ knnsf]3gTj gb'kfgLsf]3gTjeGbf sd xg]ePsfn]knn gb'kfgLdf tl/G5 . [1.5]

oxf;F sf7sf]cfotg (v) = 8cmx5cmx4cm

= 160cm^3

= 0.00016m^3

sf7sf]lk08 (m) = 3gTj (x) cfotg (v)

= 800x0.00016

= 0.128kg

lj:yflkt kfgLsf]cfotg = sf7sf]lk08 / kfgLsf]3gTj

$$= \frac{0.128}{1000}$$

= 0.000128 m^3 [1]

sf7sf]kfgLleqsf]efu = lj:yflkt kfgLsf]cfotg / sf7sf]cfotg

$= \frac{0.000128}{0.00016} = \frac{8}{10} = \frac{4}{5}$ efu [1]

3. -s_ – j:t'sf]lk08 / c0fx¿sf]ult zlSttdf j:t'sf] tfkzlSt e/ k5{.

– tfkzlSttsf] CGS Psf0 Sofnf]/L xf].

oxfF lk08 (m) = $\frac{1}{2}$ kg = 0.5 kg

tfdfsf]lj:tf=wf=z: (s) = 400 j/kg°c

tfkj|ldsf]km/s (dt) = 90°c

= 70°c

tfksf]kl/df0f Ö <

tfk ;dLs/0f, Q = m x s x dt [1]

= 0.5 x 400 x 70

= 14000 j electricity [1]

Psf0 gn]v]df 0.5 36fpg]

-v_ – n]G;sf]kmf]s; kbf{df kg{u/L :ki6 cfs[t b]lvg]u/L ldnfpg' jf kbf{/ n]G;sf] b'/L ldnfpg' elgG5 . [1]

– j:thf0{2F (center of curvature) df /fVgk5{. [1]

– cb'/ b[i6sf]sdhf]/L xf]. [0.5]

– pSt sdhf]/L x6fpg sG;j]e n]G;sf]kbf{u ug{k5{. [0.5]

4. -s_ – ljB't\zlStnf0{tfk zlStdf ¿kfGt/0f ug{]k|lj|ofnf0{ljB't'sf] tfk c;/ elgG5 .

– pks/0fsf]gfd – ljB't\lx6/

– oxfF

pks/0f	;ª\Vof	hDdf ;fdYy{
jNj 60w	5	5x60=3000w
lx6/ 750w	2	2x750=1500w
:qL 1kw	1	1x1000=1000w
		h:df= 2800w

efN6]h (v) = 220v

ljB't\wf/f $I = \frac{P}{V} = \frac{2800}{220v} = 12.72$ A [1]

t;y{ cfjZos ˆohsf]lfdtf 15 xG5 . [0.5]

-v_ –

hg]/]6/	ljbb't\df6/
!= hg]/]6/n]ofl@qs zlStnfO{ljbb't\ zlStdf ¿kfGt/0f u5{	!= o;n]ljbb't\zlStnfO{ofl@qs zlStdf ¿kfGt/0f u5{.
@= of]kmf/f8]sf]ljbb't\rDasLo pTkfbg l;bwfGtdf cfwfl/t xG5 .	@= of]df6/ c;/sf]l;bwfGtdf cfwfl/t xG5 .

5. -s_ tTjx¿n]efl}ts / /f;folgs u0fx¿ ltgLx¿sf]kf/df0fljs ef/sf]kl/of8s sfo{ :j¿k xG5Ú .

i) A sf] ;+ofHotf =2 / c sf] ;+ofHotf =0 n]V}df [1]

ii) P – Ans n]V}df [1]

iii) $A+B_2 \rightarrow AB_2$

$Mg + Cl_2 \rightarrow Mg\ Cl_2$ [1]

$Mg + Cl_2 \rightarrow Mg\ Cl_2$ [1]

-v_ – lUn;6f]h ld7f0 ulnof]agfpg, 5fnf km6}gaf6 hf]ufpg kb\f]u ul/G5 jf o:t} sg}Ps n]V}df [0.5]

1) Pdf]gof Uof; n]V}df [0.5]

2) NH_4Cl / $Ca(oH)_2$ n]V}df [1]

3) leh]sf]/ftf]ln6d; k]k/ Uof; hf/df /fvL k/LIf0f ul/G5 egL n]V}df [1]

6. -s_ – tfdf n]V}df

– wfpmdf wftsf]dfqf lemSg ;Dej xg]u/L a9L xG5 t/ ldg]/ndf pNn]vgLo wftsf]dfqf xF]g . [1]

– $Ag + conc.\ H_2 SO_4 \rightarrow Ag_2 SO_4 + H_2O$ [1]

– $2Ag + conc.\ 2H_2SO_4 \rightarrow Ag_2 SO_4 + SO_2 + 2H_2O$ [1]

(Balanced u/]df)

-v_ – SoflN;od Pnldg]6 / SoflN;od l;lns]6sf]ld>0fsf /ftf l9sfx¿ hg !^))°C tfkj|dsf]oxLaf6 v:5g\eg]o;nfO{lSnªs/ elgG5 . [1]

– j]shf06 ttfpF klg g/d gxg]Ps lsl;dsf]ydf{;]6ª Knfl:6s ePsf] xg]fn]egL n]V}df [1.5]

– ;f]8od l:6/]6 n]V}df [0.5] jf cGo sg}Ps n]V}df [0.5]

– DDT sf]kb\f]u ubf{kf]0fL / jg:kltdf hDdf xG5 hg kf]0fL / jg:kltsf] kb\f]u xG5 ;f]xL kf]0fLnfO{klg 3fts xG5 / nfdf / lauf]c;/x¿, h:t}

dflg;nfO{SofG;/, df5fx¿sf] jf0fLaf6 36\g] r/fx¿n] kmh sd kfg]{ kmhsf]
af]Ln]f kftnf]xg]/ jftfj/0fdf k|s[ts ;Gthg lau|b5 .

7.-s_ – ef0/; cToGt};fd hLjf0f' xf]hg k0f{¿kdf hLljt j:tdf cfl>t xG5 [1.5]

– xf8]/fu kf/fldShf]ef0/; (Paramyxo Virus) n]nfUb5 egL n]Vgdf [0.5]

– /utsf bO{sfo{¿

!= kl/jxg (Transportation)

@= ;'lff (Protection)

#= lgoGq0f (Regulation)

sg}bO{n]Vgdf [1]

-v_ – xfdf[]z/L/sf]sg}caM\un]sg] stimulus sf]pkl:yltdf Automatic ¿kdf tTsfn b]vfpg]k|tlj|ofnfO{csfDo lj|of elgG5 . [1]

PShf]j|f0g UnfG8	0G8f]j|f0g UnfG8
!= gnLoSt xG5 .	!= gnL ljxLg xG5 .
@= o;n]0Ghf0d pTkfbg u5{.	@= xdf]{gnfO{l;wF/ut gnLdf k¥ofp5 .

o:t}sg}bO{leGgtf n]Vgdf [2]

;sf/Tds kmf]sf]6bflS;; n]Vgdf [1]

8. -s_ – ;Gtfg pTkfbgsf nflu z/L/sf]khgg caM\usf sf]fx¿df dfq xg]Pp6f sf]f 6lj|P/ rf/ cf]6f aGg]vfnsf]sf]f ljefhgnfO{ldcf];; sf]f ljefhg elgG5 jf o:t}ldNg]kl/efiff n]Vgdf [0.5]

– d]fk]h cj:yf n]Vgdf [0.5]

!= GolSno/ dDa]g lanfP/ hfG5 .

@= j|f]dfl68x¿ sf]sf]dWoefudf uO{ldn]/ /xG5g\. jf o:t}ldNg]bO{kl/jtg\x¿ n]Vgdf [2]

– != o;n]z/L/sf]jf0fLw / ljsf; xG5 .

@= jIf0fUt l:y/tf sfod /fV5 .

#= cd]lgs khggdf dbt u5{.

jf o:t}ldNg]bO{dxTTjx¿ n]Vgdf [0.5x2=1]

-v_

– hLjx¿sf];aVofdf jf0fLw xG5 .

– hLjx¿sf] jf+ sfod /xG5 .

jf o:t}bO{ljz]iftfx¿ n]Vg'df [2]

plgp;sf] hLjg rjIdf :kf]/f[k[f06 / ÚofdÙf[kmf06 hg]/]; g Psk5 csf][cf0/xG5 .

o;nf0{cN6/g];g ckm hg]/];g elgG5 .

k[:t k[]6g, le6fldg / vlgh kf0G5 . d6'/fh, lrgL/fh lgoGq0f xG5 . o:t}ldNg]

kmf0bfx¿ n]Vg'df [0.5]

9. -s_ – sfnf]xg]u0f k[n u0f ePsfn]/ sg}hf8f km/s u0f ePsf hLjx¿lar k/k[hgg\xF kl/xnf]k':tfdf k[n u0f dfq b]Vg]ePsfn]n]Vg'df [1]

– bf];f] jf+sf]lkmgf[6f0k / lhgf[6f0jsf]cgkft 3:1 / 1:2:1 n]Vg'df [0.5]

– Adenine guanine, cytosine and Uracil dWo]sg}bO{n]Vg'df [2x0.5=1]

– DNA n]jf+f0fUt u0f ;fg{dbt u5{egL n]Vg'df [1]

-v_

;Nnf]	;Gtnf
!= lap kmnn]9flsPsf]xF g .	!= lap kmnleq 9flsPsf]xG5 .
@= xfjfaf6 dfq k/fu ;]rg xG5 .	@= xfjfafx]s cGo dfWodaf6 klg k/fu ;]rg xG5 .

egL n]Vg'df [1]

– ;k{sf]Snf; –/]K6lnof (Reptilian) n]Vg'df [0.5]

– df6f](Soil) k[sfz (Light) kfgL (Moisture) tfk (heat) dWo]sg}bO{ch}jjs tTjx¿ n]Vg'df [2x0.5=1]

– xl/of la?jfx¿, hLjx¿dWo]Ps h}js tTj n]Vg'df [0.5]

10. -s_ – cfsfzdf km}nPsf wh'sf s0fx¿larsf]u?Tjfsif0fn]ubf{Pscsf{F 7Ss/ vfg]jId rln/xF k[jLnufot ljleGg uk tyf pkuk¿ ag]sf xg\. [1.5]

8f0gf];/ – 6]ql;s sfn

dflg; – clt g'tg sfn [2x0.5=1]

– xl/t uk k[efjsf bO{a]kmf0bfx¿

!= k[jLsf] tfkjIddf j[lw xG5 .

@= lxdfnsf]lxp klUnbf ;fdlb|s lsgf/fsf b]zx¿ 8Ag ;Sg]vt/f xG5 .

jf cGo ldNg]sg}bO{a]kmf0bfx¿ n]Vg'df [2x1=2]

-v_ ;ǒ{/ o;sf]jl/kl/ 3Dg]ukx¿, pkukx¿, lzz'ukx¿, pTsfx¿ wdls]tx¿
OToflbsf] ;dXnfO{ ;fŷ{d08n elgG5 . [1]

tf/f d08n	tf/fk'~h
!= logLx¿ lglZrt cfsf/ agfO{ ;dXdf /xs]f xG5g\.	!= logLx¿ lglZrt cfsf/df /xsf]xF}g\.
@= o;df sxL tf/fx¿ -**_ xG5g\.	@= o;df cgluGtL -s/f}8f}F tf/fx¿ xG5g\.

jf o:t}bO{km/sx¿ n]vdf [1]

;dfKt