

Specification Grid-2065

Time: 2.15 hours.

Subject: Science

Full Marks: 75

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)

Class 10 (Compulsory Science)

Set - 1

; do M@ 306f !% Idgϕ

k0ff\$ M&%
pTtl0ff\$ M@\$

Physics

!- s_ u?Tj an eg\$]s]xf] < o; sf]lbzf stflt/ x65 < olb kV]lsf]lk08 6×10^{24} kg
/ cw[of; 6380 km 5 eg]kV]lsf] ; txa6 500 km dflly /x\$]f] 200 kg lk08
ePsf]j : t\$]f]tfn slt x65 < 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?

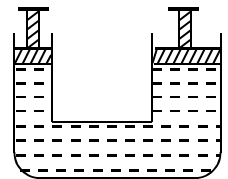
-v_ ydf[olSno/ kmg kltlj of eg\$]s]xf] < gkfn ; /sf/n] uf] / Uof; Knf66
lgdf[fsf nflu cgbfg lb0/x\$]f] 5 . o; n] pnhf{ ; a\$6 60g ug{ s; /l dbt
ub\$ < sg}b0{cf}f ts{lb0{kli6 ug}f] \ 1+2 = 3

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 opinion to prove it.

@- s_ rfnf0{c; / kfg]b0{cf}f tTj x2sf]gfd nVgxf] \ . tnsf]lrq x]l ; flwPsf
k7gx2sf]pTt/ nVgxf] \

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; bwf6t byf0Psf]5 <

Which law is shown in the diagram?

(ii) pSt l; bwf6t nVgxf] \

State the law.

(iii) o; l; bwf6tdf cfwf/t c2 sg}b0{cf}f pks/0fx2sf]gfd nVgxf] \

Name any two devices based on this law.

-v_ sg}A eG]j : t\$]f] ; fk]lfs 3gTj 5 5 eGsf] cy{s]xf] < Knjgsf] lgod
cfls[dl8hsf] l; bwf6teGbf s; /l leG 5 < sg}Ps sf/of lbgxf] \ . Pp6f
20m×10m×5m cfotg ePsf]l6gsf]6df a\$ldf cfwf kfgl x6f kfgln]lkwdf lbg]
rfk lgsf]ngxf] \ 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 $20\text{m} \times 10\text{m} \times 5\text{m}$ is half filled with water? Find the pressure exerted by the water on its bottom.

#- S_ 1 Sofnf]l tfkzlstsf] kl/efiff n]vgxf] \ . /k]h]d/df /flvg] sf]sf]hf, lao/x]sf] af]ndf s]l 7fpFvfnl /flvPsf] x65, lsg < sg} kbfsf] 5 kg lk08nf0{10°C tfkj]d j]lw ug{ $2.1 \times 10^5 \text{ J}$ tfkzlst cfjZos k5{eg} ; f] kbfsf]lj]zi6 tfk wf/0f lfdtf slt xf]hf < $1+1.5+2 = 4.5$

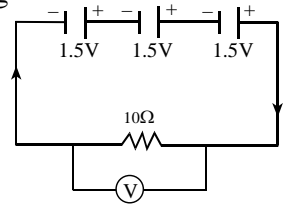
Define one calorie heat. There is some empty space in the bottles of Coca-Cola, beer etc. which are kept in refrigerator, why? If $2.1 \times 10^5 \text{ J}$ heat energy is required to increase temperature of 5 kg mass of a substance by 10°C . What will be the specific heat capacity of the substance?

-v_ n] ; sf] ; fdVo}sf] P ; -cf0€ Psf0 s] xf] < cf]fsf] sg efun] cf]fsf] n] ; sf] s]bl]s/0f b]/nf0{36a9 ug]sfd u5{ < cf]fsf] n] ; sf] s]bl]s/0f b]/L 36fpg g ; lsg]sdhf]lnf0{s ; /L ; wfg} ; ls65 < 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_ lb0Psf]lrq cllbog u/L ; fl]wPsf k]gx]sf]p]t/ lbgxf] \ $0.5+1.5+1+1 = 4$

Study the given figure and answer the following questions:



(i) lb0Psf] ;]hx]sf] ; d]ls/0f sg k]f/sf]xf] <

What type of combination of cell is given?

(ii) efl]6fld6/df slt dfg b]/fpnf < lx ; fa ugxf] \

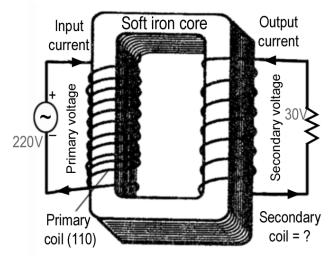
What will be the value of voltage shown by the voltmeter?

Calculate.

(iii) o ; h8fgsf]Pp6f a]kf0bf / Pp6f pkof]uttf n]vgxf] \

Write one disadvantage and one application of this combination.

-v_ lj]b]t\r]Daslo pk]kfbg eg]f] s] xf] < lb0Psf] 6f] ; knd} sg k]f/sf] xf] < p]st 6f] ; knd}df ; }]8/L kn]sf]x]sf] ; a]vof k]tf 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 lj 1fg (**Chemistry**)

%= -s_ cIS; hg / Snfl/gdWb]sg a9L ; lj tp tTj xf] < lsg < cIS; hgn]; fl]8od; E kltlj rpf ubf{xg]/f; folgs kltlj rpf sf]; GtInt ; q ; dls/Of nVgxf] \

$0.5+1+2 = 3.5$

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

-v_ 0y/sf]; Argfids ; q / Pp6f pkof]utf klg nVgxf] \ kfgL; E 3Nbf sfaf]s cDn agfpg]llof; sf]kpf]u 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_ kflom Pq]sf]6ns lbg]kl5Nnf]efudf sg wft' nkg ul/Psf]x65 < ; f]wft' / Snfl/g llof; sf]larsf]/f; folgs kltlj rpf sf]; GtInt ; q ; dls/Of nVgxf] \ ; fl]8od sfaf]s lff/lo nj of 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, afnj f / kfglsf]ld>0fnf0{s]elg65 < ; f]ld>0fsf]hdg]cj lw a9fpgsf] nflu s]ug]k5{< sRrf kb]f{/ 3Ng]lfdtfsf]cfwf/df ; fag / l86/h]6df km/s nVgxf] \ $0.5+1+2 = 3.5$

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 lj 1fg (**Biology**)

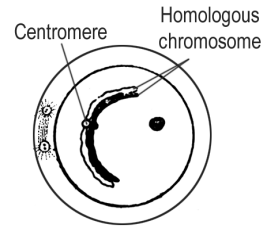
&= -s_ ef0/; nf0{lsg ; hlj / lghlj larsf]>fVnf elg65 < ; fl]8od :kf0gn km8 dl:tissf]sg efudf kf065 < o; n]s]sfo{ub5 < km]6f]6dflS; ; / km]6f]6kHdlar sg]b0{cf]f leGtf nVgxf] \ $1+1+0.5+2 = 4.5$

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\$] s] xf] < /ftf /Stsf] / ;]f /Stsf]lar agj6 / sfo\$] cfwf/df b0{cf}f le6gtfx; 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\$]f0g]; ; eg\$] s] xf] < lraqd sg k\$]/sf]sf]f ljefhg b]yf0Psf] 5 < o; sf]cj :yf klg n]vgxf] \. s:tf vfnsf la?jfx;nf0{ e]h6]be k]kfu] gaf6 k]hgg\ul/65 < 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{xg h?/l 5 < vfg of]o Rofpsf b0{cf}f pbfx/0f n]vgxf] \. plgp]f] lofd]f]k]f06 cj :yfsf] lraq agf0{sg}b0{efusf]gfdS/0f ugxf] \ 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]f0{j ul\$/of u/l o; sf]Pp6f u0f n]vgxf] \ vfb00 >f]vnf eg\$] s] xf] < sfa6 rj]sf]/yflrq agfpgxf] \

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

-v_ jz]f0fut n]f0f eg\$] s] xf] < /ftf]k]h k]nlg](RR) / ;]f]k]h k]nlg](rr) s]f]psf lardf klxn]k/;]g / kl5 :j ;]g u/f0of]. klxnf]/ bf] f]jzdf s:tf]s:tf] /a]sf k]h xg] s]f]psf] la?j]f lg:s65g\ / lsg < cf]Zos 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 cGtl/lf lj 1fg (Geology and Astronomy)

!)= -s_ k[Vj]lsf]pTklTtaf/]hh{j kmgsf]kl/sNkgf ; aNkdf n[Vgxf] \. s5]f / 3f8fsf] pTklTt ePsf]sfnsf]gfd n[Vgxf] \. cfhf] tx ljgfh xgfsf sg}b0{cf8f 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|eg8f]s]xf] < tf/f d08n / tf/fk'-hlar sg}b0{cf8f le8gtf n[Vgxf] \ $1+2 = 3$

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



pTt/ kl:tsf k/lif0f sl-hsf (Marking Scheme)

Set 1

!= -s_ sg}ux tyf pkuxn]sg}j :thf0{cfkng]s]blt/ cfsif0f ug]annf0{u?Tj an elg65 . 1

u?Tj ansf]lb; f k[Vj]lsf]s]blt/ x65 . 0.5

oxfF k[Vj]lsf]lk08 (M) = 6×10^{24} kg

cw{of; (R) = 6380 km

j :tsf]lk08 (m) = 200 kg

j :tsf]prf0 (h) = 500 km

G = $6.67 \times 10^{-11} \text{ Nm}^2 / \text{kg}^2$

tfh (w) = ?

$$R + h = 6380 + 500 \text{ km}$$

$$= 6880 \text{ km}$$

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

$$\begin{aligned}
&= \frac{6.67 \times 10^{-11} \text{ Nm}^2/\text{kg}^2 \times 6 \times 10^{24} \text{ kg} \times 200 \text{ kg}}{(6880 \text{ km})^2} \\
&= \frac{6.67 \times 6 \times 200}{(6.88 \times 10^6)^2} \times 10^{-11+24} \text{ N} & 0.5 \\
&= \frac{6.67 \times 6 \times 200}{6.88 \times 6.88} \times 10^{13-12} \text{ N} \\
&= \frac{8004}{47.3344} \times 10 \text{ N} & 0.5 \\
&= 169.09 \times 10 \text{ N} \\
&= 1690.9 \text{ N} & 0.5
\end{aligned}$$

g = 1690.9 N

- v_ b0{cf}f xn'sf Golsno; x₂ tfk / rfksf] sf/0fn]; efhg e0{ux}f Golsno; agf0{zlst lg:sg]klj rfnf0{ydf}Golsno/ kmbhg kl]tj rpf elg65 . 1
- (i) ura/ uof; knf66 lgdf0f u/L pkof]u ubf{cglj s/0fno pnhf}f]vkt ug]b/ 36g u0{phf}; a\$6 Gog x65 . 1
- (ii) ur] / uof; knf66af6 v] u0/x\$}f j :tx₂af6 bl3\$fnlg ₂kdf ; :tf]phf}f]; f] a6g]ePsf]n]vlgh t] h:tf dx6f]pnhf}f]vkt sd e0{pnhf}; a\$6 365 . 1

@-s_ an 0.5

lf]km 0.5

- (i) kf:snsf]lgod 0.5
- (ii) a6b efBfdf /x\$}f] t/n kb]ydf sg}Ps 7fpdf rfk lb0of]eg]Tolt g}rfk ; a]t/ nDa eP/ k] f/0f x65 . 1
- (iii) xf08]ns lnk]6, xf08]ns a\$ cflb . 1

-v_ j:t'A sf]; fk]l]fs 3gTj 5 5 efgsf]cy{j:t'A 4°C tfkj rddf ePsf]kfglsf] 3gTj e6bf 5 u0ff a9L ux}f]x65 e6g]alen65 . 1

knjgsf] lgod t]y/x\$}f] j:tdf dfq nfu' x65 t/ cfls]d]8hsf] l; b]w]f]t t]y/x\$}f]/ 8a\$]f]b]j} j:tdf nfu' x65 jf o:t}sf/0f n]ydf 1

$$\text{oxf}h = \frac{5}{2} = 2.5 \quad 0.5$$

$$\begin{aligned}
d &= 1000 \text{ kg/m}^3 \\
g &= 9.8 \text{ m/s}^2 \\
P &= hdg & 0.5 \\
&= 2.5 \times 1000 \times 9.8 & 0.5
\end{aligned}$$

$$= 24500 \text{ pa} \quad \text{-gf} \text{ MPsf0 gny} \text{df } 0.5 \text{ c}^a \text{ s sf6g} \quad 0.5$$

#= -S_ 1 gm zbw kfglsf] 1°C tkj id a9fpgsf nflu rflxg] tkfsf] kl/df0fnf0{1
Sofnf] l elg65 . 1

kfglsf] clgoldt k] f/sf] sf/0fn] ubf{ /kl/h/0/leq /xsf] sf\$fsfhf lao/df
/xsf] kfglsf] tkj id 4°C af6 tn embf{to; sf] cfotg j [bw xg] ePsfm] 1.5

$$m = 5 \text{ kg}$$

$$dt = 10^\circ\text{C}$$

$$Q = 2.1 \times 10^5 \text{ J}$$

$$= 210000 \text{ J}$$

$$S = ? \quad 0.5$$

$$Q = msdt$$

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

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

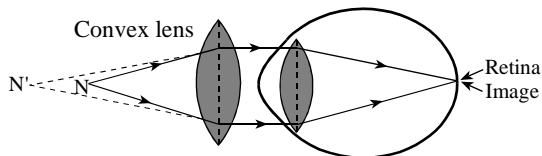
1

$$= 4200 \text{ J/kg}^\circ\text{C} \quad \text{-gf} \text{ MPsf0 gny} \text{df } 0.5 \text{ c}^a \text{ s sf6g} \quad 0.5$$

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

l; lno/l d; n 0.5

sges; nq; sf] kof] u/] 1



1

\$=-S_ (i) >Qflj id h8fg 0.5

(ii) >Qflj id h8fgdf hDdf efl]6h (v) = v₁ + v₂ + v₃ 0.5

$$= 1.5 + 1.5 + 1.5$$

$$= 4.5 \text{ V}$$

1

t; y{efl]6ld6/ 4.5V b]fp5 .

aknf0bf M ; jhx; sf] cfo' 5f] xG5 . 1

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

-v_ sg] rDaslo lf] df /xsf]; rfnf tf/nf0{nDa xg] u/l rfnf NofpBf pSt

tf/df lj b0t'zlst pTkGg xG5 . 11

:6k 8fpg 66; km] { xf]. 0.5

$$v_1 n_1 = 110$$

$$v_1 = 220 \text{ V}$$

$$n_2 = ?$$

$$v_2 = 30 \text{ V}$$

ca, ; qcg' f/,

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

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

$$\text{or, } 3300 = 220 n_2 \quad 1$$

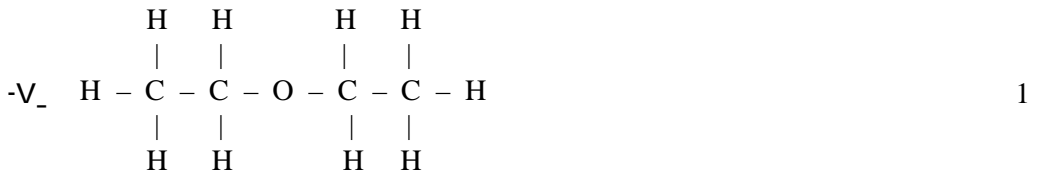
$$\therefore n_2 = \frac{3300}{220}$$

$$= 15$$

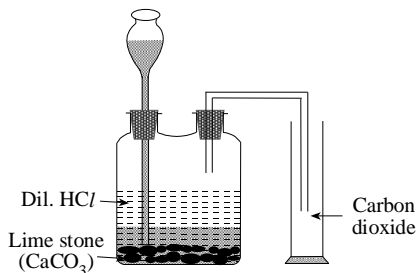
t; y{ ; \$18/L knsf ; aVof = 15 \quad 0.5

%= -s_ Snfl/g a9L ; l; p 5 . \quad 0.5

Snfl/g a9L ; l; p xG5 lsgls o; sf]afix/L slfdf 7 cGf On\$6G5 xG5 / o; nf0{ fulfill xG Ppof On\$6G5 dfq cfjZos kb5 hals clS; hgsf] ; aGbf afix/L slfdf 6 cGf On\$6G5 xG5 / o; nf0{ fulfill xG 2 cGf On\$6G5 rfxG5 .



nf\$ n Pg]yl; of 2 kdf kofu ul/G5 jf c2 o:t}nydf \quad 1



1+1

6. -s_ n]g ul/g]wft' rfb \quad 0.5



2Ag + Cl₂ → 2AgCl 1
 ; flBod sfaf0 nj of s8f lff/ / g/d nj oflarsf]/f; folgs kl|tlj pofaf6 agg] ePsf]xgfn]; flBod sfaf0nf0{lff/lo cDn elg65 . 1.5

-v_ uf/f elg65 egl n]ydf 0.5
 l; d06 agfp5 l; d06df lhk; d ld; fP/ 1

; fag	l86/h06
(i) kmaf6kPl; 8af6 agf065 .	(i) k06]nod /; fogaf6 agf065 .
(ii) kfgldf sd 3hgZln x65 .	(ii) kfgldf a9L 3hgZln x65 .

&-s_ ef0/; n]; hlj / lghlj bj }sf]s}l uof byfpg]ePsfn] 1
 * ; 7af]kf0gn km8 dl:tissf j fodf6/ / P/fs6j 08sf]lardf kf065 . 1
 * o; n]dl:tisnf0{aflx/l rf0k6s nllgaf6 arfp5 . 0.5

knf0f]6afS; ;	knf0f]6kHd
(i) k\$zfz ptk]s e0{; hlj n]byfpg] rfnnf0{knf0f]6afS; ; elg65 .	(i) k\$zfz ptk]s e0{ la?j fsf lj leG efux;df xg] j 0nwnf0{ knf0f]6kHd elg65 .
(ii) o; df ; hlj sf]k/)efu rfndf cfp5 .	(ii) o; df la?j fsf]s}l efu dfq j 0nw x65 .

-v_ /utn]/St glnsf leTfx;df kfg]rfknf0{/St rfk elg65 . 1

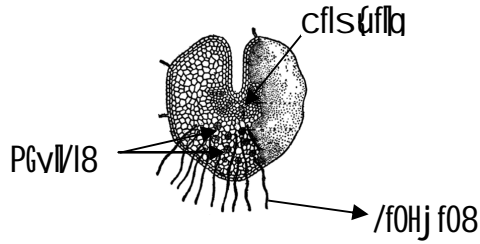
/ftf /St sf]f	; }f /St sf]f
(i) loglx; af0s6s6 cfsf/sf x65g\ / Golsno; x65g .	(i) loglx;sf] clgoldt cfsf/ x65 / Golsno; x65 .
(ii) loglx;n]clS; hgsf]kj fx ub5g\	(ii) loglx;n] /f]usf sl6f0fx; ; 6 n8g]sfo{ub5 .

*-s_ sf]f lj efhg klj pofdf cytoplasm lj efhg xghf0{cytokinesis elg65 . 1
 ldof]; ; 0.5
 hf0uff]6g 0.5
 /fdf]vfnsf lap agfpg g; Sg]la?jf 1
 pv'jf c; 0.5
 -v_ sg}Rofpx; lj iffn' xg ; Sg]ePsfn] 1
 k/fn]Rofp 0.5

sg]Rofp jf c; sg}gfd n\df

0.5

1+1



cfls0flod

0.5

P6yI/18od jf c;

0.5

(= -s_ /fof\$]j ul\$/of

ls^a8d - jg:klt

; a ls^a8d - kmj]f]l];

l8lehg - PIGhcf]kd{

; al8lehg - 8f0sf]6ln8g

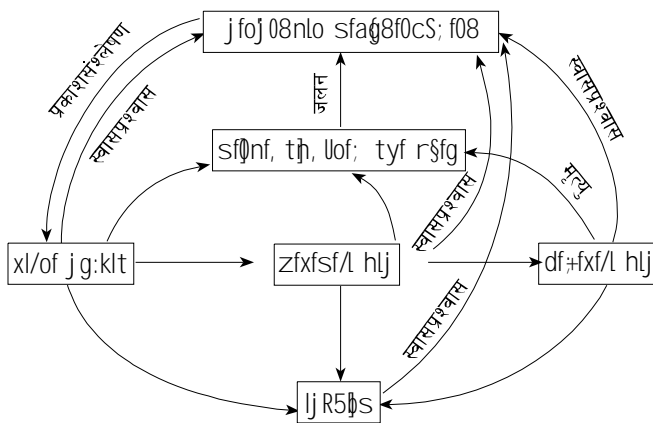
pbfx/of - /fof](Lettuce)

1

o; sf]kftsf /] fx; hfnl h:tf x65g\

sg}Ps kfl/l:ylts k0ffnldf Pp6f 6kms n}naf6 csf]6kms n}ndf / o:t} elg65 .

0.5



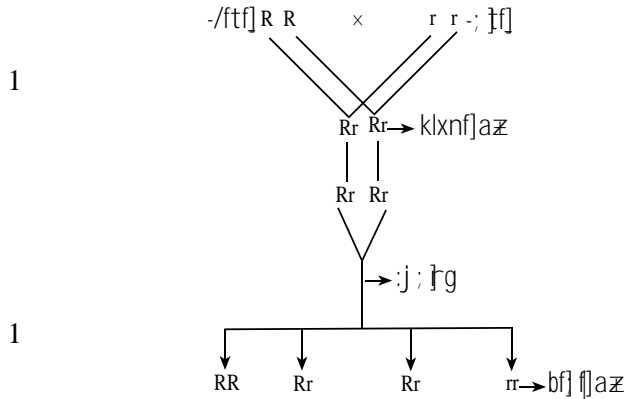
1.5

-v_ cdfafaaf6 5f]f5f]ldf ; g{; Sg](Transferable) nlf0fnf0j zfoflut nlf0f (Hereditary Character) elg65 .

1

klxnf]j zdf ; a)/ftf]xG5 lsgls /ftf]kən u0f of k[olif u0f xf]ha ls bf] f] j zdf Pp6f zbw /ftf] Pp6f zbw ; jf]/ b0{cf6f j 0f{z^as/ -l7dfxf_ /ftf]xG5 lsgls Uofc6 (Gamete) a6bf hlGX;sf]; [u] g xG5 .

1



!)= -s_ w]}; do klxn]axk08df 30b}u/šf]Pp6f lj zfn nfdkR5}tf/f ; b{ E 7Ss/ vfg u0{k]j lnufof c6o ux / pkux;sf]pTKlIt eP . 1.5

s5]f- 66ol; s 0.5

3f6f - knofl]; g 0.5

- Snf]f]knf]f]sfag sf a9L kof]un]cf]hf] Uof; nf0{l]R5}g ug[Epsfn] 1
- sfag 666Snf]f08, ldyf0n af]0f08 h:tf Snf]g oSt of]ussf]sf/0fn] cf]hf]nf0{l]R5}g ug[Epsfn] 1

gf6 Mc6o ; xl pIt/ ny]df klG c^as lbg]

-v_ cTo6t 3g cfsfzlo j :t' h; sf]c; lldt u?Tj an xG5 To; nf0{sfnf] l5b] elG5 . 1

tf/f d08n	tf/fk'-h
(i) loglx;sf]lg]Zrt cfsf/ xG5 .	(i) loglx;sf]lg]Zrt cfsf/ xb6 .
(ii) loglx;sf]; ^a Vof 88 cf6f 5g\	(ii) loglx;sf]; ^a Vof 1011 xG5 .



Compulsory Science

Set - 2

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;

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Group A – Physics

1. -S_ u?Tj k] u eg\$[s]xf] < lxdfn / t/f0{lfqdlw]sg 7f5df u?Tj k] u\$[dfg a9l x65, lsg < lglZrt prf0af6 k[V]lsf]; txlt/ sg}}j :t'v; flbf b0{; \$]8 ; dokl5 pSt j :t'hldgdf k[lof]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 height and it reaches the ground after 2 seconds Calculate the height of that place.

- v_ gjls/0flo / cglj s/0flo prhf[ar b0{leGtf n[Vgxf] \ j fo' prhf[af6 s; /l lj b0t \pTkfbg ug{; lsg5 < 5f0s/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_ pmlj {fk eg\$[s]xf] < cfls[kdl8h / knj gsf]lgodlar b0{leGtf n[Vgxf] \ xf08k]ns k] sg l; b[wfctdf cfwfl/t 5 < pSt l; b[wfct sg cj :yfdf dfgo x65 < [0.5+2+0.5+0.5=3.5]

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

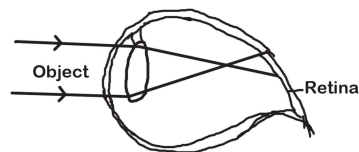
- v_ xf08k]d6/ eg\$[s]xf] < c08f -k]h_ zbW kfgldf 8A5 t/ gg kfglsf]; Gt[[t 3f]hdf pq65, lsg < Pp6f sf7sf]6j if (8cmx5cmx4cm) kfgldf /fvbf slt efu kfglleq x65 < -sf7sf] 3gTj = 800 kg/m² / kfglsf] 3gTj = 1000 kg/m³ \
- [0.5+1.5+2=4]

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/m³ and density of water = 1000kg/m³]

3. -S_ $Q = mc\Delta T$ $\frac{1}{2} \times 400 \times (90 - 20)$ 10000 J 10 kJ $[1+0.5+2=3.5]$

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 $\frac{1}{2}$ kg mass when it is heated from 20°C to 90°C ? The specific heat capacity of copper = $400 \text{ J/Kg}^\circ\text{C}$

- V_ $Q = mc\Delta T$ $\frac{1}{2} \times 400 \times (90 - 20)$ 10000 J 10 kJ $[1+1+0.5+1.5=4]$



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.

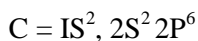
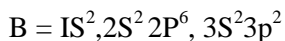
4. -S_ $P = VI$ 5×220 1100 W 11 kW $[1+0.5+2=3.5]$

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

- V_ $P = VI$ 5×220 1100 W 11 kW $[2+2=4]$

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_ $2, 8, 18, 32, 50, 72, 98, 126, 160, 198, 240, 288, 342, 400, 462, 528, 600, 676, 756, 840, 930, 1026, 1128, 1236, 1350, 1470, 1596, 1734, 1876, 2022, 2182, 2346, 2514, 2686, 2862, 3052, 3256, 3474, 3706, 3952, 4212, 4486, 4774, 5076, 5392, 5722, 6066, 6424, 6796, 7182, 7582, 8006, 8444, 8906, 9392, 9902, 10436, 11006, 11602, 12234, 12902, 13606, 14346, 15122, 15934, 16782, 17666, 18586, 19542, 20534, 21562, 22626, 23726, 24862, 26034, 27242, 28486, 29766, 31082, 32434, 33822, 35246, 36706, 38202, 39734, 41302, 42906, 44546, 46222, 47934, 49682, 51466, 53286, 55142, 57034, 58962, 60926, 62926, 64962, 67034, 69142, 71286, 73466, 75682, 77934, 80222, 82546, 84906, 87302, 89734, 92202, 94706, 97242, 99814, 102422, 105066, 107746, 110462, 113214, 116002, 118826, 121686, 124582, 127514, 130482, 133486, 136526, 139602, 142714, 145862, 149046, 152266, 155522, 158814, 162142, 165506, 168906, 172342, 175814, 179322, 182866, 186446, 190062, 193714, 197402, 201126, 204886, 208682, 212514, 216382, 220296, 224246, 228234, 232256, 236314, 240406, 244534, 248698, 252898, 257134, 261406, 265714, 270058, 274438, 278854, 283306, 287794, 292318, 296878, 301474, 306106, 310774, 315478, 320218, 324986, 329782, 334606, 339458, 344338, 349246, 354182, 359146, 364138, 369158, 374206, 379282, 384386, 389518, 394678, 399866, 405082, 410326, 415598, 420898, 426226, 431582, 436962, 442366, 447796, 453252, 458734, 464242, 469778, 475342, 480934, 486554, 492194, 497862, 503558, 509282, 515034, 520814, 526622, 532458, 538322, 544214, 550134, 556082, 562058, 568062, 574094, 580154, 586242, 592358, 598494, 604658, 610850, 617078, 623332, 629614, 635926, 642268, 648638, 655036, 661462, 667914, 674394, 680902, 687438, 693994, 700578, 707190, 713832, 720504, 727206, 733938, 740694, 747476, 754284, 761118, 767978, 774858, 781762, 788694, 795654, 802642, 809658, 816694, 823758, 830850, 837978, 845132, 852314, 859526, 866768, 874038, 881336, 888662, 896014, 903394, 910802, 918238, 925702, 933194, 940714, 948262, 955838, 963442, 971074, 978734, 986422, 994138, 1001882, 1009654, 1017454, 1025282, 1033138, 1041022, 1048934, 1056874, 1064842, 1072838, 1080862, 1088914, 1096994, 1105094, 1113222, 1121378, 1129562, 1137774, 1145914, 1154082, 1162278, 1170494, 1178738, 1186994, 1195272, 1203574, 1211894, 1220234, 1228594, 1236974, 1245374, 1253794, 1262234, 1270694, 1279174, 1287674, 1296194, 1304734, 1313294, 1321874, 1330474, 1339094, 1347734, 1356394, 1365074, 1373774, 1382494, 1391234, 1400004, 1408794, 1417604, 1426434, 1435284, 1444154, 1453044, 1461954, 1470884, 1479834, 1488804, 1497794, 1506804, 1515834, 1524884, 1533954, 1543044, 1552154, 1561284, 1570434, 1579604, 1588794, 1597994, 1607214, 1616454, 1625714, 1634994, 1644294, 1653614, 1662954, 1672314, 1681694, 1691094, 1700514, 1709954, 1719414, 1728894, 1738394, 1747914, 1757454, 1767014, 1776594, 1786194, 1795814, 1805454, 1815114, 1824794, 1834494, 1844214, 1853954, 1863714, 1873494, 1883294, 1893114, 1902954, 1912814, 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14843934, 14865954, 14887994, 14909954, 14931934, 14953934, 14975954, 14997994, 15019954, 15041934, 15063934, 15085954, 15107994, 15129954, 15151934, 15173934, 15195954, 15217994, 15239954, 15261934, 15283934, 15305954, 15327994, 15349954, 15371934, 15393934, 15415954, 15437994, 15459954, 15481934, 15503934, 15525954, 15547994, 15569954, 15591934, 15613934, 15635954, 15657994, 15679954, 15701934, 15723934, 15745954, 15767994, 15789954, 15811934, 15833934, 15855954, 15877994, 15899954, 15921934, 15943934, 15965954, 15987994, 16009954, 16031934, 16053934, 16075954, 16097994, 16119954, 16141934, 16163934, 16185954, 16207994, 16229954, 16251934, 16273934, 16295954, 16317994, 16339954, 16361934, 16383934, 16405954, 16427994, 16449954, 16471934, 16493934, 16515954, 16537994, 16559954, 16581934, 16603934, 16625954, 16647994, 16669954, 16691934, 16713934, 16735934, 16757954, 16779994, 16801934, 16823934, 16845954, 16867994, 16889954, 16911934, 16933934, 16955954, 16977994, 16999954, 17021934, 17043934, 17065954, 17087994, 17109954, 17131934, 17153934, 17175954, 17197994, 17219954, 17241934, 17263934, 17285954, 17307994, 17329954, 17351934, 17373934, 17395954, 17417994, 17439954, 17461934, 17483934, 17505954, 17527994, 17549954, 17571934, 17593934, 17615954, 17637994, 17659954, 17681934, 17703934, 17725954, 17747994, 17769954, 17791934, 17813934, 17835954,$



- i. A / C \rightarrow Write valiancy of element A and C.
 - ii. B \rightarrow Write the bolck of element B.
 - iii. A / B lar xg] /; folgs k]t]j }p]sf]; G]t]nt /; folgs ; d]s / 0f n]g]x]f] . Write Balance chemical equation of reaction between A and B.
- v_ l]n; }f]h]s]f]P]p]6]f] p]k]o]f]u]t]f] n]g]x]f] \ l]b]0]P]s]f]l]r]q]s]f] c]f]w] / d]f] t]n]s]f] k]z]g]s]f] p]t] / n]g]x]f] \ [0.5+0.5+1+1=3]

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

- i. l]o]f; h]f] / d]f] s]g] l]o]f; h]d]d]f] u]l] / P]s]f]]5 <
 Which gas is being collected in the gas jar?
 - ii. p]s]t] l]o]f; a]g]f]p]g] r]f]l]x]g] /; f]o]g]x]z]s]f]g]f]d] n]g]x]f] \
 Write the necessary chemicals required to prepare this gas.
 - iii. p]s]t] l]o]f; n]f]0] {s; / l] k] / l]f]o]f] u]g] {; l]s]g]5 < n]g]x]f] \
 How do we test this gas?
6. -S_ r]f]l]n]s]f]k]f]0] / f]o]6]a]f]6] s]g] w]f]t]' k]f]0]g]5 < w]f]p]m] / l]d]n]j]n]d]f] k]f]0]g]P]s] l]e]g]t]f] n]g]x]f] \
 . r]f]l]n] u]f]9]f] ; N]S]o]l] / s] P]l; 8; E] /; folgs k]t]j] }p]f] u]b]f] { s] a]g]5 < ; G]t]nt /; folgs ; d]s / 0f; l]x]t] n]g]x]f] \ [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]l]6] l]s]N]a]s] / n]f]0] {k]l] / e]f]l]i]f]t] u]g]x]f] \ k] / s]s] / s]f]l]a]8] a]s]h]f]o]6]a]f]6] a]g]f]0]g]5, l]s]g] < ; f]a]g]s]f]P]p]6]f] p]b]f]x] / 0f] n]g]x]f] \ l]8]l]8]6]l]s]f]k]o]f]u] H]o]f]b]x]f]l]g]s]f] / s] x]g]5, l]s]g] < [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_ e]f]0] /; e]g]s]f]x]x]f] < x]f]B] / f]u] s]g] e]f]0] /; s]f]s]f] / 0f]n]n]f]l]5 < / u]t]s]f]s]g]b]0] {c]f]o]f] s]f]d]x]z] n]g]x]f] \ [1+0.5+2=3.5]

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

-v_ csfDo lj rpf eg\$[s]xf] < PShf] r0g / 0G8fj r0g u(ylxz df sg)b0{cf\$ legtfxz nVgxf] \ ; b0vl kmh rxlsnf]3fdlt/ kmsg' sg ksf/sf]6dfIS ; 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_ ldofl] ; sf]f lj efhg eg\$[s]xf] < lb0Psf]lrqsf cfwf/df df06fl] ; sf]sg cj :yf b]vfpq vflhPsf]xf] < pSt cj :yfsf b0{cf\$ kl/j tgz nVgxf] \ df06fl] ; sf]f lj efhg\$]b0{dxTj xz nVgxf] \ [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_ dylgs khgg\$ b0{cf\$ lj z]rtfxz nVgxf] \ cN6/g] g ckmhg]] g eg\$[s] xf] < Rofpsf]dxTj nVgxf] \ [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 ;]f]d' f (bb) lar k/khgg\w/fp\$ klxnf]j zdf sfnf d' f dfq b]v k/] lsg < tl sfnf d' fxz lar :j khgg\w/fp\$ bf] fl]j zdf sfnf d' f / ;]f d' fsf] kmf\$0k cgkft tyf lhgf\$0k cgkft nVgxf] \ . cf/PgPdf kf0gf] b0{cf\$ gf06hg a] sf]gfd / l8PgPsf]Ps sfo{nVgxf] \ . [1+0.5+2=3.5]

When pure Black rat (BB) and Pure White rat (bb) are crossed reproduced all black rats appeared in F₁ generation, why? What will be the phenotype and genotype ratio when they are self reproduced in F₂ generation? Write the name of two nitrogen bases in RNA and one function of DNA.

-v_ lap / k/fu ;]g klj rpf sf cfwf/df ; Nnf]/ ; Ntnflar km/s nVgxf] \ ; krf0{ sh Snf; df /flvPsf]5 < rp/sf]kl/l:y]ts kbW]tdf kf0g] b0{cf\$ ch]j s tTj / Pp\$ h]j s tTj sf]gfd nVgxf] \ [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[V]lsf]pTklTtaf/]n]nf; sf]kl/sllkgf ; ^aN]kdf n[V]gxf] \ . 8f0gf] / / dflg; sf] pTklTt ePsf sfnsf]gfd n[V]gxf] \ xl/t u{x kēfj sf sg}b0{cfōf aknf0bfx; n[V]gxf] \ [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_ ; fō{d08n egšf]s]xf]< tf/f d08n / tf/fk'-h lar sg}b0{leGgtfx; n[V]gxf] \ . [1+2=3]

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

Marking Scheme

Set 2

1. -s_ sg}ux tyf pku{xsf]; txlt/ :j tGq k]š vl; /xšf]j :tdf to; sf]u?Tj ann] ubf{pTkgg xg]k]ūnf0{u?Tj k]ū elG65 . [1]

t/f0{lfōsf]u?Tj k]ūsf]dfg a9l xG5 . [0.5]

lsgeg]u?Tj k]ūsf]dfg cw]of; / prf0sf]of]ukmsf]j u{ G JoTj pdfgflts xG5 / t/f0šf]prf0 lxdfnl lfōsf]eGbf sd ePsf]u?Tj k]ū a9l xG5 . [1]

oxfF ; ?sf]ult (u) = 0 m/s

k]ū (g) = 9.8m/s²

; do (t) = 2 s

prf0 (h) = ?

; ō h= ut+ 1/2gt² [0.5]

or h=0x2+ 1/2 x9.8 x (2)²

= 19.6m [1.5]

∴ prf0 (h) = 19.6m

-gfō MPsf0 gny]ōf 0.5 36fpg]

-v_ gjls/0flo prhf{/ cgjls/0flo prhf[ar leGgtfx;

	gjls/0flo prhf{		cgjls/0flo prhf{
-s_	kōf] ub]hfōf gl/Itg]/ sd ; dodf kgMlgdfōf ug{; lsG5 .	-s_	kōf] ub]hfōf l/IQb}hfg]/ kgMlgdfōf ug{nfvf]j if{nfU5 .
-v_	a9l kōf]un]phf{; š6 b/ xG5 .	-v_	a9l kōf]un]phf{; š6 lgs6

			elj iodf cfp5 .
--	--	--	-----------------

j f o:t}ldNbf]b0{km/s nlydf [2]

xfjf rNg]7fpdf k^av h8fg ugI/ k^avfnf0{6j f0gdf hf8] h9]76/ rnfpdf
lj b8t\pTkfbg x65 . [1]

2. -s_ sg]j :thf0{t/n jf Uof; df /Vbf j :thf0{dflylt/ ws]lg]kl/df0ffTds annf0{
pnlj {fk elg65 .

-s_ cfls[dl8hsf]l; bWfGt t/n / Uof; bj df nfu' x65 .	-s_ knjgsf]l; bWfGt t/n kbfydf dfq nfu' x65 .
cfls[dl8hsf]l; bWfGt pnlj {fk Ö lj :yflkt t/nsf]tfh x65 .	knj sf]l; bWfGt pqg]j :tsf]tfh Ö lj :yflkt t/sf] tfh x65 .

j f o:t}ldNg]b0{km/s nlydf [2]

- xf08]ns k] kf:snsf]lgoddf cfwf/t 5 . [0.5]
- pSt lgod 3ifdf z6o / grlxg]cj :yfdf df6o x65 . [0.5]
- v_ - t/n kbfydf]3gTj gfk]pks/0fnf0{xf08]d6/ elg65 . [0.5]
- ktnsf]3gTj zbW kfglsf]3gTj e6bf a9l xg]ePsf]of]zbW kfgldf xA5 t/
ktnsf]3gTj ggkfglsf]3gTj e6bf sd xg]ePsf]ktn ggkfgldf t]65 . [1.5]

$$\begin{aligned} \text{oxf} \quad \text{sf7sf]cfotg} \quad (v) &= 8\text{cm} \times 5\text{cm} \times 4\text{cm} \\ &= 160\text{cm}^3 \\ &= 0.00016\text{m}^3 \end{aligned}$$

$$\begin{aligned} \text{sf7sf]lk08} \quad (m) &= 3\text{gTj} \quad (x) \quad \text{cfotg} \quad (v) \\ &= 800 \times 0.00016 \\ &= 0.128\text{kg} \end{aligned}$$

$$\text{lj :yflkt kfglsf]cfotg} = \frac{\text{sf7sf]lk08}}{\text{kfglsf]3gTj}}$$

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

$$= 0.000128 \text{ m}^3 \quad [1]$$

$$\begin{aligned} \text{sf7sf]kfglleqs]efu} &= \frac{\text{lj :yflkt kfglsf]cfotg}}{\text{sf7sf]cfotg}} \end{aligned}$$

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

3. -s_ - j : t s f] l k 0 8 / c 0 f x _ z s f] u l t z l s t d f j : t s f] t f k z l s t e / k 5 {
 - t f k z l s t s f] c g s P s f 0 S o f n f] l x f] .

$$\text{oxfF l k 0 8 (m)} = \frac{1}{2} \text{ kg} = 0.5 \text{ kg}$$

$$\text{t f d f s f] l j = t f = w f = z = (s)} = 400 \text{ j/kg}^\circ\text{c}$$

$$\text{t f k j } \mu \text{ d s f] km/s (dt)} = 90^\circ\text{c}$$

$$= 70^\circ\text{c}$$

t f k s f] k l / d f 0 f \ddot{O} <

$$\text{t f k ; d l s / 0 f, Q} = m \times s \times dt \quad [1]$$

$$= 0.5 \times 400 \times 70$$

$$= 14000 \text{ j electricity} \quad [1]$$

P s f 0 g n y d f 0.5 3 6 f p g]

- v_ - n l ; s f] k m f s ; k b f 0 f k g] u / l : k i 6 c f s [t b l v g] u / l l d n f p g ' j f k b f { / n l ; s f]
 b / l l d n f p g ' e l g 6 5 . \quad [1]

$$\text{- j : t h f 0 } \{ 2 F \text{ (center of curvature) d f / f l v g k 5 } \} . \quad [1]$$

$$\text{- c b / b l i 6 s f] s d h f] l x f] . \quad [0.5]$$

$$\text{- p s t s d h f] l x 6 f p g s 6 s e n y ; s f] k o f u u g k 5 } \{ . \quad [0.5]$$

4. -s_ - l j b \grave{a} t z l s t n f 0 { t f k z l s t d f _ k f g t / 0 f u g] k l j \mu p f n f 0 { l j b \grave{a} t s f] t f k c ; /
 e l g 6 5 .

- p k s / 0 f s f] g f d - l j b \grave{a} t \setminus x 6 /

- o x f F

pks/0f	; a \ v o f	h \ d f ; f d y y {
j \ N j 60w	5	5x60=3000w
l x 6 / 750w	2	2x750=1500w
: q l 1kw	1	1x1000=1000w
		h : d f = 2800w

$$\text{e f l i 6 h (v)} = 220\text{v}$$

$$\text{l j b \grave{a} t w f / f I} = \frac{P}{V} = \frac{2800}{220\text{v}} = 12.72 \text{ A} \quad [1]$$

$$\text{t ; y } \{ \text{c f j Z o s } \hat{\text{ohs f] l f d t f 15 x 6 5 .} \quad [0.5]$$

-v_ -

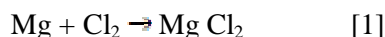
hḡḗ/	lj bāt\df/
!= hḡḗ/n]oflḡs zIStnf0{lj bāt\ zIStdf ḡkḡt/Of u5{	!= o; n]lj bāt\zIStnf0{oflḡs zIStdf ḡkḡt/Of u5{.
@= of]knf/f8ḡf]lj bāt\rdaslo pīkfbg l; bḡḡtdf cfwfl/t xḡ5 .	@= of]df/ c; /sf]l; bḡḡtdf cfwfl/t xḡ5 .

5. -s_ .tIj xḡn]ef]ts / /f; folgs u0fxḡ ltglxḡsf]kf/df0f]j s ef/sf]k]l/ofḡs sfo{
:j ḡk xḡ5ḡ .

i) A sf]; ḡHotf =2 / c sf]; ḡHotf =0 nḡḡdf [1]

ii) P – Ans nḡḡdf [1]

iii) A+B₂ → AB₂



-v_ - llḡ; ḡf]ḡ lḡ7f0 ulnof]agfpg, 5fnf knḡḡaf6 hf]ḡfpg kḡf]ḡ ul/ḡ5 jf o:t}
sg]Ps nḡḡdf [0.5]

1) Pdf]ḡof llof; nḡḡdf [0.5]

2) NH₄Cl / Ca (OH)₂ nḡḡdf [1]

3) lehḡf]/ftf]ln6d; k]k/ llof; hf/df /fv l k/lifof ul/ḡ5 egl nḡḡdf [1]

6. -s_ - tdf nḡḡdf

- wfpmdf wftsf]dfqf leḡḡ ; Dej xḡ]u/l a9l xḡ5 t/ lḡḡ]ndf pInḡḡḡlo
wftsf]dfqf xḡḡ . [1]



(Balanced u/ḡf)

-v_ - SoflN; od Pnldḡḡ / SoflN; od l; Inḡḡsf]ld>0fsf /ftf l9sfxḡ ḡḡ

!^))°C tfkj]ḡdsf]oxlaf6 v:5ḡ\eg]o; nf0{[Sn^as/ elḡḡ5 . [1]

- j ḡḡḡ06 ttfpḡf kḡḡ g/d gxḡ]Ps lsl; dsf]ydf} ḡ^a knfl:6s ePsf]
xḡḡn]egl nḡḡdf [1.5]

- ; flḡod l:6/ḡ nḡḡdf [0.5] jf cḡo sg]Ps nḡḡdf [0.5]

- DDT sf]kḡf]ḡ ubf{kḡf]ḡ / jḡ:kltdf hḡdf xḡ5 ḡḡ kḡf]ḡ / jḡ:kltsf]
kḡf]ḡ xḡ5 ; ḡḡ kḡf]ḡnf0{kḡḡ 3fts xḡ5 / nḡdf / lauf]c; /xḡ, h:t}M

dflg; nf0{Sof6; /, df5fx₂sf]j 6nw 36g]r/fx₂n]knh sd kfg] knhsf] af] ff kftnf]xg]/ jftfj /ofdf kf]s[ts ; 6thg lau65 .

7.-s_ - ef0/; cto6t}; Id hlj f0f'xf]hg k0f{₂kdf hlj t j :tdf cfl>t x65 [1.5]

- xf8]/fj kf/flDShf]ef0/; (Paramyxo Virus) n]nflb5 egl n_ydf [0.5]

- /utsf b0{sf0₂

!= kl/j xg (Transportation)

@= ; /lff (Protection)

#= lgo6q0f (Regulation)

sg)b0{n_ydf [1]

-v_ - xdf]z/l/sf]sg}c^aun]sg]stimulus sf]pkl:yltdf Automatic ₂kdf

tIsfn b_yfpq]kltlj pofnf0{csfDo lj pof elg65 . [1]

PShf] ff0g Unf68	0G8f] ff0g Unf68
!= gnloSt x65 .	!= gnl lj xlg x65 .
@= o; n]0Ghf0d pTkfbg u5{.	@= xdf]nf0{l; w _y /ut gnldf k _y ofp5 .

o:t}sg)b0{le6gtf n_ydf [2]

; sf/lds kn6f]6df]s; ; n_ydf [1]

8. -s_ - ; 6tfg pTkfbgsf nflu z/l/sf]khhgg c^ausf sf]fx₂df dfq xg]Pp6f sf]f

6lj p/ rf/ c6f a6g]vfnf]sf]f lj efhgnf0{ldcfl]; ; sf]f lj efhg elg65 jf

o:t}ldNg]kl/efiff n_ydf [0.5]

- d6fk]h cj :yf n_ydf [0.5]

!= 6o]sno/ d]ag lanfP/ hf65 .

@= j ff]fl68x₂ sf]f]sf]dWbefudf u0{ldn] /x65g\ jf o:t}ldNg]b0{kl/j t6x₂

n_ydf [2]

- != o; n]z/l/sf]j 6nw / lj sf; x65 .

@= j zf0fut l:y/tf sfod /fv5 .

#= cd_ylgs khggdf dbt u5{.

jf o:t}ldNg]b0{dxTj x₂ n_ydf [0.5x2=1]

-v_

- hlj x₂sf]; ^avofdf j 6nw x65 .

- hlj x₂ sf]j z sfod /xG5 .
 jf o:t}b0{lj z]ftfx₂ n]y₂df [2]
 plgpsf]hlj g rj]tdf :kf]f]k]f06 / Uofdf]f]k]f06 hg]j] g Pskl5 csf]cf0/xG5 .
 o; nf0{cN6/g} g ckm hg]j] g elgG5 .
 kZ:t k]f]k]g, le6fldg / vlgh kf0G5 . d6/f]u, lrgl/f]u lgoGqof xG5 . o:t}ldNg]
 knf0bfx₂ n]y₂df [0.5]

9. -s₋ - sfnf]xg]uof k_{an} uof ePsf] / sg]hf]f k_{m/s} uof ePsf hlj x₂lar
 k/khgg\x₂ k]xnf]k':tdf k_{an} uof dfq b]lv]ePsf]n]y₂df [1]

- bf] f]j zsf]lkmg]f0k / lhgf]f0j sf]cgkft 3:1 / 1:2:1 n]y₂df [0.5]
- Adenine guanine, cytosine and Uracil dWb]sg]b0{n]y₂df [2x0.5=1]
- DNA n]j zfofut uof ; fg{dbt u5{egl n]y₂df [1]

-V₋

; Nnf]	; Gtnf
!= lap kinn]9flsPsf]x ₂ g .	!= lap kmleq 9flsPsf]x ₂ G5 .
@= xfj faf6 dfq k/fu ; j]g xG5 .	@= xfj faf ₂ cGo dflWdaf6 klq k/fu ; j]g xG5 .

egl n]y₂df [1]

- ; k\$]Snf; - /k6lnof (Reptilian) n]y₂df [0.5]
 - df6f](Soil) k\$z (Light) kfgl (Moisture) tfk (heat) dWb]sg]b0{ch]j s
 tTj x₂ n]y₂df [2x0.5=1]
 - xl/of la?j fx₂, hlj x₂ dWb]Ps h]j s tTj n]y₂df [0.5]
10. -s₋ - cfszdf km]nPsf whsf s0fx₂larsf]u?j] fsif]fn]ubf{Pscsf{ G 7Ss/
 vfg]j]td rln/x₂ k]j]nufot lj leGg ux tyf pkux₂ ag\$₂ xg\ [1.5]
 8f0gf] / - 6of] ; s sfn
 dflg; - clt g'tg sfn [2x0.5=1]
- xl/t ux k_{efj} sf b0{ak]mf0bfx₂
 != k]j]lsf]tkj]tdf j]Nw xG5 .
 @= lxdfnsf]l]xp kllnbf ; fdlb\$ lsgf/fsf b]z x₂ 8Ag ; Sg]vt/f xG5 .
 jf cGo ldNg]sg]b0{ak]mf0bfx₂ n]y₂df [2x1=2]

-v_ ; b{/ o; sf]j|/kl/ 3Dg]u\kx, pkukx, lzz'u\kx, p\tsfx wd\\$\kx
 0Toflbsf]; dxnf0{; f\{d08n elg65 . [1]

tf/f d08n	tf/fk'-h
!= loglx; lglZrt cfsf/ agf0{ ; dxdf /x\\$\ x65g\	!= loglx; lglZrt cfsf/df /xsf]x65g\
@= o; df s\l tf/fx; -** _ x65g\	@= o; df cglu6tl -s/f\\$\ tf/fx; x65g\

jf o:t}b0{km/sx; n\df [1]

; dfkt