छत्तीसगढ़ माध्यमिक शिक्षा मण्डल, रायपुर

foKku

d{kk X

lEiy i'u&i=

¼fo|kfpr bdkb½

NÙkhlx< ek/;fed f'k{kk e.My] jk;iqj

i'u & i= dh ;ktuk

Scheme of Question Paper

fo"k;%& foKku

i.kkd % 75

le; % 3 ?kV

ijh{kk % gkb Ldy

¼v½ 'k{kf.kd mnn'; d vuqlkj eku

(A) Weightage as per Educational objective:

lo Ø0	mnn';		vad	izfr'kr
1-	Kku (Knowledge)		28	37-4%
2-	vock/k (Understanding)		32	42-6%
3-	vuqi;kx ,o dk'ky (Application & Skill)		15	20%
		;kx	50	100%

¼c½ bdkbokj vadk dk eku

lo Ø0	bdkbZ dk uke	bdkbZ ij vkcfVr vad	i'u&i= d ik:i vuqlkj vkcfVr vad
1-	jklk;fud vfHkfØ;k, ,oa	09	09
	egRoiw.k jklk;fud ;kSfxd		
2-	izkÑfrd lalk/ku	15	15
3-	mtkZ d Jksr	04	04
4-	idk'k& fo|qr&pEcdRo	22	22
5-	tho ifØ;k,a	21	21
6-	gekjk i;koj.k	04	04
7-			
8-			
9-			
10-			
11-			
12-			

¼l½ dfBukbZ Lrj (Difficulty Level)

lO ØO	mnn';	vd	ifr'kr
1-	ljy (Easy)	28	37-4%
2-	vkSlr (Average)	32	42-6%
3-	dfBu (Difficult)	15	20-0%
	;kx	75	100%

¼n½ i'ui= fn'kk fun'k ,oa fodYi ;kstuk %&

(Instruction's & Scheme of Option for Question Paper)

- oLrfu"B i'u e ¼05½ cgfodYih; i'u rFkk ¼05½ fjDr LFkku dh ifr@mfpr tkMh cuk, dk i'u fn;k tkoxk vkj ;g iR;d lV e i'u Øekd 1 gkxk A
- iR;d lV e 1] 2 ,oa 3 vdk d i'uk e fHkUurk jgxh A leLr 04 vd ;k bll vf/kd vdk d y?kmÙkjh; rFkk nh?kmÙkjh; i'uk e fodYi fn;k tkuk g A fodYi i'u mlh bdkbZ l rFkk leku mnn';k d jgx A 04 vd ;k bll vf/kd vdk d i'u iR;d lV e ,d leku jgx A
- vf/kdre mÙkj lhek vfry?kmÙkjh; ½2 vd@30 'kCn½ ¼3 vd@50 'kCn½
  y?kmÙkjh; ¼4 vd@75 'kCn½ ¼5 vd@150 'kCn½
  nh?kmÙkjh; ¼6 vd ;k vf/kd@250 'kCn½

i'u & i= dk CyfiUV

Blue Print of Question Paper

fo"k;&& foKku i.kkd & 75

le; & 3 ?kV

ijh{kk & gkbLdy

bdkbl-Ø-	bdkb	bdkb ij vkcfVr vd	vdokj i'u							dy i'u
			1 vd	2 vd	3 vd	4 vd	5 vd	6 vd	6 vd ;k bl l vf/kd	
1	jkl k;fud vfHkfØ;k, ,o egRoi.k jkl k-;kfxd	09	02	&	01	01	&	&	&	2 $ 4
2	ikÑfrd l lk/ku	15	01	01	01	01	01	&	&	1 $ 4
3	mtk d Jkr	04	01	&	01	&	&	&	&	1 $ 1
4	idk'k&fo|r&pEcdRo	22	03	02	&	01	01	01	&	3 $ 5
5	to ifØ;k,	21	02	02	&	01	01	01	&	2 $ 5
6	gekjk i;koj.k	04	01	&	01	&	&	&	&	1 $ 1
7										
8										
9										
10										
11										
12										
	;kx	75	10	5	4	4	3	2	&	10$18

Set - A

gkb Ldy lfVfQdV ijh{kk

High School Certificate Examination

lEiy&i'u i=

SAMPLE PAPER

fo"k; %& (Subject) - foKku **le; 3 ?k.Vk (Time- 3 Hrs)**

d{kk %& (Class) - nloh **i.kZd 75 (M.M.)**

(Instruction) & ¼fun'kZ½

1- lHkh i'u gy djuk vfuok;Z g A

Attempt all the Question

2- i'u Øekd 01 e 10 vad fu/kkfjr g A nk mi[k.M g A [k.M ^^v** e 05 cgfodYih; i'u rFkk [k.M ^^c** e 05 fjDr LFkkuk dh ifr vFkok mfpr lc/k tkfM, A iR;d i'u d fy, 1 vad vkcfVr g A

Q. No. 01 Carries 10 Marks. There are two sub-section, Section A is Multiple choice carries 05 marks and section B is fill in the blanks or match the column carries 05 marks.

3- i'u Øekd 02 l i'u Øekd 06 rd vfr y?kqRrjh; i'u g A iR;d i'u ij 02 vad vkcfVr g A mRrj dh vf/kdre 'kCn lhek 30 'kCn A

Q. No. 2 to 06 are very short answer type question & it carries 02 marks each. Word limit is maximum 30.

4- i'u Øekd 07 l i'u Øekd 10 rd y?kqRrjh; i'u g A iR;d i'u ij 03 vad vkcfVr g A mRrj dh vf/kdre 'kCn lhek 50 'kCn A

Q. No. 07 to 10 are short answer type question & it carries 03 marks each. Word limit is maximum 50.

5- i'u Øekd 11 l i'u Øekd 14 rd y?kqRrjh; i'u g A iR;d i'u e vkrfjd fodYi g vkj iR;d i'u ij 04 vad vkcfVr g A mRrj dh vf/kdre 'kCn lhek 75 'kCn A

Q. No. 11 to 14 are short answer type question & it carries 04 marks each. Each question has internal choice. Word limit is maximum 75.

6- i'u Øekd 15 l i'u Øekd 17 rd nh?kmRrjh; i'u g A iR;d i'u e vkrfjd fodYi g vkj iR;d i'u ij 05 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 100 'kCn A

Q. No. 15 to 17 are long answer type question & it carries 05 marks each. Each question has internal choice. Word limit is maximum 100.

7- i'u Øekd 18 l i'u Øekd 19 rd nh?kmRrjh; i'u g A iR;d i'u e vkrfjd fodYi g vkj iR;d i'u ij 06 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 150 'kCn A

Q. No. 18 to 19 are long answer type question & it carries 06 marks each. Each question has internal choice. Word limit is maximum 150.

Ik'Uk&1 ¼v½ Lkgh f0kdYIk PkUkdj fYkf[k,& IkR,kd d fYk, 1 vd 1×5 = 5

(i) Xkgj UkhYk jx dk dkPk CkUkkUk d fYk, fdLk ,kkfXkd dk mIk,kkXk fd,kk TkkRkk gA

(a) D,kIkLk vkDlkbM (b) EkXkUkhTk vkDLkkbM

(c) dMfEk,kEk LkYQkbM (d) dkCkkYV vkDLkkbM

(ii) $\frac{N}{1000}$ HCl f0kYk,kUk dk pH EkkUk gkRkk g&

(a) 1 (b) 2

(c) 3 (d) 4

(iii) ,d RkR0k dk bYkDVkfUkd f0kU,kkLk 2]8]1 gA ,kg RkR0k gkXkk &

(a) {kkjh,k /kkRk (b) {kkjh,k Eknk /kkRk

(c) p&CYkkd RkR0k (d) d&CYkkd RkR0k

(iv) j[kh,k vk0k/kUk dgYkkRkk g&

(a) $\frac{\text{0kLRk dh YkCkkb}}{\text{IkfRkfCkECk dh YkCkkb}}$ (b) $\frac{\text{IkfRkfCkECk dh YkCkkb}}{\text{0kLRk dh YkCkkb}}$

(c) $\frac{\text{,d IkfRkfCkECk dh YkCkkb}}{\text{nLkj IkfRkfCkCk dh YkCkkb}}$ (d) mIkjkDRk Ek Lk dkb UkghA

(v) Lkkj ÅTkk fUkEUk fYkf[kRk Ek Lk fdLkd dkj.k g&

(a) LkYk,kUk vfHkfØ,kk (a) f0k[kMUk vfHkfØ,kk

(c) (a) ,0k (b) nkUkk vfHkfØ,kk (d) mIkjkDRk Ek Lk dkb UkghA

Que1 (A) Choose the correct option and answer. Each question carries 1 marks.

(i) Which compound is used for providing dark blue colour to glass-

(a) Cuprous oxide (b) Manganes oxide

(c) Cadmium sulphide (d) Cobalt oxide

(ii) The pH value of $\frac{N}{1000}$ HCl solution is -

(a) 1 (b) 2

(c) 3 (d) 4

(iii) The electronic configuration of an element is 2, 8, 1. The element is -

(a) alkaline metal (b) alkaline earth metal

(c) p-block element (d) d-block element

(iv) Linear magnification is

(a) $\frac{\text{Length of object}}{\text{Length of image}}$ (b) $\frac{\text{Length of image}}{\text{Length of object}}$

(c) $\frac{\text{Length of one image}}{\text{Length of other image}}$ (d) None of the above

(v) The source of energy in the sun is due to -

(a) fusion reaction (a) fission reaction

(c) (a) and (b) both (d) None of the above

¼c½ fjDRk LFkkUkk dh IkfRk dhfTk, &IkR¸kd d fYk, & 1 vd

(i) fdLkh PkkYkd Rkkj Ek f0k|Rk /kkjk Ik0kkfgRk djUk Ikj mLkd UkTknhd &&&& mRIkUUk gkRkk gA

(ii) ,d PkECkd d RkhUk VdM djUk Ikj IkR¸kd VdM Ek &&&&&mIkfLFkRk jgRk gA

(iii) EkkUk0k Ek mIkfLFkRk ¸kÑRk LkCkLk CkMh IkkPkd XkfFk g fTkLkdk 0kTkUk &&&& gkRkk gA

(iv) jkf«k Ek iMk }kjk 'Ok LkUk Ek NkMh Xkb &&&&dk mIk¸kkXk Ikdk'k Lk'Yk"k.k Ek Ukgh gk IkkRkk gA

(v) 0k IknkFk ¸kk dkjd fTkUkd dkj.k Ikn"k.k gkRkk g&&&&&dgYkkRk gA

(B) Fill in the blanks - (Each one carries one marks)

(i) When current passes through a conducting wire ..... is produced near it.

(ii) When a magnet is broken into three pieces, every piece contains .....

(iii) Liver, the largest digestive gland present in a human being weighs .....

(iv) At night the ..... released by trees during respiration is not utilised in photosynthesis.

(v) The materials or factors which cause pollution are called ..... .

Ik'Uk&2 HkTkUk dk IkfjHkkf"kRk dhfTk, A 2 vd

Define Roasing.

Ik'Uk&3 Ikjk0kRkUk d nk fUk¸kEk fYkf[k,A 1$1 vd

Write the two laws of reflection.

Ik'Uk&4 Ckfg"dj.k dk Ikfjhkkf"kRk dhfTk,A 2 vd

Define egestion.

Ik'Uk&5 10Ω d 5 IkfRkjk/kk dk LkkEkkURkj ØEk Ek TkkMUk Ikj mRIkUUk Ikfj.kkEkh IkfRkjk/k dh Xk.kUkk dhfTk, A Lk«k& 1 vd] Xk.kUkk & 1 vd

If five resistances each of resistance 10 ohm in series, find out the resultant resistance.

Ik'Uk&6 ROkPkh¸k 'OkLkUk dk LIk"V dhfTk, A 2vd

Explain cutaneous respiration.

Ik'Uk&7 /OkUkh Ikn"k.k d RkhUk dkj.k fYkf[k,A ¼1$1$1½

Give three causes of sound pollution.

Ik'Uk&8 D¸kk gkRkk g TkCkfd & ¼dOkYk jkLkk¸kfUkd LkEkhdj.k fYkf[k, ½A ¼1$1$1½

(i) Na /kkRk BM TkYk Lk fØ¸kk djRkh g A

(ii) $CaCO_3$ dk XkEk fd¸kk TkkRkk gA

(iii) N_2 vkj H_2 dh vfHkfØ¸kk gkRkh gA

What happens when - (Give only chemical equation)

(i) Na metal reacts with cold water.

(ii) $CaCO_3$ is heated.

(iii) N_2 and H_2 react with each other.

Ik'Uk&9 v¸kLd vkj [kfUkTk Ek RkhUk vRkj fYkf[k, A ¼1$1$1½

Write three differences between ore and minerals.

lk'Uk&10 LkkYkj LkYk lkUkYk dk d0kYk UkkEkkfdRk fPk«k CkUkkb¸kA ¼1½ $ 1½½

Draw a labelled diagram of solar cell panel.

lk'Uk&11 vfHkfØ¸kk nj dk lkHkkf0kRk djUk 0kkYk Pkkj dkjdk dk o.ku dhft , A ¼1$1$1$1½

Give four factors that affect the rate of reaction.

¼vFkOkk½

jkLkk¸kfUkd LkkE¸k d Pkkj lkEk[k Yk{k.k fYkf[k, A ¼1$1$1$1½

Give four main characteristics of chemcial equilibrium.

lk'Uk&12 ,fLkfVd vEYk fUkEkk.k dh 'kh?k fLkjdk f0kf/k dk fUkEUkkfdRk 'kh"kdk Ek 0k.kUk dhfTk,A

(i) vfHkfØ¸kk dk jkLkk¸kfUkd LkEkhdj.kA 1 vd

(ii) lk¸kkXk f0kf/k Lk{klk Ek A 2 vd

(iii) ,fLkfVd vEYk dh NH_4OH Lk vfHkfØ¸kk dk d0kYk LkEkhdj.kA 1 vd

Describe the quick Vinegar process of manufacture of acetic acid on the headings given below.

(i) Chemical equation of the reaction.

(ii) Laboratory method in brief.

(iii) Chemical equation for the reaction of acetic acid with NH_4OH.

¼vFkOkk½

,fFkYk ,Ydkgk Yk fUkEkk.k dh fd.oUk f0kf/k dk 0k.kUk fUkEUkkfdRk 'kh"kdk d vRkXkRk dhfTk,A

(i) vfHkfØ;kk dk jkLkk;fud LkEkhdj.k & 1 vd

(ii) f0kf/k dk Lk{kIk Ek 0k.kUk & 2 vd

(iii) ,fFkYk ,Ydkgkyk dh Na /kkRk Lk vfHkfØ;kk dk LkEkhdj.k A 1 vd

Describe the fermentation method for the manufcture of ethyl alcohol under the following headings.

(i) Chemical equation of the reaction.

(ii) Brief description of the process.

(iii) Chemical equation for the reaction of ethyl alcohol and Na Metal.

Ik'Uk&13 PkECkdR0k d fYk, dYkkEk dk 0;kRØEk 0kXk dk fUk;kEk fYk[kdj ,dkd /k0k dk LkEkÖkkb;k A ¼3$1½

Write the Coulomb's inverse square law of magnetism and explain unit pole.

¼vFk0kk½

fLk) dhfTk, %& $V = H \tan\theta$ ¼2$2½

$$I^2 = H^2 + V^2$$

Tkgk θ ¾ UkEk.k dk.k

I ¾ lkF0kh dh LkIk.k Rkh0kRkk

H ¾ lkF0kh dh {kfRkTk ?kVd

V ¾ m/0kk/kj ?kVd gA

Prove that :- $V = H \tan\theta$ ¼2$2½

$$I^2 = H^2 + V^2$$

Where θ = Angle of declination.

I = Total intensity of earth's magnetic field

H = Horizontal component of earth's magnetic field

V = Vertical component.

Ik'Uk&14 : f/kj d fdUgh Pkkj dk¸kk dk Ok.kUk dhfTk,A ¼1$1$1$1½

Describe any four functions of blood.

¼vFkOkk½

YkLkhdk d fdUgh Pkkj dk¸kk dk Ok.kUk dhfTk,A ¼1$1$1$1½

Describe any four functions of lymph.

Ik'Uk&15 CkgYkd fdLk dgRk g\ IkkÑfRkd ,Ok Lk'Ykf"kRk CkgYkd d nk&nk mnkgj.k ndj LkEkÖkkb¸kA ¼1$1$1$1$1½

What are polymers? Explain giving two examples for each natural and synthetic polymers.

¼vFkOkk½

P.V.C. dk Ikjk UkkEk vkj Lk«k fYk[kdj bLkd RkhUk Xk.k fYkf[k,A

Write the full name and formula of P.V.C. and give three properties of it.

Ik'Uk&16 vkDLkh'OkLkUk ,Ok vUkkDLkh 'OkLkUk Ek IkkPk vRkj fYkf[k,A ¼1$1$1$1$1½

Give five differences between aerobic and anaerobic respiration.

¼vFkOkk½

'OkkLkkPNOkkLk ,Ok 'OkLkUk Ek IkkPk vRkj fYkf[k,A ¼1$1$1$1$1½

Give five differences between breathing and respiration.

Ik'Uk&17 Ik¸kkXk 'kkYkk Ek v0kRkYk nIk.k dh Qkd l njh KkRk djUk dh ,o fIkUk f0kf/k dh Ik¸kkXk dk 0k.kUk fUkEUkkfdRk 'kh"kdk d vRkXkRk dhfTk,A

(i) fLk)kRk (ii) UkkEkkfdRk j[kkfPk«k (iii) v0kYkkdUk Lkkfj.khA ¼1$2$2½

Describe the single pin method to find out the focal length of a concave mirror on the following headings -

(i) Theory (ii) Labelled diagram (iii) Observation table.

¼vFkOkk½

Ik¸kkXk'kkYkk Ek dkPk d vk¸kRkkdkj XkVd dk vIk0kRkUkkd KkRk djUk d Ik¸kkXk dk 0k.kUk fUkEUkkfdRk 'kh"kdk d vURkXkRk dhfTk,A ¼1$2$2½

(i) fLk)kRk (ii) UkkEkkfdRk j[kkfPk«k (iii) v0kYkkdUk Lkkfj.kh

Explain the determination of refractive index of a glass slab in the laboratory on the following prints -

(i) Principle (ii) Labelled diagram (iii) Observation table.

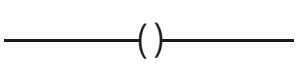
Ik'Uk&18 f0k|Rk IkfjIkFk Ek mIk¸kkXk gkUk 0kkYk fUkEUkkfdRk LkdRkk d UkkEk fYkf[k,A &

Write the names of the following symbols used in an electric circuit.

IkR¸kd Ikj 1 vd

(i) 

(ii) 

(iii) 

(iv)

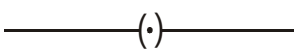
(v)  (vi) 

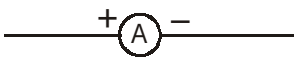
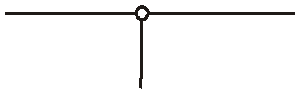
¼vFkOkk½

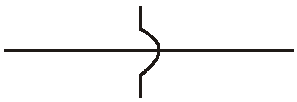
f0k|Rk lkfjlkFk Ek mlk;kkXk gkUk 0kkYk fUkEUkkfdRk Lkd Rkkd UkkEk fYkf[k;kA

Write the names of the following symbols used in an electric circuit.

lkR;kd lkj 1 vd

(i)  (ii) 

(iii)  (iv) 

(v)  (vi) 

lk'Uk&19 EkkUkOk Ek mRLkTkUk Rk«k dk LkfPk«k 0k.kUk dhfTk, ½2$2$2½

Explain the excretory system of a man with a labelled diagram.

¼vFkOkk½

EkkUkOk Ek Ek«k fUkEkk.k dh lkfØ;kk dk LkfPk«k 0k.kUk dhfTk,A

Explain the process formation of urine with a labelled diagram.

^vkn'k mRrj** lV&,

mÙkj 1 ¼v½ (i) (d) dkCkkYV vkDLkkbM iR;d ij 1 vd

(ii) (c) 3

(iii) (a) {kkjh,k /kkRk

(iv) (b) lkfRkfCkECk dh YkCkkb

0kLRk dh YkCkkb

(v) (a) LkYk,kUk vfHkfØ,kk

mÙkj 1 ¼c½ (i) PkECk dh,k {k«k iR;d ij 1 vd

(ii) nkUkk /k0k

(iii) YkXkkHkXk 1-5 fd-Xkk-

(iv) CO_2

(v) lkn"kd

mÙkj 2 LkkfæRk v,kLd dk 0kk,k@O_2 dh mlkfLFkfRk Ek mLkd XkYkUkk d d UkhPk XkEk djUkk HkTkUk dgYkkRkk gA 2 vd

mÙkj 3 lkjk0kRkUk d nk fUk,kEk &

(ii) vkIkRkUk dk.k ,0k lkjk0kRkUk dk.k Lkn0k Ckjk Ckj gkRk gA 1 vd

(ii) vkIkfRkRk fdj.k lkjk0kfRkRk fdj.k ,0k vkIkRkUk fCkn lkj vfHkYkCk RkhUkk ,d gh RkYk lkj gkRk gA

mÙkj 4 vIkfPkRk HkkTkUk Tkk gEkkj 'kjhj d fYk, mlk,kkXkh Ukgh gkRk mUg 'kjhj Lk Ckkgj fUkdkYkUk dh fØ,kk Ckfg"dj.k dgYkkRkh gA 2 vd

mÙkj 5 $$\frac{1}{R}=\frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_3}+\frac{1}{R_4}+\frac{1}{R_5}$$

$$\frac{1}{R}=\frac{1}{10}+\frac{1}{10}+\frac{1}{10}+\frac{1}{10}+\frac{1}{10}$$ l = 1 vd

$$\frac{1}{R}=\frac{5}{10}=\frac{1}{2}$$ gy 1 vd

$$R=2\Omega$$

mÙkj 6 ROkPkh¸k 'OkLkUk dPkOkk] Tkkd] Ukjh Tk Ikjk IkkfM¸kk vkfn Ckgdk'kdh¸k TkURk Ek Ikk¸kk TkkRkk g A 'kjhj dh UkEk ROkPkk CO_2 d Lkh/k LkIkd Ek gkRkh g Tkk O_2 d Xkg.k RkFkk CO_2 dk Ckkgj djUk dk dk¸k djRkh gA

mÙkj 7 /OkfUk Ikn"k.k d RkhUk dkj.k & ¼1$1$1½

1- [kUkUk dk¸k djRk LkEk¸k f0kLQkVdk d Ik¸kkXk Lk A

2- XkLk fLkYk.Mj d QVUk Lk

3- Lkj{kk mIkdj.kk d foLQkV Lk bLkh Ikdkj vU¸k dkj.k fYk[kUk Ikj IkR¸kd d fYk,

mÙkj 8 (i) $2Na+2H_2O\rightarrow 2NaOH+H_2$ 1 vd

(ii) $CaCO_3\xrightarrow{\Delta}CaO+CO_2$ 1 vd

(iii) $N_2+3H_2\rightarrow 2NH_3+$ Å tk 1 vd

mÙkj 9 v¸kLd vkj [kfUkTk Ek RkhUk vRkj ¼1$1$1½

v¸kLd&	[kfUkTk&
1- Ok [kfUkTk fTkUkLk /kkRk fUk"d"k.k dEk [kPk Ek Lkf0k/kkTkUkd ,Ok vf/kd Ekk«kk Ek fd¸kk Tkk Lkd	1- [kkUkk Lk [kUkUk }kjk IkkIRk /kkRkvk d f0kfHkUUk ¸kkfXkd [kfUkTk dgYkkRk gA

2- fØ¸kkf'kYk v'kf)¸kk Ukgh Ikk¸kh TkkRkh gA

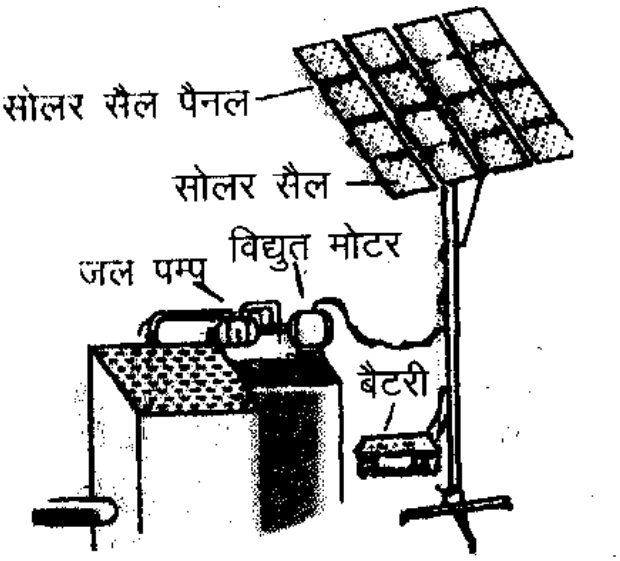
2- fØ¸kk'khYk v'kf)¸kk Hkh Ikk¸kh TkkRkh gA

3- LkHkh v¸kLdk dk /kkRk fUk"d"k.k d fYk, Ik¸kkXk fd¸kk Tkk LkdRkk gA

3- LkHkh [kfUkTkk dk /kkRk fUk"d"k.k d fYk, Ik¸kkXk fd¸kk Tkk LkdRkk gA

UkkV& vU¸k vURkj fYk[kUk Ikj IkR¸kd d fYk, 1 vd IknkUk fd¸k TkkOkA

mÙkj 10



fPk«k &LkkYkj LkYk IkUky

mÙkj 11 vfHkfØ¸kk nj dk IkHkkf0kRk djUk 0kkYk dkjd& 1 × 4 ¾ 4

1- vfHkdkjdk dk Lkkæ.k ¼iR;d dk o.ku½

2- vfHkfØ¸kk dk RkkIk

3- mRIkjd dh mIkfLFkfRk

4- vfHkfØ¸kk dk nkCk

5- Ik"B dk {k«kQYk

VhIk& dkb Pkkj dkjd fYk[kUk Ikj Hkh 4 vd IknkUk fd¸k Tkk¸kA

¼vFkOkk½

jkLkk¸kfUkd LkkE¸k d Pkkj lkEk[k Yk{k.k

1- nkUkk fn'kkvk Ek gkUk OkkYk lkØEkk dh XkfRk Ckjkckj Ykfdlk f0kIkfjRk gkRkh gA

2- vfHkfØ¸kk fdLkh Hkh fn'kk Ek lk.kRkk lkkIRk Ukgh djRkh gA

3- vfHkdkjdk RkFkk mRlkknk dh Ekk«kk, LkkE¸k fEkJ.k Ek fLFkj jgRkh gA

4- RkkIk] nkCk vFkOkk LkkUæ.k d lkfjOkRkUk Lk LkkE¸kOkLFkk Ek Hkh lkfjOkRkUk gkRkk gA

mÙkj 12 (i) vfHkfØ¸kk dk jkLkk¸kfUkd LkEkh dj.k & 1 vd

$$C_2H_5OH + O_2 \xrightarrow{,fLkVk\ CkDVj} CH_3COOH + H_2O$$

(ii) **f0kf/k &** ,fFkYk ,Ydkgkyk dk vkDLkhdj.k ,LkhVk CkDVj dh mlkfLFkfRk Ek djUk lkj RkUk ,fLkfVd vEYk lkkIRk gkRkk gA bLk f0kf/k Ek CkkYVhUkEkk lkk«k Ek lkjkUk fLkjd Lk HkhXkh Ykdlh dk NhYkUk Hkjdj FkkMh Ekk«kk Ek $(NH_4)_2SO_4$ fEkYkkdj mlkj Lk ,fFkYk ,Ydkgkyk ,Ok UkhPk Lk Okk¸k lkOkkfgRk fd¸kk TkkRkk g fTkLkEk vfHkfØ¸kk gkUk lkj CkkYVhUkEkk lkk«k d UkhPk RkUk ,fLkfVd vEYk lkkIRk gkRkh gA

2 vd

(iii) $CH_3COOH + NH_4OH \rightarrow CH_3COONH_4 + H_2O$ 1 vd

¼vFkOkk½

(i) 1- $C_{12}H_{22}O_{11} + H_2O \xrightarrow{TkkbEkTk} C_6H_{12}O_6 + C_6H_{12}O_6$ 1 vd

2- $C_6H_{12}O_6 \xrightarrow{bUoVt} 2C_2H_5OH + 2CO_2$

(ii) **f0kf/k&** 1- RkUk dj.k&'khj dk 8&10 lkfRk'kRk RkUk fd¸kk TkkRkk gA 2 vd

2- vkEkkfUk¸kk LkYQV&fEkYkkRk g Tkk ¸khLV dk HkkTkUk gA

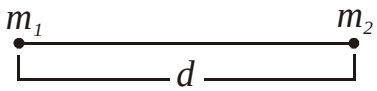
3- H_2SO_4 fEkYkkRk g fTkLkLk 'khj Ek mIkfLFkRk TkhOkk.k Uk"V gk TkkRk gA

4- vCk bLkEk 5 IkfRk'kRk ,khLV fEkYkkdj 2&3 fnUk d fYk, j[k fn,kk TkkRkk g vfHkfØ,kk d Ik'PkkRk 10 IkfRk'kRk ,Ydkgk Yk IkkIRk gkRkk Tkk Okk'k dgYkkRkk gA

5- Okk'k dk vkLkOkUk djUk Ikj 90 IkfRk'kRk ,fFkYk ,Ydkgk Yk IkkIRk gkRkk gA

(iii) $2C_2H_5OH + 2Na \rightarrow 2C_2H_5ONa + H_2$ 1 vd

mÙkj 13 **0,kRØEk OkXk dk fUk,kEk&** ^^fdUgh nk PkECk dh,k /kOkk d CkhPk YkXkUk OkkYk vkd"k.k CkYk ,kk IkfRkd"k.k CkYk mUkdh /kOk IkCkYkRkk vk d Xk.kUkQYk d LkEkkUkIkkRkh RkFkk /kOkk d CkhPk dh njh d OkXk d 0,kRØEkkUkIkkRkh gkRkk gA** 1 vd



,kfn m_1, m_2 /kOkIkCkYkRkk OkkYk nk /kOk dh CkhPk dh njh d gk Rkk

$$F \propto m_1 m_2 \text{ RkFkk } F \propto \frac{1}{d^2}$$

,kk $F \propto \frac{m_1 m_2}{d^2}$,kk $F = K\frac{m_1 m_2}{d^2}$ 1 vd

Tkgk K ,d vUkIkkfRkd fUk,kRkkd g

,dkd /kOk & dYkkEk d Lk«k Ek

$m_1 = m_2 = m, d = 1, F = 10^{-7}$ U,kVUk] j[kUk Ikj

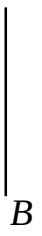
$K = 10^{-7}$ gUkjh@EkhVj

$10^{-7} = \frac{10^{-7} mm}{1^2}$ ¾ 10^{-7} 1 vd

^^vRk% ,dkd /kOk Okg /kOk g Tkk fUk,kkRk Ek 1 EkhVj dh njh lkj j[k LkEkkUk /kOk dk 10 U,kVUk d CkYk Lk lkfRkdf"kRk djRkk gA** 1 vd

¼vFkZkkk½

fPk«k Ek] PkECk dh,k {k«k dh RkhOkRkk I dk OB fn'kk Ek {kfRkTk ?kVd H dk OA fn'kk Ek m/Okk/kj ?kVd V dk OC fn'kk Ek RkFkk UkEkUk dk.k θ dk $\angle AOB$ Lk lknf'kRk fd,kk Xk,kk gA



LkEk dk.k ΔOAB Ek

$$\cos\theta = \frac{OA}{OB} \text{ RkFkk } \sin\theta = \frac{AB}{OB}$$

$$OA = OB\cos\theta \text{ RkFkk } AB = OB\sin\theta$$

fp= e] $OA = H,\ AB = OC = V, OB = I$

$\therefore$ $H = I\cos\theta$ .....(i) RkFkk

$V = I\sin\theta$ .....(ii)

LkEkh dj.k (ii) dk leh- (i) l Hkkx nu ij

$$\frac{V}{H} = \frac{I\sin\theta}{I\cos\theta} = tan\theta$$

$$\boxed{V = H\tan\theta}$$

iuh% leh- (i) o (ii) dk ox dj tkMu ij

$$H^2 + V^2 = I^2\cos^2\theta + I^2\sin^2\theta = I^2(\cos^2\theta + \sin^2\theta) = I^2$$

$$H^2 + V^2 = I^2 \quad [\because \cos^2\theta + \sin^2\theta = 1]$$

mÙkj 14 #f/kj d Pkkj dk,k dk Ok.kUk &

1- **vkDLkhTkUk dk lkfjOkgUk** & ghEkkXYkkfCkUk 'OkLkUk }kjk Ykh Xkb vkDLkhTkUk Lk

Lk¸kDRk gkdj vkDLkh fgEkkXYkkfCkUk CkUkkRkk g fTkLkdk Ikfj0kgUk Ikj 'kjhj Ek gkRkk gA

2- dkCkUk Mkbv kDLkkbM dk Ikfj0kgUk& #f/kj IYkkTEkk ,0k ghEkkXYkkfCkUk }kjk CO_2 dk Ikfj0kgUk gkRkk gA

3- Ikk"kd Iknkfkk dk Ikfj0kgUk & IkfPkRk ,0k v0k'kkf"kRk Ikk"kd Iknkfk TkLk XYkdkTk] vEkhUkk vEYk] 0kLkk vEYk dk Ikfj0kgUk gkRkk gA

bLkh Ikdkj vU¸k dk¸k dk 0k.kUk djUk Ikj Hkh 1 vd Iknkuk fd¸k Tkk¸kA

¼vFk0kk½

YkLkhdk d Pkkj dk¸kk dk LkEkÖkkUkk&

1- YkLkhdk gkfUkdkjd Tkh0kkvk dk Uk"V dj gkfUkdkjd Iknkfkk dk 'kjhj Lk EkDRk djRkh gA

2- IkPk g, 0kLkk dk v0k'kk"k.k dj 'kjhj d f0kfHkUUk HkkXkk Ek IkgPkkRkh g ,0k vk0k'¸kdRkkUkLkkj LkfPkRk djUk Ek Lkgk¸kRkk djRkh gA

3- 'kjhj Ek PkkV YkXkUk Ikj ?kk0k Hkj Uk Ek jDRk ,0k 'kjhj Lk EkDRk djUk Ek Lkgk¸kRkk djRkh gA

mÙkj 15 LkjYk v.kvk d Lk¸kkTkUk Lk CkUk mPPkRkj vk.kf0kd Hkkj 0kkYk ¸kkfXkdk dk CkgYkd dgRk gA

1- IkkÑfRkd CkgYkd & bUkEk Lk dkb nk fYk[kUk Ikj &2 vd

(a) IkkÑfRkd jCkj (b) IkkVhUk (c) U¸kfDYkd vEYk (d) IkkfYkLkdjkbM

2- Lk'Ykf"kRk CkgYkd& bUkEk Lk dkb nk fYk[kUk Ikj &2 vd

(a) j¸kkUk (b) Ukk¸kYkkUk (c) VjhYkhUk (d) CkdYkkbV
(e) VkVYkkUk (f) Lk'Ykf"kRk jCkj

¼vFkOkk½

(i) P.V.C. dk lkjk UkkEk &lkkYkh 0kkbfUkYk DYkkjkbM & 1 vd

(ii) Lk«k& $\left[\begin{array}{c} CH_2-CH- \\ | \\ Cl \end{array}\right]$ 1 vd

(iii) Xk.k& 1- n< lYkkfLVd g ¼bue l dkb rhu fy[ku ij 3 vd½

2- ¸kg f0k|Rk dk dPkkYkd gA

3- ¸kg TkYk lkfRkjk/kh g

4- ¸kg m"Ekk 0k jLkk¸kUkk Lk vlkHkkf0kRk jgRkk gA

mÙkj 16- vkDLkh 'OkLkUk ,Ok vUkkDLkh 'OkLkUk Ek lkkPk vRkj & (1×5)

	vkDLkh'OkLkUk		vUkkDLkh 'OkLkUk
1-	¸kg fØ¸kk vkDLkhTkUk dh mlkfLFkfRk Ek gkRkh gA	1-	¸kg fØ¸kk vkDLkhTkUk dh vUklkfLFkfRk Ek gkRkh gA
2-	bUkEk HkkT¸k lknkFkk dk lk.k vkDLkhdj.k gkRkk gA	2-	bLkEk HkkT¸k lknkFkk dk vlk.k vkDLkhdj.k gkRkk gA
3-	bLk fØ¸kk dk vfRkEk mRlkkn CO_2 vkj TkYk gA	3-	bLk fØ¸kk dk vfRkEk mRlkkn CO_2 ,Ok ,Ydkgk Yk ¸kk YkfDVd vEYk gA
4-	bLk fØ¸kk Ek 1 v.k XYkdkTk Lk 38 ATP d v.k lkkIRk gkRk gA	4-	bLk fØ¸kk Ek 1 v.k XYkdkTk Lk 2 ATP d v.k lkkIRk gkRk gA
5-	vf/kdk'k Tkh0kk Ek ¸kg fØ¸kk gkRkh jgRkh gA	5-	¸kg fØ¸kk CkgRk dEk Tkh0kk Ek gkRkh gA

Vhlk& vU;k vURkj fYk[kUk lkj Hkh lkR;kd d fYk, 1 vd fn;k Tkk;kXkA

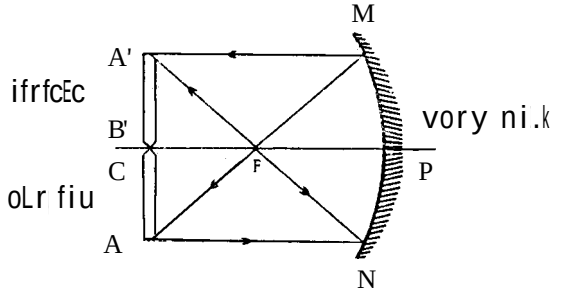
¼vFkZkkk½

	'OkLkkPNOkkLk		'OkLkUk
1-	;kg dkf'kdkvk d Ckkgj gkRkh gA	1-	;kg fØ;kk dkf'kdkvk d HkhRkj gkRkh gA
2-	bLk fØ;kk Ek ,UTkkbEk dh vkOk';kdRkk Ukgh gkRkh gA	2-	bLk fØ;kk Ek ,UTkkbEk dh vkOk';kdRkk gkRkh gA
3-	;kg ,d ;kkf«kd fØ;kk gA	3-	;kg ,d TkOk jkLkk;kfUkd fØ;kk gA
4-	bLk fØ;kk Ek mTkk Ukgh gkRkh gA	4-	bLk fØ;kk Ek mTkk EkDRk gkRkh gA
5-	bLkd vRkXkRk O_2 ;kDRk Okk;k dk 'kjhj d vnj RkFkk CO_2 'kjhj Lk Ckkgj fd;kk TkkRkk gA	5-	bLkd vURkXkRk HkkT;k lknkFkk dk vkDLkhdj.k fd;kk TkkRkk gA

mÙkj 17 vOkRkYk nlk.k dh Qkd Lk njh

1- fLk)kRk & ;kfn dkb OkLRk nlk.k d OkØRkk dæ lkj gk Rkk mLkdk lkfRkfCkECk OkØRkk dæ lkj gh CkUkRkk g vRkh OkØRkk dæ dh fLFkfRk KkRk djd OkØRkk f«kT;kk fUkdkYk dj vk/kk djUk lkj nlk.k dh Qkd Lk njh KkRk gk TkkRkh gA 1 vd

2- UkkEkkfdRk fPk«k 2 vd



3- vOkYkkdUk Lkkj.kh &

ØEkkd	nlk.k dh fLFkfRk	0kLRk fkUk dh fLFkfRk	0kØRkk f«kT¸kk	QkdLk njh
1				
2				
3				

¼vFkOkk½

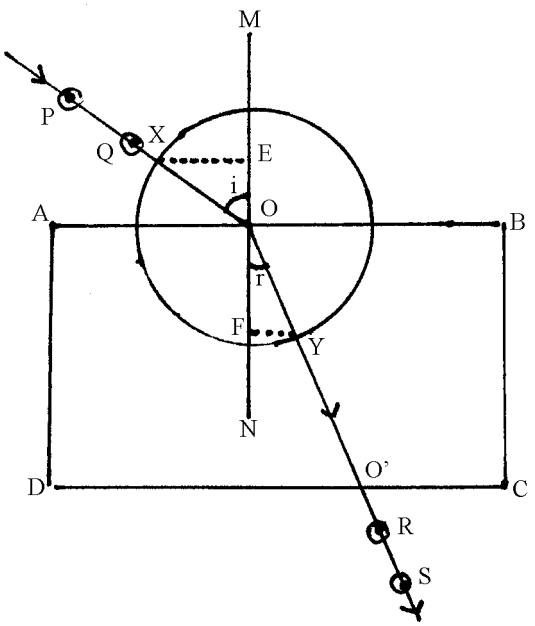
fLk)kRk– (i) LUkYk d fUk¸kEk Lk $\mu = \dfrac{\sin i}{\sin r}$

$$\sin i = \frac{XE}{OX}, \quad \sin r = \frac{YF}{OY}$$

eku j[ku ij] $\mu = \dfrac{XE/OX}{YF/OY}$ pfd $OY = OX$

$$\mu = \frac{XE}{YF}$$

(ii)



(iii) voykdu rkfydk

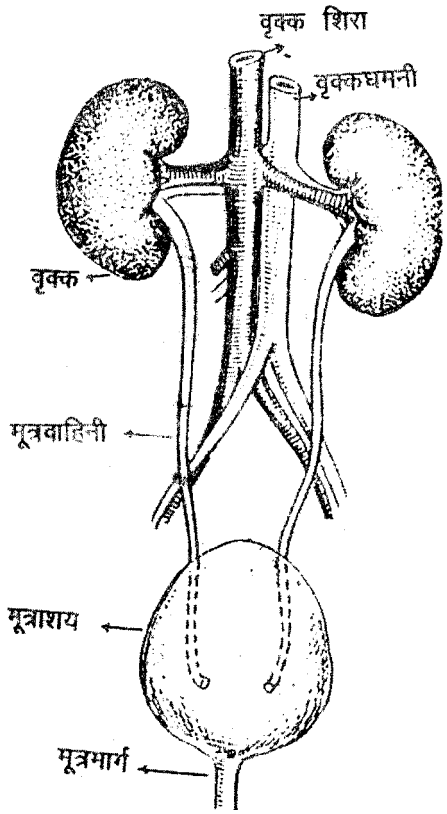
ØEkkd	*XE* dh YkCkkb	*YF* dh YkCkkb	

mÙkj 18- (i) LkYk (ii) CkVjh (iii) [kYkh dTkh (iv) Lk,kkTkd Rkkj (v) lkfRkjk/k (vi) /kkjk fUk,k«kd

¼vFkOkk½

(i) Ckn dTkh (ii) /kkjkEkkIkh (iii) vEkhVj (iv) Lkf/k Rkkj (v) fCkUkk Lkf/k Rkkj ØkfLkXk (vi) ¶,kTk A

mÙkj 19



EkkUkOk mRLkTkUk dk UkkEkkfdRk fPk«k

(i) fPk«k CkUkkUk lkj 2 vd (ii) UkkEkkfdRk djUk lkj 2 vd (iii) Ok.kUk djUk lkj 2 vd A

0kDd & EkkUk0k 'kjhj dk lkEk[k mRLkTkh vXk g Tkk mRLkTkh lknkFkk dk vYkXk dj nRkk g ,kg Xkgj YkkYk jXk dk ,d TkkMh ik,kk TkkRkk gA

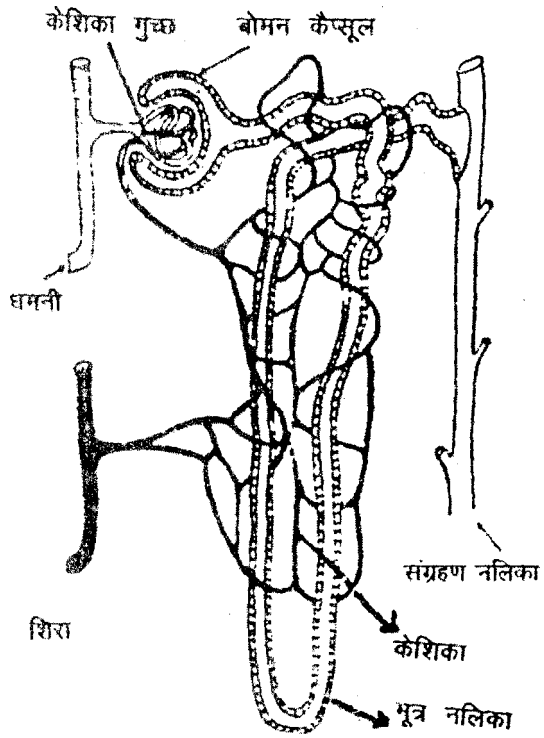
Ek«k0kkfgUkh & lkR,kd Ek«k 0kkfgUkh,kk 20 Lk 30 Lk-Ekh- YkECkh gkRkh g vkj Ek«kk'k,k Ek Tkkdj [kYkRkh gA

Ek«kk'k,k& ,d FkYkh d LkEkkUk gkRkk g fTkLkEk Ek«k LkXkfgRk gkRkk gA

Ek«kEkkXk & Ek«kk'k,k ,d Lkdjh UkYkh }kjk Ckkgj [kYkRkk g fTkLk Ek«kEkkXk dgRk gA

¼vFk0kk½

mÙkj 19



0k.kUk

(i) vfRk Lk{Ek NUkUk& ,kg fØ,kk CkkEkUk LkIkV Ek gkRkh g vfHk0kkgh ,0k vlk 0kkgh /kEkfUkdk }kjk fUkfEkRk df'kdk XkPn }kjk NUkUk dh IkfØ,kk gkRkh gA bUkEk IkkVhUk Lk #f/kj NUkRkk gA vkj CkkEkUk LkIkV Ek bdëk gkRkk gA bUkEk IkkVhUk d CkM v.k Ukgh NUk IkkRk g vkj NkV v.k NUk TkkRk g bLk fØ,kk dk Mk,kfYkfLkLk dgRk gA bLk Ikdkj UkÝkUk MkbfYkfLkLk FkYk d LkEkkUk dk,k djRkh gA

(i) 0kj.kkREkd v0k'kk"k.k& 0kDd UkfYkdk Ek XYkdkTk] [kfUkTk TkYk ,0k vU;k mlk;kkXkh lknkFkk dk v0k'kk"k.k gk TkkRkk g vkj vUkIk;kkXkh lknkFk dk v0k'kk"k.k Ukgh gkRkk gA

(i) UkYkdh;k L«kk0k.k & 0kDd UkfYkdkvk dh #f/kj dkf'kdkvk }kjk vUkIk;kkXkh lknkFkk dk L«kk0k.k gkRkk g ;kg LkXkg UkfYkdk Ek ,df«kRk gkdj Ek«kk'k;k Ek lkgPk TkkRkk g bLk LkXkfgRk æ0k dk Ek«k dgRk gA

¼fPk«k lkj 2 vd] UkkEkkdUk lkj 2 vd] 0k.kUk lkj 2 vd½

Set - B

gkb Ldy lfVfQdV ijh{kk

High School Certificate Examination

lEiy&i'u i=

SAMPLE PAPER

fo"k; %& (Subject) - foKku **le; 3 ?k.Vk (Time- 3 Hrs)**

d{kk %& (Class) - nloh **i.kZd 75 (M.M.)**

(Instruction) & ¼fun'kZ½

1- lHkh i'u gy djuk vfuok;Z g A

Attempt all the Question

2- i'u Øekd 01 e 10 vad fu/kkfjr g A nk mi[k.M g A [k.M ^^v** e 05 cgfodYih; i'u rFkk [k.M ^^c** e 05 fjDr LFkkuk dh ifr vFkok mfpr lc/k tkfM, A iR;d i'u d fy, 1 vad vkcfVr g A

Q. No. 01 Carries 10 Marks. There are two sub-section, Section A is Multiple choice carries 05 marks and section B is fill in the blanks or match the column carries 05 marks.

3- i'u Øekd 02 l i'u Øekd 06 rd vfr y?kqRrjh; i'u g A iR;d i'u ij 02 vad vkcfVr g A mRrj dh vf/kdre 'kCn lhek 30 'kCn A

Q. No. 2 to 06 are very short answer type question & it carries 02 marks each. Word limit is maximum 30.

4- i'u Øekd 07 l i'u Øekd 10 rd y?kqRrjh; i'u g A iR;d i'u ij 03 vad vkcfVr g A mRrj dh vf/kdre 'kCn lhek 50 'kCn A

Q. No. 07 to 10 are short answer type question & it carries 03 marks each. Word limit is maximum 50.

5- i'u Øekd 11 l i'u Øekd 14 rd y?kqRrjh; i'u g A iR;d i'u e vkrfjd fodYi g vkj iR;d i'u ij 04 vad vkcfVr g A mRrj dh vf/kdre 'kCn lhek 75 'kCn A

Q. No. 11 to 14 are short answer type question & it carries 04 marks each. Each question has internal choice. Word limit is maximum 75.

6- i'u Øekd 15 l i'u Øekd 17 rd nh?kmRrjh; i'u g A iR;d i'u e vkrfjd fodYi g vkj iR;d i'u ij 05 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 100 'kCn A

Q. No. 15 to 17 are long answer type question & it carries 05 marks each. Each question has internal choice. Word limit is maximum 100.

7- i'u Øekd 18 l i'u Øekd 19 rd nh?kmRrjh; i'u g A iR;d i'u e vkrfjd fodYi g vkj iR;d i'u ij 06 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 150 'kCn A

Q. No. 18 to 19 are long answer type question & it carries 06 marks each. Each question has internal choice. Word limit is maximum 150.

Ik'Uk 1- ¼v½ Lkgh f0kdYIk dk PkUkk0k djd mLk vIkUkh mRRkj IkfLRkdk Ek fYkf[k,k & IkR,kd Ikj 1 vd A

(a) IYkkLVj vkQ Ikfjlk dk jkLkk,kfUkd Lk«k g

(a) $CaSO_4.H_2O$ (b) $CaSO_4.½H_2O$

(c) $CaSO_4.2H_2O$ (d) $CaSO_4.¾H_2O$

(b) fdLk f0kYk,kUk d pH dk EkkUk 7 Lk dEk gkXkk&

(a) pu dk ikuh (b) LkkCkUk dk ?kkYk

(c) fLkjdk (d) /kk0kUk LkkMk dk TkYkh,k f0kYk,kUkA

(c) ,d RkR0k dk bYkDVkfUkd f0kU,kkLk 2] 8] 2 g ,kg RkR0k gkXkk&

(a) s&CYkk d RkR0k (b) p– CYkk d RkR0k

(c) d&CYkk d RkR0k (d) f– CYkk d RkR0k A

(d) v0kRkYk nIk.k dh Qkd Lk njh gkRkh g&

(a) $2 \times$ 0kØRkk f«kT,kk (b) $\frac{\text{0kØRkk f«kT,kk}}{2}$

(c) $\frac{2}{\text{0kØRkk f«kT,kk}}$ (d) mIkjkDRk Ek Lk dkb Ukgh A

(e) UkkfHk dh,k fj,kDVj Ek ,kjfUk,kEk dk NM dk,k djRkh g&

(a) fUk,k«kk d d :Ik Ek (b) b/kUk d :Ik Ek

(c) 'khRkYk d d :Ik Ek (d) Ikfjj{k d d :Ik Ek A

Que1 (A) Answer the following question choosing the right option-

(i) The chemical formula of plaster of paris is -

(a) $CaSO_4.H_2O$ (b) $CaSO_4.½H_2O$

(c) $CaSO_4.2H_2O$ (d) $CaSO_4.¾H_2O$

(ii) Which of the following solutions has pH value less than 7 -

(a) lime water (b) soap dissolved in water

(c) acetic acid (d) water solution of washing soda.

(iii) Electronic configuration of an element is 2, 8, 2. This element is -

(a) s-block element (b) p–block element

(c) d-block element (d) f–block element.

(iv) The focal length of a concave mirror is -

(a) 2×radius of curvature (b) $\frac{\text{radious of curvature}}{2}$

(c) $\frac{2}{\text{radious of curvature}}$ (d) None of the above.

(v) In a nuclear reactor uranium rods function as -

(a) controller (b) fuel

(c) coolant (d) protector

¼Ck½ fjDRk LFkkUkk dh lkfRk dhfTk, & lkR,kd lkj 1 vd

(a) ,kfn dkb lkfRkjk/k db lkfRkjk/kk d Lk,kkTkUk dk bLk lkdkj lkfRkLFkkflkRk dj n fd lkfjlkFk Ek /kkjk dk EkkUk vlkfj0kfRkRk jg Rkk bLk vdYk lkfRkjk/k dk &&&&&&&&&&&lkfRkjk/k dgRk gA

(b) lkF0kh ,d CkM PkECkd dh HkkfRk 0,k0kgkj djRkh g bLkd dkj.k gh L0kRk«kRkk lk0kd YkVdkUk lkj lkR,kd PkECkd Lkn0k &&&&&fn'kk Ek Bgjkk gA

(c) EkkUk0k Ek mlkfLFkRk 0kEkh Qkek ,lkf.MDLk ,d &&&&&&&&&&vXk gA

(d) lkdk'k Lk'Yk"k.k 0kk,kEkMYkh,k CO_2 dk mlk,kkXk djd &&&&&&&dk NkMk TkkUkk gh 'k)Rkk RkFkk LkRkYkUk dk CkUkk,k j[kuk gA

(e) /0kfUk lkn"k.k dk LkCkLk vf/kd lkHkk0k &&&&&&&lkj lkMRkk gA

(B) Fill in the blanks -

(a) If a single resistance can replace combination of many resistances in such a way that current value remains unaltered then this single resistance is called ..... resistance.

(b) Our earth acts like a big magnet, that is why a freely suspended magnet always stays along ..... direction.

(c) Vermi form appendix present in a man is an ..... organ.

(d) The photosynthesis used CO_2 and release ..... thus maintains cleanliness and balance.

(e) Noise pollution has its greatest effect on .....

lk'Uk 2 fUkLRkkIkUk dk lkfjHkkf"kRk dhfTk, & 2 vd

Define calcination.

lk'Uk 3- vlk0kRkUk d nk fUk,kEk fYkf[k, ¼1$1½ vd

Write the two laws of refraction

lk'Uk 4- L0kkXkh dj.k dk lkfjHkkf"kRk dhfTk, 2 vd

Define assimilation.

Ik'Uk 5- 10 Ω d IkkPk IkfRkjk/kk dk J.khØEk Ek TkkMUk Ikj Ikfj.kkEkh IkfRkjk/k dh Xk.kUkk dhfTk, & Lk«k 1 vd] Xk.kUkk 1 vd

Claculate the resultant resistance if five resistance are connected in series.

Ik'Uk 6- Ek[kXkgh¸k 'OkLkUk dk LIk"V dhfTk, & 2 vd

Explain the respiration through buccal cavity.

Ik'Uk 7 TkYk Ikn"k.k d RkhUk dkj.k fYkf[k, & ¼1$1$1½

Write three causes of water pollution.

Ik'Uk 8- D¸kk gkRkk g TkCk ¼dOkYk jkLkk¸kfUkd LkEkhdj.k nhfTk,A½ ¼1$1$1½

1- N_2 vkj O_2 d fEkJ.k dk mPPkRkkIk Ikj XkEk djRk gA

2- C vkj S d fEkJ.k dk XkEk djRk gA

3- Mg /kkRk dk TkYk d LkkFk mCkkYkRk gA

What happens (Give only chemical reaction)

(i) When the mixture of N_2 and O_2 is heated at high temperature.

(ii) When the mixture of C and S is heated.

(iii) When Mg metal is boiled with water.

Ik'Uk 9 /kkRk vkj v/kkRk Ek jLkk¸kfUkd Xk.kk d vk/kkj Ikj RkhUk vRkj fYkf[k,

On the basis of chemical properties write three differences between metals and non metals.

lk'Uk 10 XkkYkh¸k lkjkOkRkd LkkYkj ddj dk d0kYk UkkEkkfdRk fPk«k CkUkkb¸k

Draw a labelled diagram of spherical reflector solar cooker.

lk'Uk&11 vfHkfØ¸kk nj dk lkHkkfOkRk djUk 0kkYk Pkkj dkjdk dk o.ku dhft , A ¼1$1$1$1½

Give four factors that affect the rate of reaction.

¼vFkOkk½

jkLkk¸kfUkd LkkE¸k d Pkkj lkEk[k Yk{k.k fYkf[k, A ¼1$1$1$1½

Give four main characteristics of chemcial equilibrium.

lk'Uk&12 ,fLkfVd vEYk fUkEkk.k dh 'kh?k fLkjdk f0kf/k dk fUkEUkkfdRk 'kh"kdk Ek 0k.kUk dhfTk,A

(i) vfHkfØ¸kk dk jkLkk¸kfUkd LkEkhdj.kA 1 vd

(ii) lk¸kkXk f0kf/k Lk{klk Ek A 2 vd

(iii) ,fLkfVd vEYk dh NH_4OH Lk vfHkfØ¸kk dk d0kYk LkEkhdj.kA 1 vd

Describe the quick Vinegar process of manufacture of acetic acid on the headings given below.

(i) Chemical equation of the reaction.

(ii) Laboratory method in brief.

(iii) Chemical equation for the reaction of acetic acid with NH_4OH.

¼vFkOkk½

,fFkYk ,Ydkgkyk fUkEkk.k dh fd.oUk f0kf/k dk 0k.kUk fUkEUkkfdRk 'kh"kdk d vRkXkRk dhfTk,A

(i) vfHkfØ;kk dk jkLkk;fud LkEkhdj.k & 1 vd

(ii) f0kf/k dk Lk{kIk Ek 0k.kUk & 2 vd

(iii) ,fFkYk ,Ydkgkyk dh Na /kkRk Lk vfHkfØ;kk dk LkEkhdj.k A 1 vd

Describe the fermentation method for the manufcture of ethyl alcohol under the following headings.

(i) Chemical equation of the reaction.

(ii) Brief description of the process.

(iii) Chemical equation for the reaction of ethyl alcohol and Na Metal.

Ik'Uk&13 PkECkdR0k d fYk, dYkkEk dk 0;kRØEk 0kXk dk fUk;kEk fYk[kdj ,dkd /k0k dk LkEkÖkkb;k A ¼3$1½

Write the Coulomb's inverse square law of magnetism and explain unit pole.

¼vFk0kk½

fLk) dhfTk, %& $V = H \tan\theta$ ¼2$2½

$$I^2 = H^2 + V^2$$

Tkgk θ ¾ UkEk.k dk.k

I ¾ IkF0kh dh LkIk.k Rkh0kRkk

H ¾ IkF0kh dh {kfRkTk ?kVd

V ¾ m/0kk/kj ?kVd gA

Prove that :- $V = H \tan\theta$ ¼2$2½

$$I^2 = H^2 + V^2$$

Where θ = Angle of declination.

I = Total intensity of earth's magnetic field

H = Horizontal component of earth's magnetic field

V = Vertical component.

Ik'Uk&14 : f/kj d fdUgh Pkkj dk¸kk dk Ok.kUk dhfTk,A ¼1$1$1$1½

Describe any four functions of blood.

¼vFkOkk½

YkLkhdk d fdUgh Pkkj dk¸kk dk Ok.kUk dhfTk,A ¼1$1$1$1½

Describe any four functions of lymph.

Ik'Uk&15 CkgYkd fdLk dgRk g\ IkkÑfRkd ,Ok Lk'Ykf"kRk CkgYkd d nk&nk mnkgj.k ndj LkEkÖkkb¸kA ¼1$1$1$1$1½

What are polymers? Explain giving two examples for each natural and synthetic polymers.

¼vFkOkk½

P.V.C. dk Ikjk UkkEk vkj Lk«k fYk[kdj bLkd RkhUk Xk.k fYkf[k,A

Write the full name and formula of P.V.C. and give three properties of it.

Ik'Uk&16 vkDLkh'OkLkUk ,Ok vUkkDLkh 'OkLkUk Ek IkkPk vRkj fYkf[k,A ¼1$1$1$1$1½

Give five differences between aerobic and anaerobic respiration.

¼vFkOkk½

'OkkLkkPNOkkLk ,Ok 'OkLkUk Ek IkkPk vRkj fYkf[k,A ¼1$1$1$1$1½

Give five differences between breathing and respiration.

Ik'Uk&17 Ik¸kkXk 'kkYkk Ek v0kRkYk nIk.k dh Qkd l njh KkRk djUk dh ,o fIkUk f0kf/k dh Ik¸kkXk dk 0k.kUk fUkEUkkfdRk 'kh"kdk d vRkXkRk dhfTk,A

(i) fLk)kRk (ii) UkkEkkfdRk j[kkfPk«k (iii) v0kYkkdUk Lkkfj.khA ¼1$2$2½

Describe the single pin method to find out the focal length of a concave mirror on the following headings -

(i) Theory (ii) Labelled diagram (iii) Observation table.

¼vFkOkk½

Ik¸kkXk'kkYkk Ek dkPk d vk¸kRkkdkj XkVd dk vIk0kRkUkkd KkRk djUk d Ik¸kkXk dk 0k.kUk fUkEUkkfdRk 'kh"kdk d vURkXkRk dhfTk,A ¼1$2$2½

(i) fLk)kRk (ii) UkkEkkfdRk j[kkfPk«k (iii) v0kYkkdUk Lkkfj.kh

Explain the determination of refractive index of a glass slab in the laboratory on the following prints -

(i) Principle (ii) Labelled diagram (iii) Observation table.

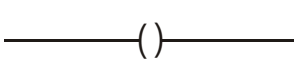
Ik'Uk&18 f0k|Rk IkfjIkFk Ek mIk¸kkXk gkUk 0kkYk fUkEUkkfdRk LkdRkk d UkkEk fYkf[k,A &

Write the names of the following symbols used in an electric circuit.

IkR¸kd Ikj 1 vd

(i) 

(ii) 

(iii) 

(iv)

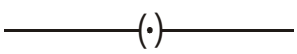
(v)  (vi) 

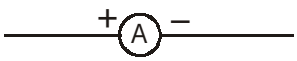
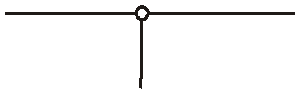
¼vFkOkk½

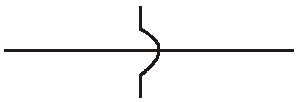
f0k|Rk lkfjlkFk Ek mlk;kkXk gkUk 0kkYk fUkEUkkfdRk Lkd Rkk d UkkEk fYkf[k;kA

Write the names of the following symbols used in an electric circuit.

lkR;kd lkj 1 vd

(i)  (ii) 

(iii)  (iv) 

(v)  (vi) 

lk'Uk&19 EkkUkOk Ek mRLkTkUk Rk«k dk LkfPk«k 0k.kUk dhfTk, ½2$2$2½

Explain the excretory system of a man with a labelled diagram.

¼vFkOkk½

EkkUkOk Ek Ek«k fUkEkk.k dh lkfØ;kk dk LkfPk«k 0k.kUk dhfTk,A

Explain the process formation of urine with a labelled diagram.

vkn'k mRRkj&lV&ch

mÙkj 1 v- (i) dk (b) $CaSO_4.½H_2O$

(ii) dk (c) fLkjdk

(iii) dk (a) s CYkkd RkROk

(iv) dk (b) 0kØRkk f«kT¸kk

(v) dk (b) b/kUk d :lk Ek A

mÙkj 1 Ck- (i) RkY¸k lkfRkjk/k ¸kk lkfj.kkEkh lkfRkjk/k & 1 vd

(ii) mRRkj&nf{k.k fn'kk Ek& 1 vd

(iii) v0k'k"kh vXk & 1 vd

(iv) vkDLkhTkUkA 1 vd

(v) dkUk ,0k Rkf«kdk Rk««kA

mÙkj 2 Lkkfæ Rk v¸kLd dk 0kk¸k dh vUklkfLFkfRk Ek XkYkUkkd Lk UkhPk XkEk djUkk fUkLRkklkUk dgYkkRkk gA 2 vd

mÙkj 3 vlk0kRkUk d fUk¸kEk& lkR¸kd lkj 1 vd

1- vklkfRkRk fdj.k] vlk0kfRkRk fdj.k RkFkk vklkRkUk fCkn lkj vfHkYkCk RkhUkk ,d gh RkYk Ek gkRk gA

2- vklkRkUk dk.k dh T¸kk ,0k vlk0kRkUk dk.k dh T¸kk Ek ,d fUkfÜPkRk vUklkkRk gkRkk g bLk nLkj Ekk/¸kEk dk lkgYk Ekk/¸kEk d LkkIk{k vlk0kRkUkkd dgRk gA $\therefore \mu = \frac{\sin i}{\sin r}$

mÙkj 4 v0k'kkf"kRk HkkT¸k lknkFk f0kfHkUUk dkf'kdkvk }kjk vlkUk fYk, Uk, mlk¸kkXkh ¸kkfXkdk TkLk Tkh0kæ0¸k d lkkVhUk] 0kLkk] fYkflkM vkfn dk Lk'Yk"k.k djRkh g] fTkLkLk Uk¸kk

Tkh0k æ0¸k CkUkRkk gA ¸kg fØ¸kk L0kkXkhdj.k dgYkkRkh gA 2 vd A

mÙkj 5& Lk«k ¼ J.khØEk d fYk, Ikfj.kkEkh IkfRkjk/k ¼l «k 1 vd] gYk &1 vd½

$$R = R_1 + R_2 + R_3 + R_4 + R_5$$

$$R = 10 + 10 + 10 + 10 + 10$$

R = 50 vke

mÙkj 6 Ek[kXkgh¸k '0kLkUk& bLk Ikdkj dk '0kLkUk Ek[kXkgh¸k '0kLkUk Ek<d Ek gkRkk gA ¸kg mLk LkEk¸k gkRkk g TkCk Ek<d TkYk Lk Ckkgj gkRkk g vkj mLk U¸kUkRkEk mTkk dh vk0k'¸kdRkk gkRkh gA 2 vd

mÙkj 7 TkYk Ikn"k.k d RkhUk dkj.k & IkR¸kd dkj.k Ikj 1 vd

1- ?kjYk vIkEkkTkd ,0k 0kkfgRk EkYk

2- vk|kfXkd vIkf'k"V

3- [kfUkTk RkYk dk Ukfn¸kk ,0k LkEkæ Ek QYkk0k

¼vU¸k dkj.k fYk[kUk Ikj Hkh vd Iknkuk fd¸k Tkk¸kXk A½

mÙkj 8 jLkk¸kfUkd LkEkhdj.k & IkR¸kd Ikj 1 vd

1- $N_2 + O_2 \xrightarrow{\Delta} 2NO$

2- $C + 2S \xrightarrow{\Delta} CS_2$

3- $Mg + 2H_2O \xrightarrow{\Delta} Mg(OH)_2 + H_2$

mÙkj 9 /kkRk vkj v/kkRk Ek RkhUk jkLkk¸kfUkd vRkj& ¼1$1$1½

/kkRk v/kkRk&

1- /kkRk, {kkjh¸k vkDLkkbM CkUkkRkh g Tkk TkYk Ek ?kYkdj {kkj nRk gA

1- v/kkRk vEYkh¸k ¸kk mnkLkhUk vkDLkkbM CkUkkRkh g Tkk TkYk Ek ?kYkdj vEYk CkUkkRkh gA

2- DYkkjhUk Lk fØ¸kk djd f0k|Rk Lk¸kkTkh DYkkjkbM CkUkkRkh gA

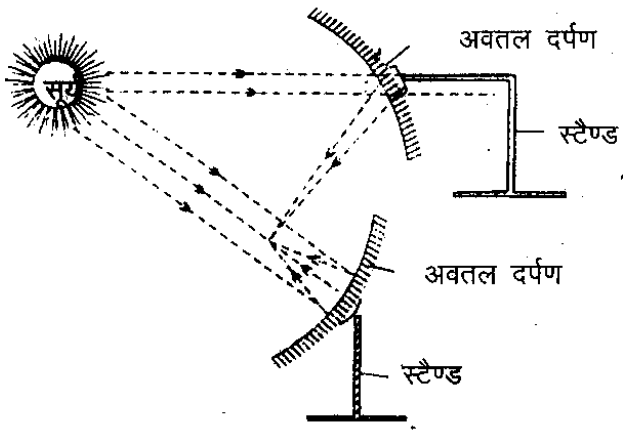
2- DYkkjhUk Lk fØ¸kk dj Lkg Lk¸kkTkh DYkkjkbM CkUkkRkh gA

3- ¸k vEYkk Lk fØ¸kkdj gkbMkTkUk XkLk EkDRk djRkh gA

3- ¸k vEYkk Lk fØ¸kk dj gkbMkTkUk ¸kDRk Ukgh djRkh gA

¼vU¸k vRkj fYk[kUk lkj lkR¸kd lkj ,d vd fn¸k Tkk¸kXkA½

mÙkj 10 XkkYkh¸k lkjk0kRkd LkkYkj ddj dk UkkEkkfdRk fPk«k



अवतल दर्पण की सहायता से
सूर्य किरणों का संग्रहण

¼lk.kRk¸kk UkkEkkfdRk fPk«k CkUkkUk lkj &3 vd½

mÙkj 11 vfHkfØ¸kk nj dk lkHkkf0kRk djUk 0kkYk dkjd& 1 × 4 ¾ 4

1- vfHkdkjdk dk Lkkæ.k ¼iR;d dk o.ku½

2- vfHkfØ¸kk dk RkkIk

3- mRIkjd dh mIkfLFkfRk

4- vfHkfØ;kk dk nkCk

5- Ik"B dk {k«kQYk

VhIk& dkb Pkkj dkjd fYk[kUk Ikj Hkh 4 vd Iknkuk fd;k Tkk;kA

¼vFkZkk½

jkLkk;kfUkd LkkE;k d Pkkj IkEk[k Yk{k.k

1- nkUkk fn'kkvk Ek gkUk 0kkYk IkØEkk dh XkfRk Ckjkckj Ykfduk f0kIkfjRk gkRkh gA

2- vfHkfØ;kk fdLkh Hkh fn'kk Ek Ik.kRkk IkkIRk Ukgh djRkh gA

3- vfHkdkjdk RkFkk mRIkknk dh Ekk«kk, LkkE;k fEkJ.k Ek fLFkj jgRkh gA

4- RkkIk] nkCk vFk0kk LkkUæ.k d Ikfj0kRkUk Lk LkkE;k0kLFkk Ek Hkh Ikfj0kRkUk gkRkk gA

mÙkj 12(i) vfHkfØ;kk dk jkLkk;kfUkd LkEkhdj.k & 1 vd

$$C_2H_5OH + O_2 \xrightarrow{,fLkVk\ CkDVj} CH_3COOH + H_2O$$

(ii) **f0kf/k &** ,fFkYk ,Ydkgkyk dk vkDLkhdj.k ,LkhVk CkDVj dh mIkfLFkfRk Ek djUk Ikj RkUk ,fLkfVd vEYk IkkIRk gkRkk gA bLk f0kf/k Ek CkkYVhUkEkk Ikk«k Ek Ikj kUk fLkjd Lk HkhXkh Ykdmh dk NhYkUk Hkjdj FkkMh Ekk«kk Ek $(NH_4)_2SO_4$ fEkYkkdj mIkj Lk ,fFkYk ,Ydkgkyk ,0k UkhPk Lk 0kk;k Ik0kkfgRk fd;kk TkkRkk g fTkLkEk vfHkfØ;kk gkUk Ikj CkkYVhUkEkk Ikk«k d UkhPk RkUk ,fLkfVd vEYk IkkIRk gkRkh gA

2 vd

(iii) $CH_3COOH + NH_4OH \rightarrow CH_3COONH_4 + H_2O$ 1 vd

¼vFkZkk½

(i) 1- $C_{12}H_{22}O_{11} + H_2O \xrightarrow{\text{TkkbEkTk}} C_6H_{12}O_6 + C_6H_{12}O_6$ 1 vd

2- $C_6H_{12}O_6 \xrightarrow{\text{bUoVt}} 2C_2H_5OH + 2CO_2$

(ii) **f0kf/k&** 1- RkUk dj.k&'khj dk 8&10 lkfRk'kRk RkUk fd,kk TkkRkk gA 2 vd

2- vkEkkfUk,kk LkYQV&fEkYkkRk g Tkk ,khLV dk HkkTkUk gA

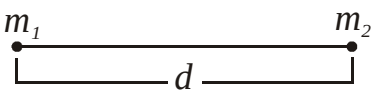
3- H_2SO_4 fEkYkkRk g fTkLkLk 'khj Ek mlkfLFkRk Tkh0kk.k Uk"V gk TkkRk gA

4- vCk bLkEk 5 lkfRk'kRk ,khLV fEkYkk dj 2&3 fnUk d fYk, j[k fn,kk TkkRkk g vfHkfØ,kk d lk'PkkRk 10 lkfRk'kRk ,Ydkgk Yk lkkIRk gkRkk Tkk 0kk'k dgYkkRkk gA

5- 0kk'k dk vkLk0kUk djUk lkj 90 lkfRk'kRk ,fFkYk ,Ydkgk Yk lkkIRk gkRkk gA

(iii) $2C_2H_5OH + 2Na \rightarrow 2C_2H_5ONa + H_2$ 1 vd

mÙkj 13 **0,kRØEk 0kXk dk fUk,kEk&** ^^fdUgh nk PkECk dh,k /k0kk d CkhPk YkXkUk 0kkYk vkd"k.k CkYk ,kk lkfRkd"k.k CkYk mUk dh /k0k lkCkYkRkk vk d Xk.kUkQYk d LkEkkUk lkkRkh RkFkk /k0kk d CkhPk dh njh d 0kXk d 0,kRØEkkUk lkkRkh gkRkk gA** 1 vd



,kfn m_1, m_2 /k0k lkCkYkRkk 0kkYk nk /k0k dh CkhPk dh njh d gk Rkk

$$F \propto m_1 m_2 \quad \text{RkFkk} \quad F \propto \frac{1}{d^2}$$

,kk $F \propto \frac{m_1 m_2}{d^2}$,kk $F = K\frac{m_1 m_2}{d^2}$ 1 vd

Tkgk K ,d vUklkkfRkd fUk,kRkk d g

,dkd /k0k & dYkkEk d Lk«k Ek

$m_1 = m_2 = m,\ d = 1,\ F = 10^{-7}$ U;kVUk] j[kUk lkj

$K = 10^{-7}$ gUkjh@EkhVj

$$10^{-7} = \frac{10^{-7} mm}{1^2} \text{ ¾ } 10^{-7}$$ 1 vd

^^vRk% ,dd /kOk 0kg /kOk g Tkk fUk;kkRk Ek 1 EkhVj dh njh lkj j[k LkEkkUk /kOk dk 10 U;kVUk d CkYk Lk lkfRkdf"kRk djRkk gA** 1 vd

¼vFkZ½

fPk«k Ek] PkECk dh;k {k«k dh RkhOkRkk I dk OB fn'kk Ek {kfRkTk ?kVd H dk OA fn'kk Ek m/Okk/kj ?kVd V dk OC fn'kk Ek RkFkk UkEkUk dk.k θ dk $\angle AOB$ Lk lknf'kRk fd;kk Xk;kk gA

LkEkdk.k ΔOAB Ek

$$\cos\theta = \frac{OA}{OB} \text{ RkFkk } \sin\theta = \frac{AB}{OB}$$

$$OA = OB\cos\theta \text{ RkFkk } AB = OB\sin\theta$$

fp= e] $OA = H,\ AB = OC = V,\ OB = I$

$\therefore$ $H = I\cos\theta$ .....(i) RkFkk

$V = I\sin\theta$ .....(ii)

LkEkh dj.k (ii) dk lehdj.k (i) l Hkkx nu ij

$$\frac{V}{H} = \frac{I\sin\theta}{I\cos\theta} = tan\theta$$

$$V = H\tan\theta$$

iuk% lehdj.k (i) o (ii) dk ox dj tkMu ij

$$H^2 + V^2 = I^2 \cos^2\theta + I^2 \sin^2\theta = I^2 (\cos^2\theta + \sin^2\theta) = I^2$$

$$H^2 + V^2 = I^2 \quad [\because \cos^2\theta + \sin^2\theta = 1]$$

mÙkj 14 #f/kj d Pkkj dk,k dk 0k.kUk &

1- **vkDLkhTkUk dk Ikfj0kgUk** & ghEkkXYkkfCkUk '0kLkUk }kjk Ykh Xkb vkDLkhTkUk Lk Lk,kDRk gkdj vkDLkh fgEkkXYkkfCkUk CkUkkRkk g fTkLkdk Ikfj0kgUk Ikj 'kjhj Ek gkRkk gA

2- dkCkUk Mkbv kDLkkbM dk Ikfj0kgUk& #f/kj IYkkTEkk ,0k ghEkkXYkkfCkUk }kjk CO_2 dk Ikfj0kgUk gkRkk gA

3- Ikk"kd IknkFkk dk Ikfj0kgUk & IkfPkRk ,0k v0k'kkf"kRk Ikk"kd IknkFk TkLk XYkdkTk] vEkhUkk vEYk] 0kLkk vEYk dk Ikfj0kgUk gkRkk gA

bLkh Ikdkj vU,k dk,k dk 0k.kUk djUk Ikj Hkh 1 vd IknkUk fd,k Tkk,kA

¼vFk0kk½

YkLkhdk d Pkkj dk,kk dk LkEkÖkkUkk&

1- YkLkhdk gkfUkdkjd Tkh0kkvk dk Uk"V dj gkfUkdkjd IknkFkk dk 'kjhj Lk EkDRk djRkh gA

2- IkPk g, 0kLkk dk v0k'kk"k.k dj 'kjhj d f0kfHkUUk HkkXkk Ek IkgPkkRkh g ,0k vk0k',kdRkkUkLkkj LkfPkRk djUk Ek Lkgk,kRkk djRkh gA

3- 'kjhj Ek PkkV YkXkUk Ikj ?kk0k HkjUk Ek jDRk ,0k 'kjhj Lk EkDRk djUk Ek Lkgk,kRkk djRkh gA

mÙkj 15 LkjYk v.kvk d Lk,kkTkUk Lk CkUk mPPkRkj vk.kf0kd Hkkj 0kkYk ,kkfXkdk dk CkgYkd dgRk gA

1- IkkÑfRkd CkgYkd & bUkEk Lk dkb nk fYk[kUk Ikj &2 vd

(a) IkkÑfRkd jCkj (b) IkkVhUk (c) U,kfDYkd vEYk (d) IkkfYkLkdjkbM

2- Lk'Ykf"kRk CkgYkd& bUkEk Lk dkb nk fYk[kUk Ikj &2 vd

(a) j¸kkUk (b) Ukk¸kYkkUk (c) VjhYkhUk (d) CkdYkkbV
(e) VkVYkkUk (f) Lk'Ykf"kRk jCkj

¼vFkOkk½

(i) P.V.C. dk Ikjk UkkEk &IkkYkh Okkbf UkYk DYkkjkbM & 1 vd

(ii) Lk«k& $\left[\begin{array}{c} CH_2-CH- \\ | \\ Cl \end{array}\right]$ 1 vd

(iii) Xk.k& 1- n< lYkkfLVd g ¼bue l dkb rhu fy[ku ij 3 vd½

2- ¸kg f0k|Rk dk dPkkYkd gA

3- ¸kg TkYk IkfRkjk/kh g

4- ¸kg m"Ekk 0k jLkk¸kUkk Lk vIkHkkf0kRk jgRkk gA

mÙkj 16- vkDLkh 'OkLkUk ,Ok vUkkDLkh 'OkLkUk Ek IkkPk vRkj & (1×5)

vkDLkh'OkLkUk	**vUkkDLkh 'OkLkUk**
1- ¸kg fØ¸kk vkDLkhTkUk dh mIkfLFkfRk Ek gkRkh gA	1- ¸kg fØ¸kk vkDLkhTkUk dh vUkIkfLFkfRk Ek gkRkh gA
2- bUkEk HkkT¸k Iknkfkk dk Ik.k vkDLkhdj.k gkRkk gA	2- bLkEk HkkT¸k Iknkfkk dk vIk.k vkDLkhdj.k gkRkk gA
3- bLk fØ¸kk dk vfRkEk mRIkkn CO_2 vkj TkYk gA	3- bLk fØ¸kk dk vfRkEk mRIkkn CO_2 ,Ok ,Ydkgkyk ¸kk YkfDVd vEYk gA

4-	bLk fØ¸kk Ek 1 v.k XYkdkTk Lk 38 ATP d v.k lkkIRk gkRk gA	4- bLk fØ¸kk Ek 1 v.k XYkdkTk Lk 2 ATP d v.k lkkIRk gkRk gA
5-	vf/kdk'k TkhOkk Ek ¸kg fØ¸kk gkRkh jgRkh gA	5- ¸kg fØ¸kk CkgRk dEk TkhOkk Ek gkRkh gA

Vhlk& vU¸k vURkj fYk[kUk lkj Hkh lkR¸kd d fYk, 1 vd fn¸k Tkk¸kXkA

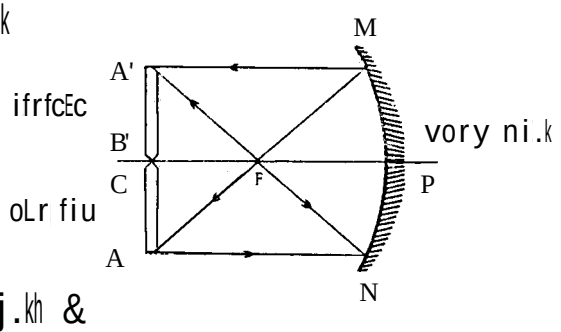
¼vFkOkk½

'OkLkkPNOkkLk	'OkLkUk
1- ¸kg dkf'kdkvk d Ckkgj gkRkh gA	1- ¸kg fØ¸kk dkf'kdkvk d HkhRkj gkRkh gA
2- bLk fØ¸kk Ek ,UTkkbEk dh vkOk'¸kdRkk Ukgh gkRkh gA	2- bLk fØ¸kk Ek ,UTkkbEk dh vkOk'¸kdRkk gkRkh gA
3- ¸kg ,d ¸kkf«kd fØ¸kk gA	3- ¸kg ,d TkOk jkLkk¸kfUkd fØ¸kk gA
4- bLk fØ¸kk Ek mTkk Ukgh gkRkh gA	4- bLk fØ¸kk Ek mTkk EkDRk gkRkh gA
5- bLkd vRkXkRk O_2 ¸kDRk Okk¸k dk 'kjhj d vnj RkFkk CO_2 'kjhj Lk Ckkgj fd¸kk TkkRkk gA	5- bLkd vURkXkRk HkkT¸k lknkFkk dk vkDLkhdj.k fd¸kk TkkRkk gA

mÙkj 17 vOkRkYk nlk.k dh Qkd Lk njh

1- fLk)kRk & ¸kfn dkb OkLRk nlk.k d OkØRkk dæ lkj gk Rkk mLkdk lkfRkfCkECk OkØRkk dæ lkj gh CkUkRkk g vRkh OkØRkk dæ dh fLFkfRk KkRk djd OkØRkk f«kT¸kk fUkdkYk dj vk/kk djUk lkj nlk.k dh Qkd Lk njh KkRk gk TkkRkh gA 1 vd

2- UkkEkkfdRk fPk«k 2 vd



3- vOkYkkdUk Lkkj.kh &

ØEkkd	nlk.k dh fLFkfRk	0kLRk flkUk dh fLFkfRk	0kØRkk f«kT,kk	QkdLk njh
1				
2				
3				

¼vFk0kk½

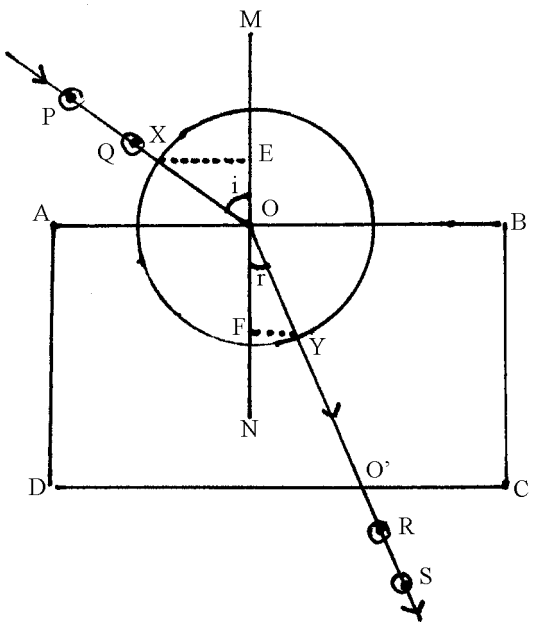
fLk)kRkh– (i) LUkYk d fUk,kEk Lk $\mu = \frac{\sin i}{\sin r}$

$$\sin i = \frac{XE}{OX}, \quad \sin r = \frac{YF}{OY}$$

eku j[ku ij] $\mu = \frac{XE/OX}{YF/OY}$ pfd $OY = OX$

$$\mu = \frac{XE}{YF}$$

(ii)



(iii) voykdu rkfydk

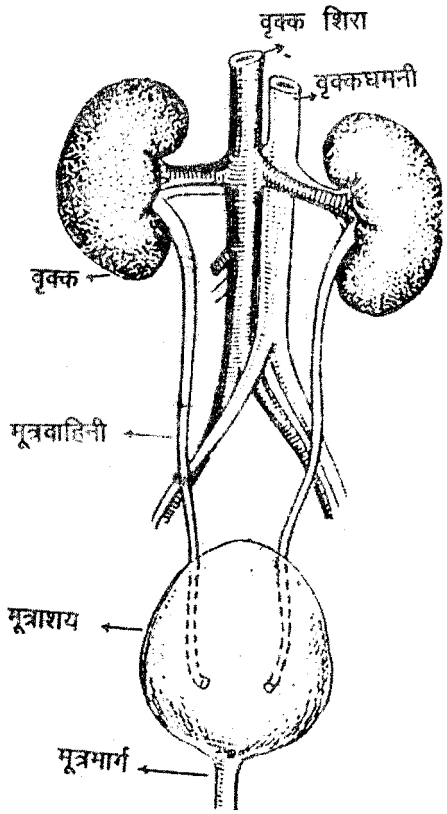
ØEkkd	*XE* dh YkCkkb	*YF* dh YkCkkb	

mÙkj 18- (i) LkYk (ii) CkVjh (iii) [kYkh dTkh (iv) Lk,kkTkd Rkkj (v) lkfRkjk/k (vi) /kkjk fUk,k«kd

¼vFkOkk½

(i) Ckn dTkh (ii) /kkjkEkkIkh (iii) vEkhVj (iv) Lkf/k Rkkj (v) fCkUkk Lkf/k Rkkj ØkfLkXk (vi) ¶,kTk A

mÙkj 19



EkkUkOk mRLkTkUk dk UkkEkkfdRk fPk«k

(i) fPk«k CkUkkUk lkj 2 vd (ii) UkkEkkfdRk djUk lkj 2 vd (iii) Ok.kUk djUk lkj 2 vd A

0kDd & EkkUk0k 'kjhj dk lkEk[k mRLkTkh vXk g Tkk mRLkTkh lknkFkk dk vYkXk dj nRkk g ,kg Xkgj YkkYk jXk dk ,d TkkMh ik,kk TkkRkk gA

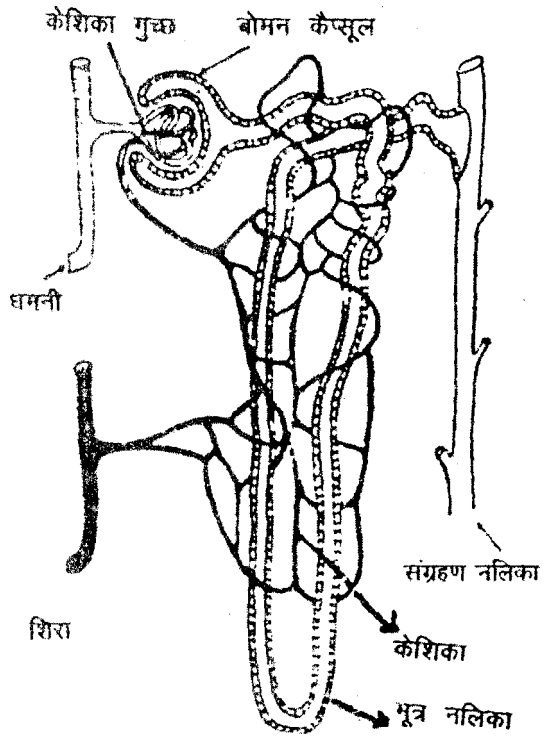
Ek«k0kkfgUkh & lkR,kd Ek«k 0kkfgUkh,kk 20 Lk 30 Lk-Ekh- YkECkh gkRkh g vkj Ek«kk'k,k Ek Tkkdj [kYkRkh gA

Ek«kk'k,k& ,d FkYkh d LkEkkUk gkRkk g fTkLkEk Ek«k LkXkfgRk gkRkk gA

Ek«kEkkXk & Ek«kk'k,k ,d Lkdjh UkYkh }kjk Ckkgj [kYkRkk g fTkLk Ek«kEkkXk dgRk gA

¼vFk0kk½

mÙkj 19



0k.kUk

(i) vfRk Lk{Ek NUkUk& ,kg fØ,kk CkkEkUk LkIkV Ek gkRkh g vfHk0kkgh ,0k vlk 0kkgh /kEkfUkdk }kjk fUkfEkRk df'kdk XkPn }kjk NUkUk dh IkfØ,kk gkRkh gA bUkEk IkkVhUk Lk #f/kj NUkRkk gA vkj CkkEkUk LkIkV Ek bdëk gkRkk gA bUkEk IkkVhUk d CkM v.k Ukgh NUk IkkRk g vkj NkV v.k NUk TkkRk g bLk fØ,kk dk Mk,kfYkfLkLk dgRk gA bLk Ikdkj UkÝkUk MkbfYkfLkLk FkYk d LkEkkUk dk,k djRkh gA

(i) 0kj.kkREkd v0k'kk"k.k& 0kDd UkfYkdk Ek XYkdkTk] [kfUkTk TkYk ,0k vU;k mlk;kkXkh lknkFkk dk v0k'kk"k.k gk TkkRkk g vkj vUkIk;kkXkh lknkFk dk v0k'kk"k.k Ukgh gkRkk gA

(i) UkYkdh;k L«kk0k.k & 0kDd UkfYkdkvk dh #f/kj dkf'kdkvk }kjk vUkIk;kkXkh lknkFkk dk L«kk0k.k gkRkk g ;kg LkXkg UkfYkdk Ek ,df«kRk gkdj Ek«kk'k;k Ek lkgPk TkkRkk g bLk LkXkfgRk æ0k dk Ek«k dgRk gA

¼fPk«k lkj 2 vd] UkkEkkdUk lkj 2 vd] 0k.kUk lkj 2 vd½

Set - C

gkb Ldy lfVfQdV ijh{kk

High School Certificate Examination

lEiy&i'u i=

SAMPLE PAPER

fo"k; %& (Subject) - foKku **le; 3 ?k.Vk (Time- 3 Hrs)**

d{kk %& (Class) - nloh **i.kZd 75 (M.M.)**

(Instruction) & ¼fun'kZ½

1- lHkh i'u gy djuk vfuok;Z g A

Attempt all the Question

2- i'u Øekd 01 e 10 vad fu/kkfjr g A nk mi[k.M g A [k.M ^^v** e 05 cgfodYih; i'u rFkk [k.M ^^c** e 05 fjDr LFkkuk dh ifr vFkok mfpr lc/k tkfM, A iR;d i'u d fy, 1 vad vkcfVr g A

Q. No. 01 Carries 10 Marks. There are two sub-section, Section A is Multiple choice carries 05 marks and section B is fill in the blanks or match the column carries 05 marks.

3- i'u Øekd 02 l i'u Øekd 06 rd vfr y?kqRrjh; i'u g A iR;d i'u ij 02 vad vkcfVr g A mRrj dh vf/kdre 'kCn lhek 30 'kCn A

Q. No. 2 to 06 are very short answer type question & it carries 02 marks each. Word limit is maximum 30.

4- i'u Øekd 07 l i'u Øekd 10 rd y?kqRrjh; i'u g A iR;d i'u ij 03 vad vkcfVr g A mRrj dh vf/kdre 'kCn lhek 50 'kCn A

Q. No. 07 to 10 are short answer type question & it carries 03 marks each. Word limit is maximum 50.

5- i'u Øekd 11 l i'u Øekd 14 rd y?kqRrjh; i'u g A iR;d i'u e vkrfjd fodYi g vkj iR;d i'u ij 04 vad vkcfVr g A mRrj dh vf/kdre 'kCn lhek 75 'kCn A

Q. No. 11 to 14 are short answer type question & it carries 04 marks each. Each question has internal choice. Word limit is maximum 75.

6- i'u Øekd 15 l i'u Øekd 17 rd nh?kmRrjh; i'u g A iR;d i'u e vkrfjd fodYi g vkj iR;d i'u ij 05 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 100 'kCn A

Q. No. 15 to 17 are long answer type question & it carries 05 marks each. Each question has internal choice. Word limit is maximum 100.

7- i'u Øekd 18 l i'u Øekd 19 rd nh?kmRrjh; i'u g A iR;d i'u e vkrfjd fodYi g vkj iR;d i'u ij 06 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 150 'kCn A

Q. No. 18 to 19 are long answer type question & it carries 06 marks each. Each question has internal choice. Word limit is maximum 150.

Ik'Uk 1 ¼v½ Lkgh fOkdYIk dk PkUkkOk dj mLk vlkUkh mRRkj lkfLRkdk Ek fYkf[k, &

1- gj jXk dk dkPk CkUkkUk d fYk, ¸kkfXkd dk mlk¸kkXk fd¸kk TkkRkk g&

(a) fUkfdYk vkDLkkbM (b) EkXkUkhTk vkDLkkbM

(c) ØkfEkd vkDLkkbM (d) dMfEk¸kEk

2- LkkE¸kkOkLFkk Ek fUkdk¸k dh ÅTkk dk EkkUk gkRkk g&

(a) vf/kdRkEk (b) U¸kUkRkEk

(c) 'kU¸k (d) mlkjkDRk Ek Lk dkb Ukgh A

3- ,d RkROk dk bYkDVkfUkd fOkU¸kkLk 2] 8] 3 g ¸kg RkROk gkXkk &

(a) s&CYkkd RkROk (b) p&CYkkd RkROk

(c) d& CYkkd RkROk (d) f&CYkkd RkROk

4- ,d ,fElk¸kj dk EkkUk gkRkk g&

(a) $\frac{1\ dYkkEk}{1\ ld.M}$ (b) $\frac{1\ ld.M}{1\ dYkkEk}$

(c) 1 dYkkEk × 1 LkdM (d) mlkjkDRk Ek Lk dkb Ukgh A

5- Ik0kUk PkDdh dk lkPkkfYkRk djUk d fYk, U¸kUkRkEk 0kk¸k dh XkfRk vk0k'¸kd gA

(a) 10 fd-eh-@?kVk (b) 15 fd-eh-@?kVk

(c) 20 fd-eh-@?kVk (d) 25 fd-eh-@?kVk

Que 1 (A) Choose he correct option and answer -

(i) The compund used for making green colour glass -

(a) Nickel oxide (b) Manganese oxide

(c) chromic oxide (d) cadmium.

(ii) A euilibrium the energy of a system is -

(a) maximum (b) minimum

(c) zero (d) none of the above

(iii) The electronic configuration of an element is 2, 8, 3. The element is -

(a) 5- block element (b) p-block element

(c) d-block element (d) f-block element

(iv) The value of one ampere is -

(a) $\frac{1 \text{ coulomb}}{1 \text{ second}}$ (b) $\frac{1 \text{ second}}{1 \text{ coulomb}}$

(c) 1 coulomb × 1 second (d) none of the above

(v) The minimum speed of the wind required to run a wind mills is -

(a) 10 km/hr. (b) 15 km/hr.

(c) 20 km/hr. (d) 25 km/hr.

¼Ck½ fjDRk LFkkUkk dh lkfRk dhfTk, A

1- 10 vkEk d 5 lkfRkjk/kk dk J.khØEk Ek Lk¸kkfTkRk fd¸k Xk, gA mUkdk lkfj.kkEkh lkfRkjk/k &&&&&&&&&gkXkk A

2- UkEk Ykkg dk PkEcfdRk djUkk 0k f0kPkECkfdRk djUkk LVhYk dh RkYkUkk Ek &&&&&&&& gA

3- mlk0kkLk d LkEk¸k ÅTkk&&&&&&&&&&&Lk lkkIRk gkRkk gA

4- vlkdk'kh¸k fØ¸kk Ek CO_2 d fLFkjhdj.k Lk &&&&&&&&&&CkUkRkk gA

5- 0kk¸k lkn"k.k d fYk, Tkh0kk'Ek b/kUkk dk &&&&&gh Ek[¸k dkj.k gA

(B) Fill in the blanks -

1. Five resistances of 10 ohm each are connected in series. The resultant resistance is .....

2. Magnetisation and demagnetisation of iron in comparison to steel is .....

3. During fasting energy is obtained from .....

4. In dark reaction ..... is formed by the fixation of CO_2

5. The main cause for the air pollution is the ..... of fossil fuel.

lk'Uk 2 lkXkYkUk dk lkfjHkkf"kRk dhfTk, 2 vd

Define smelting.

lk'Uk 3 lk.k vkRkfjd lkjk0kRkUk dh nk 'kRk fYkf[k, A 2 vd

Write the two essential conditions for total internal reflection.

lk'Uk 4 vURkXkg.k dk lkfjHkkf"kRk dhfTk, 2 vd

Define Ingestion.

lk'Uk 5- ,d PkkYkd dk lkfRkjk/k 20 vkEk gA PkkYkd Ek ,d ,fElk¸kj dh /kkjk lk0kkfgRk djUk lkj fdRkUkk f0kHk0kkURkj mRlkUUk gkXkk A l = 1 vd] x.kuk 1 vd

A conductor has resistance of 20 ohms and one amphere current flows

through it. What will be potential difference across it.

Ik'Uk 6- DYkkEk '0kLkUk dk LIk"V dhfTk, 2 vd

Explain respiration through gills.

Ik'Uk 7- Eknk Ikn"k.k d RkhUk dkj.k fYkf[k, ¼1$1$1½

Write three causes of Soil pollution.

Ik'Uk 8- jkLkk,kfUkd LkEkhdj.k nhfTk, & IkR,kd Ikj 1 vd A

1- XkEk C ¼dkcu½ Ikj TkYk dh 0kk"Ik Ik0kkfgRk dh TkkRkh gA

2- CkÖk g, PkUkk Ikj DYkkjhUk XkLk Ik0kkfgRk djRk gA

3- $NaHCO_3$ dk XkEk fd,kk TkkRkk gA

Give chemical equations -

(i) Water vapour is passed over heated C (Carbon).

(ii) Cl_2 gas passed over slaked lime.

(iii) $NaHCO_3$ is heated.

Ik'Uk 9- /kkRk ,0k v/kkRk Ek HkkfRkd Xk.kk d vk/kkj Ikj RkhUk vRkj fYkf[k, A ¼1$1$1½

Write three differences in physical properties of metal and non metals.

Ik'Uk 10- LFkkb XkCkTk dk Ckk,kkXkLk Lk,k«k dk d0kYk UkkEkkfdRk fPk«k CkUkkb,kA 3 vd

Draw a labelled diagram of fixed dome type biogas plant.

Ik'Uk&11 vfHkfØ,kk nj dk IkHkkf0kRk djUk 0kkYk Pkkj dkjdk dk o.ku dhft, A ¼1$1$1$1½

Give four factors that affect the rate of reaction.

¼vFkZkk½

jkLkk;fud LkkE;k d Pkkj lkEk[k Yk{k.k fYkf[k, A ¼1$1$1$1½

Give four main characteristics of chemcial equilibrium.

lk'Uk&12 ,fLkfVd vEYk fUkEkk.k dh 'kh?k fLkjdk f0kf/k dk fUkEUkkfdRk 'kh"kdk Ek 0k.kUk dhfTk,A

(i) vfHkfØ;kk dk jkLkk;fud LkkEkhdj.kA 1 vd

(ii) lk;kkXk f0kf/k Lk{klk Ek A 2 vd

(iii) ,fLkfVd vEYk dh NH_4OH Lk vfHkfØ;kk dk d0kYk LkEkhdj.kA 1 vd

Describe the quick Vinegar process of manufacture of acetic acid on the headings given below.

(i) Chemical equation of the reaction.

(ii) Laboratory method in brief.

(iii) Chemical equation for the reaction of acetic acid with NH_4OH.

¼vFkZkk½

,fFkYk ,Ydkgkyk fUkEkk.k dh fd.oUk f0kf/k dk 0k.kUk fUkEUkkfdRk 'kh"kdk d vRkXkRk dhfTk,A

(i) vfHkfØ;kk dk jkLkk;fud LkkEkhdj.k & 1 vd

(ii) f0kf/k dk Lk{klk Ek 0k.kUk & 2 vd

(iii) ,fFkYk ,Ydkgkyk dh Na /kkRk Lk vfHkfØ;kk dk LkEkhdj.k A 1 vd

Describe the fermentation method for the manufcture of ethyl alcohol

under the following headings.

(i) Chemical equation of the reaction.

(ii) Brief description of the process.

(iii) Chemical equation for the reaction of ethyl alcohol and Na Metal.

Ik'Uk&13 PkECk dR0k d fYk, dYkkEk dk 0;kRØEk 0kXk dk fUk;kEk fYk[kdj ,dkd /k0k dk LkEkÖkkb;k A ¼3$1½

Write the Coulomb's inverse square law of magnetism and explain unit pole.

¼vFk0kk½

fLk) dhfTk, %& $V = H \tan\theta$ ¼2$2½

$$I^2 = H^2 + V^2$$

Tkgk θ ¾ UkEk.k dk.k

I ¾ lkF0kh dh Lkk.k Rkh0kRkk

H ¾ lkF0kh dh {kfRkTk ?kVd

V ¾ m/0kk/kj ?kVd gA

Prove that :- $V = H \tan\theta$ ¼2$2½

$$I^2 = H^2 + V^2$$

Where θ = Angle of declination.

I = Total intensity of earth's magnetic field

H = Horizontal component of earth's magnetic field

V = Vertical component.

Ik'Uk&14 : f/kj d fdUgh Pkkj dk¸kk dk Ok.kUk dhfTk,A ¼1$1$1$1½

Describe any four functions of blood.

¼vFkOkk½

YkLkh dk d fdUgh Pkkj dk¸kk dk Ok.kUk dhfTk,A ¼1$1$1$1½

Describe any four functions of lymph.

Ik'Uk&15 CkgYkd fdLk dgRk g\ IkkÑfRkd ,Ok Lk'Ykf"kRk CkgYkd d nk&nk mnkgj.k ndj LkEkÖkkb¸kA ¼1$1$1$1$1½

What are polymers? Explain giving two examples for each natural and synthetic polymers.

¼vFkOkk½

P.V.C. dk Ikjk UkkEk vkj Lk«k fYk[kdj bLkd RkhUk Xk.k fYkf[k,A

Write the full name and formula of P.V.C. and give three properties of it.

Ik'Uk&16 vkDLkh'OkLkUk ,Ok vUkkDLkh 'OkLkUk Ek IkkPk vRkj fYkf[k,A ¼1$1$1$1$1½

Give five differences between aerobic and anaerobic respiration.

¼vFkOkk½

'OkkLkkPNOkkLk ,Ok 'OkLkUk Ek IkkPk vRkj fYkf[k,A ¼1$1$1$1$1½

Give five differences between breathing and respiration.

Ik'Uk&17 Ik¸kkXk 'kkYkk Ek vOkRkYk nIk.k dh Qkdl njh KkRk djUk dh ,o fIkUk f0kf/k dh Ik¸kkXk dk Ok.kUk fUkEUkkfdRk 'kh"kdk d vRkXkRk dhfTk,A

(i) fLk)kRk (ii) UkkEkkfdRk j[kkfPk««k (iii) v0kYkkdUk Lkkfj.khA ¼1$2$2½

Describe the single pin method to find out the focal length of a concave mirror on the following headings -

(i) Theory (ii) Labelled diagram (iii) Observation table.

¼vFk0kk½

Ik,kkXk'kkYkk Ek dkPk d vk,kRkkdkj XkVd dk vIk0kRkUkkd KkRk djUk d Ik,kkXk dk 0k.kUk fUkEUkkfdRk 'kh"kdk d vURkXkRk dhfTk,A ¼1$2$2½

(i) fLk)kRk (ii) UkkEkkfdRk j[kkfPk««k (iii) v0kYkkdUk Lkkfj.kh

Explain the determination of refractive index of a glass slab in the laboratory on the following prints -

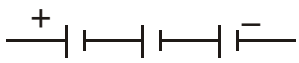
(i) Principle (ii) Labelled diagram (iii) Observation table.

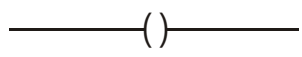
Ik'Uk&18 f0k|Rk IkfjIkFk Ek mIk,kkXk gkUk 0kkYk fUkEUkkfdRk Lkd Rkk d UkkEk fYkf[k,A &

Write the names of the following symbols used in an electric circuit.

IkR,kd Ikj 1 vd

(i) 

(ii) 

(iii) 

(iv)

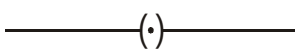
(v) 

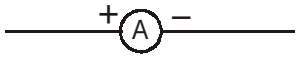
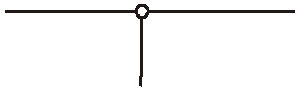
(vi) 

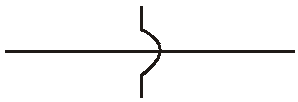
¼vFk0kk½

f0k|Rk IkfjIkFk Ek mIk,kkXk gkUk 0kkYk fUkEUkkfdRk Lkd Rkk d UkkEk fYkf[k,kA

Write the names of the following symbols used in an electric circuit.

(i)  (ii) 

(iii)  (iv) 

(v)  (vi) 

lk'Uk&19 EkkUk0k Ek mRLkTkUk Rk«k dk LkfPk«k 0k.kUk dhfTk, ½2$2$2½

Explain the excretory system of a man with a labelled diagram.

¼vFk0kk½

EkkUk0k Ek Ek«k fUkEkk.k dh lkfØ,kk dk LkfPk«k 0k.kUk dhfTk,A

Explain the process formation of urine with a labelled diagram.

vkn'k mRRkj lV&lh

mRRkj 1 v- 1×5 = 5

(i) (c) ØkfEkd vkDLkkbM

(ii) (b) U;wkUkRkEk

(iii) (b) p–CYkkd RkROk

(iv) (a) $\frac{1\ dYkkEk}{1\ ld.M}$

(v) (b) 15 km/h.

mRRkj 1 Ck- 1×5 = 5

(i) 50 vkEk

(ii) vf/kd Lkjyk

(iii) LkfPkRk XYkkbdkTkUk

(iv) dkCkkgkbMV

(v) vlk.k ngUk

mRRkj 2- Hktu@fØ;k l ikIr fUkLRkkflkRk v;wkLd dk dkd dh mlkfLFkfRk Ek 0kkR;wkkHkëh Ek XkYkkUk dh fØ;wkk dk lkXkYkUk dgRk gA 2 vd

mÙkj 3 lk.k vkRkfjd lkjk0kRkUk dh nk 'kRk& 1$1 vd

1- lkdk'k fdj.k dk Lk?kUk Ekk/;wkEk Lk f0kjYk Ekk/;wkEk Ek TkkUkk Pkkfg, A

2- vklkRkUk dk.k d EkkUk dk ØkfRkd dk.k d EkkUk Lk Lkn0k vf/kd gkUkk Pkkfg,A

mRRkj 4 vURkXkg.k & vURkXkg.k 0kg fØ;wkk g fTkLkd }kjk HkkT;wk lknkFkk dk Tkh0k 'kjhj

d vnj Xkg.k djRk gA bLk fØ;kk Ek Ek[k] Xkgk] nkRk] gkFk] LIk'kd dVIkkn bR;kkfn Lkgk;kRkk djRk gA 2 vd

mÙkj 5 $I = \frac{V}{R}$ Tkgk Ikj $R = 20, I = 1$,fEIk;kj A 1 vd

EkkUk j[kUk Ikj $V = IR$ 1 vd

$= 1 \times 20$

= 20 0kkYV

mRRkj 6 TkYkh;k Tkh0k Ek '0kLkUk gRk DYkkEk (Gills) Ikk;k TkkRk g fTkUkEk #f/kj dkf'kdkvk dk TkkYk fCkNk jgRkk g fTkLkLk gkdj TkYk XkTkjRkk g vkj TkYk Ek ?kYkh O_2 bUgh dkf'kdkvk e fo|fjr gk tkrh g vkj 'olu dh fØ;k d nkjku cuh CO_2 bUgh dkf'kdkvk d }kjk 0kkIkLk TkYk Ek HkTk nh TkkRkh gA 2 vd

mRRkj 7 Eknk Ikn"k.k d dkj.k & 1$1$1 vd

1- IYkkfLVd] jCkj] PkEkMk] dkPk vkfn dk Eknk Ek fEkYkUk LkA

2- EkUk";k ,Ok Tkh0kTkRk d EkYk dk Lkgh fUkIkVkjk Ukgh djUk LkA

3- vk|kfXkd vIkf'k"Vk dk HkfEk Ek Qd nUk LkA

¼vU;k dkj.k fYk[kUk Ikj IkR;kd dkj.k Ikj 1 vd Iknkuk fd;k Tkk;kA½

mRRkj 8 1- $C + H_2O \rightarrow CO + H_2$ ¼0kkVj XkLk½ ¼iR;d e 1 vd½

2- $Ca(OH)_2 + Cl_2 \rightarrow CaOCl_2 + H_2O$

3- $NaHCO_3 \xrightarrow{\text{xe}} Na_2CO_3 + CO_2 + H_2O$

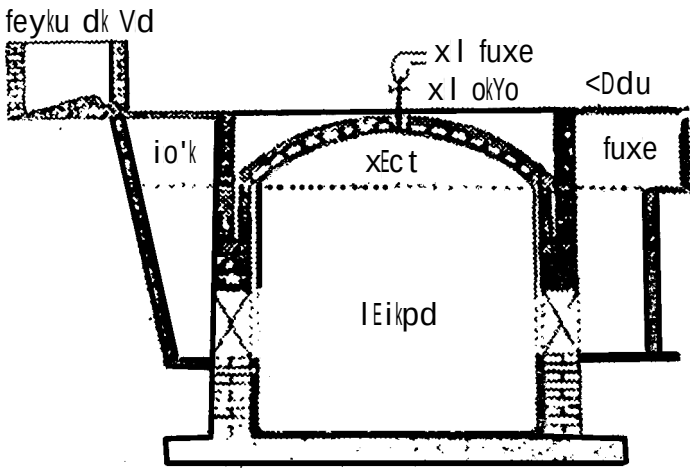
mRRkj 9 /kkRk ,Ok v/kkRk Ek vRkj ¼1$1$1½

/kkRk		v/kkRk	
?kUkR0k&1-	?kUkR0k vf/kd gkRkk gA	1-	?kUkR0k dEk gkRkk gA
voLFkk&2-	LkkEkkU¸k RkkIk Ikj BkLk v0kLFkk Ek Ikk¸k TkkRk g	2-	LkkEkkU¸k RkkIk Ikj RkhUkk v0kLFkk Ek IkkIRk gkRk gA
PkkYkdRkk&3-	/kkRk f0k|Rk ,Ok m"Ekk d PkkYkd gkRk gA vIk0kkn&Pb	3-	f0k|Rk ,Ok m"Ekk d dPkkYkd gkRk gA vIk0kkn&XkQkbV

¼vU¸k HkkfRkd Xk.kk d vRkj fYk[kUk Ikj IkR¸kd d fYk, 1 vd fn¸k Tkk¸kA½

mRRkj 10 Ckk¸kk XkLk dk UkkEkkfdRk fPk«k ¼UkkEkkfdRk fPk«k CkUkkUk Ikj 3 vd½

¼1½$1½½



mÙkj 11 vfHkfØ¸kk nj dk IkHkkf0kRk djUk 0kkYk dkjd& 1 × 4 ¾ 4

1- vfHkdkjdk dk Lkkæ.k ¼iR;d dk o.ku½

2- vfHkfØ¸kk dk RkkIk

3- mRIkjd dh mIkfLFkfRk

4- vfHkfØ¸kk dk nkCk

5- Ik"B dk {k«kQYk

VhIk& dkb Pkkj dkjd fYk[kUk Ikj Hkh 4 vd Iknkuk fd,k Tkk,kA

¼vFkOkk½

jkLkk,kfUkd LkkE,k d Pkkj IkEk[k Yk{k.k

1- nkUkk fn'kkvk Ek gkUk OkkYk IkØEkk dh XkfRk Ckjkckj Ykfduk f0kIkfjRk gkRkh gA

2- vfHkfØ,kk fdLkh Hkh fn'kk Ek Ik.kRkk IkkIRk Ukgh djRkh gA

3- vfHkdkjdk RkFkk mRIkknk dh Ekk«kk, LkkE,k fEkJ.k Ek fLFkj jgRkh gA

4- RkkIk] nkCk vFkOkk LkkUæ.k d Ikfj0kRkUk Lk LkkE,k0kLFkk Ek Hkh Ikfj0kRkUk gkRkk gA

mÙkj 12 (i) vfHkfØ,kk dk jkLkk,kfUkd LkEkh dj.k & 1 vd

$$C_2H_5OH + O_2 \xrightarrow{,fLkVk\ CkDVj} CH_3COOH + H_2O$$

(ii) **f0kf/k &** ,fFkYk ,Ydkgkyk dk vkDLkhdj.k ,LkhVk CkDVj dh mIkfLFkfRk Ek djUk Ikj RkUk ,fLkfVd vEYk IkkIRk gkRkk gA bLk f0kf/k Ek CkkYVhUkEkk Ikk«k Ek Ikjkuk fLkjd Lk HkhXkh Ykdmh dk NhYkUk Hkjdj FkkMh Ekk«kk Ek $(NH_4)_2SO_4$ fEkYkkdj mIkj Lk ,fFkYk ,Ydkgkyk ,0k UkhPk Lk 0kk,k Ik0kkfgRk fd,kk TkkRkk g fTkLkEk vfHkfØ,kk gkUk Ikj CkkYVhUkEkk Ikk«k d UkhPk RkUk ,fLkfVd vEYk IkkIRk gkRkh gA

2 vd

(iii) $CH_3COOH + NH_4OH \rightarrow CH_3COONH_4 + H_2O$ 1 vd

¼vFkOkk½

(i) 1- $C_{12}H_{22}O_{11} + H_2O \xrightarrow{TkkbEkTk} C_6H_{12}O_6 + C_6H_{12}O_6$ 1 vd

2- $C_6H_{12}O_6 \xrightarrow{bUoVt} 2C_2H_5OH + 2CO_2$

(ii) **f0kf/k&** 1- RkUkdj.k&'khj dk 8&10 lkfRk'kRk RkUk fd,a TkkRkk gA 2 vd

2- vkEkkfUk,a LkYQV&fEkYkkRk g Tkk ,khLV dk HkkTkUk gA

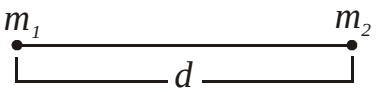
3- H_2SO_4 fEkYkkRk g fTkLkLk 'khj Ek mlkfLFkRk Tkh0kk.k Uk"V gk TkkRk gA

4- vCk bLkEk 5 lkfRk'kRk ,khLV fEkYkkdj 2&3 fnUk d fYk, j[k fn,a TkkRkk g vfHkfØ,a d lk'PkkRk 10 lkfRk'kRk ,Ydkgk Yk lkkIRk gkRkk Tkk 0kk'k dgYkkRkk gA

5- 0kk'k dk vkLk0kUk djUk lkj 90 lkfRk'kRk ,fFkYk ,Ydkgk Yk lkkIRk gkRkk gA

(iii) $2C_2H_5OH + 2Na \rightarrow 2C_2H_5ONa + H_2$ 1 vd

mÙkj 13 **0,kRØEk 0kXk dk fUk,kEk&** ^^fdUgh nk PkECkdh,k /k0kk d CkhPk YkXkUk 0kkYk vkd"k.k CkYk ,kk lkfRkd"k.k CkYk mUkdh /k0k lkCkYkRkk vk d Xk.kUkQYk d LkEkkUklkkRkh RkFkk /k0kk d CkhPk dh njh d 0kXk d 0,kRØEkkUklkkRkh gkRkk gA** 1 vd



,kfn m_1, m_2 /k0klkCkYkRkk 0kkYk nk /k0k dh CkhPk dh njh d gk Rkk

$$F \propto m_1 m_2 \quad \text{RkFkk} \quad F \propto \frac{1}{d^2}$$

,kk $F \propto \frac{m_1 m_2}{d^2}$,kk $F = K\frac{m_1 m_2}{d^2}$ 1 vd

Tkgk K ,d vUklkkfRkd fUk,kRkk d g

,dkd /k0k & dYkkEk d Lk«k Ek

$m_1 = m_2 = m, d = 1, F = 10^{-7}$ U,kVUk] j[kUk lkj

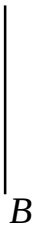
$K = 10^{-7}$ gUkjh@EkhVj

$$10^{-7} = \frac{10^{-7}\,mm}{1^2} \text{ ¾ } 10^{-7}$$ 1 vd

^^vRk% ,dkd /kOk Okg /kOk g Tkk fUk,kkRk Ek 1 EkhVj dh njh lkj j[k LkEkkUk /kOk dk 10 U,kVUk d CkYk Lk IkfRkdf"kRk djRkk gA** 1 vd

¼vFkOkk½

fPk«k Ek] PkECk dh,k {k«k dh RkhOkRkk I dk OB fn'kk Ek {kfRkTk ?kVd H dk OA fn'kk Ek m/Okk/kj ?kVd V dk OC fn'kk Ek RkFkk UkEkUk dk.k θ dk $\angle$AOB Lk lknf'kRk fd,kk Xk,kk gA



LkEk dk.k ΔOAB Ek

$$\cos\theta = \frac{OA}{OB} \text{ RkFkk } \sin\theta = \frac{AB}{OB}$$

$OA = OB\cos\theta$ RkFkk $AB = OB\sin\theta$

fp= e] $OA = H,\ AB = OC = V, OB = I$

$\therefore$ $H = I\cos\theta$ .....(i) RkFkk

$V = I\sin\theta$ .....(ii)

LkEkh dj.k (ii) dk leh- (i) l Hkkx nu ij

$$\frac{V}{H} = \frac{I\sin\theta}{I\cos\theta} = \tan\theta$$

$$V = H\tan\theta$$

iu% leh- (i) o (ii) dk ox dj tkMu ij

$$H^2 + V^2 = I^2\cos^2\theta + I^2\sin^2\theta = I^2(\cos^2\theta + \sin^2\theta) = I^2$$

$$H^2 + V^2 = I^2 \quad [\because \cos^2\theta + \sin^2\theta = 1]$$

mÙkj 14 #f/kj d Pkkj dk¸k dk 0k.kUk &

1- **vkDLkhTkUk dk Ikfj0kgUk** & ghEkkXYkkfCkUk '0kLkUk }kjk Ykh Xkb vkDLkhTkUk Lk Lk¸kDRk gkdj vkDLkh fgEkkXYkkfCkUk CkUkkRkk g fTkLkdk Ikfj0kgUk Ikj 'kjhj Ek gkRkk gA

2- dkCkUk Mkbvkdlkkbd dk Ikfj0kgUk& #f/kj IYkkTEkk ,0k ghEkkXYkkfCkUk }kjk CO_2 dk Ikfj0kgUk gkRkk gA

3- Ikk"kd Iknkfkk dk Ikfj0kgUk & IkfPkRk ,0k v0k'kkf"kRk Ikk"kd Iknkfk TkLk XYkdkTk] vEkhUkk vEYk] 0kLkk vEYk dk Ikfj0kgUk gkRkk gA

bLkh Ikdkj vU¸k dk¸k dk 0k.kUk djUk Ikj Hkh 1 vd Iknkuk fd¸k Tkk¸kA

¼vFk0kk½

YkLkhdk d Pkkj dk¸kk dk LkEkÖkkUkk&

1- YkLkhdk gkfUkdkjd Tkh0kkvk dk Uk"V dj gkfUkdkjd Iknkfkk dk 'kjhj Lk EkDRk djRkh gA

2- IkPk g, 0kLkk dk v0k'kk"k.k dj 'kjhj d f0kfHkUUk HkkXkk Ek IkgPkkRkh g ,0k vk0k'¸kdRkkUkLkkj LkfPkRk djUk Ek Lkgk¸kRkk djRkh gA

3- 'kjhj Ek PkkV YkXkUk Ikj ?kk0k Hkj Uk Ek jDRk ,0k 'kjhj Lk EkDRk djUk Ek Lkgk¸kRkk djRkh gA

mÙkj 15 LkjYk v.kvk d Lk¸kkTkUk Lk CkUk mPPkRkj vk.kf0kd Hkkj 0kkYk ¸kkfXkdk dk CkgYkd dgRk gA

1- IkkÑfRkd CkgYkd & bUkEk Lk dkb nk fYk[kUk Ikj &2 vd

(a) IkkÑfRkd jCkj (b) IkkVhUk (c) U¸kfDYkd vEYk (d) IkkfYkLkdjkbM

2- Lk'Ykf"kRk CkgYkd& bUkEk Lk dkb nk fYk[kUk Ikj &2 vd

(a) j¸kkUk (b) Ukk¸kYkkUk (c) VjhYkhUk (d) CkdYkkbV
(e) VkVYkkUk (f) Lk'Ykf"kRk jCkj

¼vFkZkk½

(i) P.V.C. dk lkjk UkkEk &lkkYkh 0kkbfUkYk DYkkjkbM & 1 vd

(ii) Lk«k& $\left[\begin{array}{c} CH_2-CH- \\ | \\ Cl \end{array}\right]$ 1 vd

(iii) Xk.k& 1- n< lYkkfLVd g ¼bue l dkb rhu fy[ku ij 3 vd½

2- ¸kg f0k|Rk dk dPkkYkd gA

3- ¸kg TkYk lkfRkjk/kh g

4- ¸kg m"Ekk 0k jLkk¸kUkk Lk vlkHkkf0kRk jgRkk gA

mÙkj 16- vkDLkh 'OkLkUk ,Ok vUkkDLkh 'OkLkUk Ek lkkPk vRkj & (1×5)

vkDLkh'OkLkUk	**vUkkDLkh 'OkLkUk**
1- ¸kg fØ¸kk vkDLkhTkUk dh mlkfLFkfRk Ek gkRkh gA	1- ¸kg fØ¸kk vkDLkhTkUk dh vUklkfLFkfRk Ek gkRkh gA
2- bUkEk HkkT¸k lknkFkk dk lk.k vkDLkhdj.k gkRkk gA	2- bLkEk HkkT¸k lknkFkk dk vlk.k vkDLkhdj.k gkRkk gA
3- bLk fØ¸kk dk vfRkEk mRlkkn CO_2 vkj TkYk gA	3- bLk fØ¸kk dk vfRkEk mRlkkn CO_2 ,Ok ,Ydkgk Yk ¸kk YkfDVd vEYk gA
4- bLk fØ¸kk Ek 1 v.k XYkdkTk Lk 38 ATP d v.k lkkIRk gkRk gA	4- bLk fØ¸kk Ek 1 v.k XYkdkTk Lk 2 ATP d v.k lkkIRk gkRk

gA

5-	vf/kdk'k Tkh0kk Ek ¸kg fØ¸kk gkRkh jgRkh gA	5-	¸kg fØ¸kk CkgRk dEk Tkh0kk Ek gkRkh gA

VhIk& vU¸k vURkj fYk[kUk Ikj Hkh IkR¸kd d fYk, 1 vd fn¸k Tkk¸kXkA

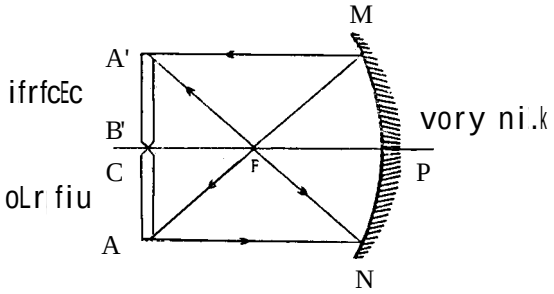
¼vFk0kk½

'Ok LkkPN0kk Lk		'Ok LkUk	
1-	¸kg dkf'kdkvk d Ckkgj gkRkh gA	1-	¸kg fØ¸kk dkf'kdkvk d HkhRkj gkRkh gA
2-	bLk fØ¸kk Ek ,UTkkbEk dh vk0k'¸kdRkk Ukgh gkRkh gA	2-	bLk fØ¸kk Ek ,UTkkbEk dh vk0k'¸kdRkk gkRkh gA
3-	¸kg ,d ¸kkf«kd fØ¸kk gA	3-	¸kg ,d Tk0k jkLkk¸kfUkd fØ¸kk gA
4-	bLk fØ¸kk Ek mTkk Ukgh gkRkh gA	4-	bLk fØ¸kk Ek mTkk EkDRk gkRkh gA
5-	bLkd vRkXkRk O_2 ¸kDRk 0kk¸k dk 'kjhj d vnj RkFkk CO_2 'kjhj Lk Ckkgj fd¸kk TkkRkk gA	5-	bLkd vURkXkRk HkkT¸k IknkFkk dk vkDLkh dj.k fd¸kk TkkRkk gA

mÙkj 17 v0kRkYk nIk.k dh Qkd Lk njh

1- fLk)kRk & ¸kfn dkb 0kLRk nIk.k d 0kØRkk dæ Ikj gk Rkk mLkdk IkfRkfCkECk 0kØRkk dæ Ikj gh CkUkRkk g vRkh 0kØRkk dæ dh fLFkfRk KkRk djd 0kØRkk f«kT¸kk fUkdkYk dj vk/kk djUk Ikj nIk.k dh Qkd Lk njh KkRk gk TkkRkh gA 1 vd

2- UkkEkkfdRk fPk«k 2 vd



3- vOkYkkdUk Lkkj.kh &

ØEkkd	nlk.k dh fLFkfRk	0kLRk flkUk dh fLFkfRk	0kØRkk f«kT,kk	QkdLk njh
1				
2				
3				

¼vFkOkk½

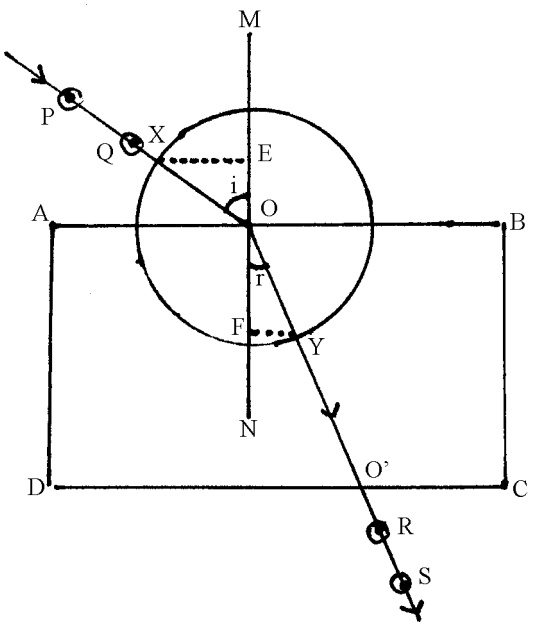
fLk)kRkh– (i) LUkYk d fUk,kEk Lk $\mu = \dfrac{\sin i}{\sin r}$

$$\sin i = \frac{XE}{OX}, \quad \sin r = \frac{YF}{OY}$$

eku j[ku ij] $\mu = \dfrac{XE/OX}{YF/OY}$ pfd $OY = OX$

$$\mu = \frac{XE}{YF}$$

(ii)



(iii) voykdu rkfydk

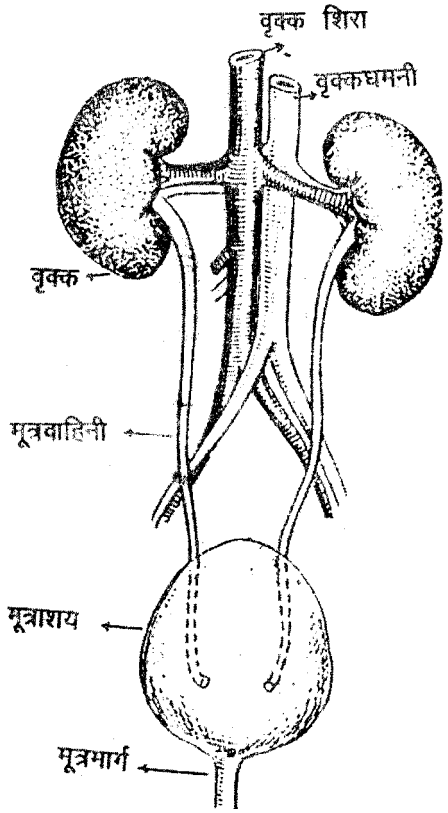
ØEkkd *XE* dh YkCkkb *YF* dh YkCkkb

mÙkj 18- (i) LkYk (ii) CkVjh (iii) [kYkh dTkh (iv) Lk,kkTkd Rkkj (v) lkfRkjk/k (vi) /kkjk fUk,k«kd

¼vFkOkk½

(i) Ckn dTkh (ii) /kkjkEkkIkh (iii) vEkhVj (iv) Lkf/k Rkkj (v) fCkUkk Lkf/k Rkkj ØkfLkXk (vi) ¶,kTk A

mÙkj 19



EkkUkOk mRLkTkUk dk UkkEkkfdRk fPk«k

(i) fPk«k CkUkkUk lkj 2 vd (ii) UkkEkkfdRk djUk lkj 2 vd (iii) Ok.kUk djUk lkj 2 vd A

0kDd & EkkUk0k 'kjhj dk lkEk[k mRLkTkh vXk g Tkk mRLkTkh lknkFkk dk vYkXk dj nRkk g ,kg Xkgj YkkYk jXk dk ,d TkkMh ik,kk TkkRkk gA

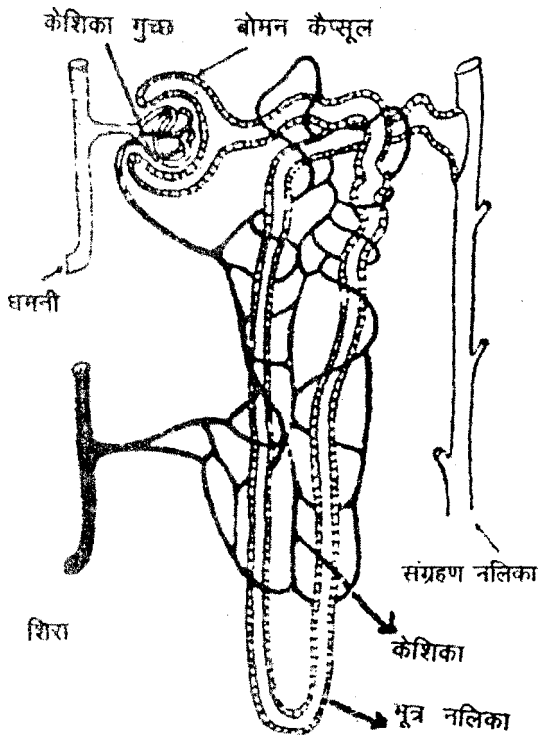
Ek«k0kkfgUkh & lkR,kd Ek«k 0kkfgUkh,kk 20 Lk 30 Lk-Ekh- YkECkh gkRkh g vkj Ek«kk'k,k Ek Tkkdj [kYkRkh gA

Ek«kk'k,k& ,d FkYkh d LkEkkUk gkRkk g fTkLkEk Ek«k LkXkfgRk gkRkk gA

Ek«kEkkXk & Ek«kk'k,k ,d Lkdjh UkYkh }kjk Ckkgj [kYkRkk g fTkLk Ek«kEkkXk dgRk gA

¼vFk0kk½

mÙkj 19



0k.kUk

(i) vfRk Lk{Ek NUkUk& ,kg fØ,kk CkkEkUk LkIkV Ek gkRkh g vfHk0kkgh ,0k vlk 0kkgh /kEkfUkdk }kjk fUkfEkRk df'kdk XkPn }kjk NUkUk dh IkfØ,kk gkRkh gA bUkEk IkkVhUk Lk #f/kj NUkRkk gA vkj CkkEkUk LkIkV Ek bdëk gkRkk gA bUkEk IkkVhUk d CkM v.k Ukgh NUk IkkRk g vkj NkV v.k NUk TkkRk g bLk fØ,kk dk Mk,kfYkfLkLk dgRk gA bLk Ikdkj UkÝkUk MkbfYkfLkLk FkYk d LkEkkUk dk,k djRkh gA

(i) 0kj.kkREkd v0k'kk"k.k& 0kDd UkfYkdk Ek XYkdkTk] [kfUkTk TkYk ,0k vU;k mlk;kkXkh lknkFkk dk v0k'kk"k.k gk TkkRkk g vkj vUkUlk;kkXkh lknkFk dk v0k'kk"k.k Ukgh gkRkk gA

(i) UkYkdh;k L«kk0k.k & 0kDd UkfYkdkvk dh #f/kj dkf'kdkvk }kjk vUkUlk;kkXkh lknkFkk dk L«kk0k.k gkRkk g ;kg LkXkg UkfYkdk Ek ,df«kRk gkdj Ek«kk'k;k Ek lkgPk TkkRkk g bLk LkXkfgRk æ0k dk Ek«k dgRk gA

¼fPk«k lkj 2 vd] UkkEkkdUk lkj 2 vd] 0k.kUk lkj 2 vd½