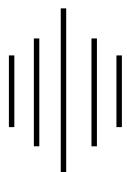
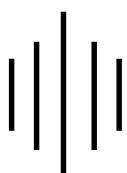




I Ei y&it u i =



d{kk XII oha



foKku ds rRo

1/fo | k spr i tikkx 1/2

NÜkh! x<+ek/; fed f'k{kk e.My] jk; ij

itū & i= dh ; kstuk

Scheme of Question Paper

fo"k; % foKku ds rRo 1631½

i wkkd % 75

I e; % 3 ?ka/s

i jh{kk % gk; j I dsMjh 1120½

1/½ 'kskf.kd mnas; ds vuq kj eku

(A) Weightage as per Educational objective:

10 00	mnas;	vd	ifr'kr
1-	Kku (Knowledge)	40	53.3%
2-	vocksk (Understanding)	26	34.6%
3-	vuijks ,oa dksly (Application & Skill)	09	12.1%
; ks		75	100%

1/½ bdkbdkj vdkz dk eku

1000	bdkbz dk uke	bdkbz ij vkcVr vd	itū&i= ds ik: i vuq kj vkcVr vd
1-	i dk'k	12	12
2-	fo r pifcd	05	05
3-	fo r /kjk dk m"eh; i kko	07	07
4-	dfyy dksykbM	04	04
5-	vk; rukRed fo'ysh.k	05	05
6-	vRij.k	05	05
7-	dkctud vdkctud ; ksdks ds uke	06	06
8-	ckxokuh	08	08
9-	i kne dkf; zh ,oa i kni dly	06	06
10-	ok"ikkl tu ,oa i dk'k l aysh.k	05	05
11-	i kkkkaea'ol u	04	04
12-	thok.kqfoKku	08	08

॥ ፳ ዓይነት ስርዓት ስርዓት (Difficulty Level)

10 ØO	mnas ;	vd	i fr'kr
1-	I jy (Easy)	32	42.6%
2-	vñ r (Average)	31	41.3%
3-	dfBu (Difficult)	12	16.1%
		; kx	75 100%

የነዕስ ከተማ = fn'kk funsk ,oa fodYi ; kst uk %

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

- oLrfu"B itu e@105% cgfodYih; itu rFkk 105% fjDr LFKku dh i fr@mfpr tkMh cuk, dk itu fn; k tkosk vksj ; g iR; d l V e@itu Øekd 1 gksk A
- iR; d l V e@1] 2 ,oa3 vdks ds ituka e@fHkkurk jgsxh A l eLr 04 vd ; k bl l s vf/kd vdks ds y?kmÙkjh; rFkk nh?kmÙkjh; ituka e@fodYi fn; k tkuk gSA fodYi itu ml h bdkbz l srFkk l eku mnas ; kdsjgxsA 04 vd ; k bl l s vf/kd vdks ds itu iR; d l V e@,d l eku jgsxh A
- vf/kdre mÙkj l hek vfry?kmÙkjh; 1/2 vd@30 'kCn½/3 vd@50 'kCn½
y?kmÙkjh; 1/4 vd@75 'kCn½/5 vd@150 'kCn½
nh?kmÙkjh; 1/6 vd ; k vf/kd@250 'kCn½

it u & i = dk Cyfi IV

Blue Print of Question Paper

fo^uk; % foKku ds rRo ½31½

i wklld %75

I e; %3 ?ka/s

i jh{k% gk; j I dsMjh ½20½

bdkbz I -Ø-	bdkbz	bdkbz i j vkcfVr vd	vd okj it u							dy it u ; k bl ls vf/kd
			1 vd	2 vd	3 vd	4 vd	5 vd	6 vd	7 vd	
1	i dk'k	12	1	1	1	&	&	1	&	12
2	fo r pfcld	5	1	2	&	&	&	&	&	5
3	fo r	7	&	&	1	1	&	&	&	7
4	dfyy dkykbM	4	&	&	&	1	&	&	&	4
5	vk;rukRed fo'yšk.k	5	&	1	1	&	&	&	&	5
6	mRij.j.k	5	1	&	&	1	&	&	&	5
7	dkctud vdktud ; kfxdkadsuke	6	4	1	&	&	&	&	&	6
8	ckxokuh	8	&	&	1	&	1	&	&	8
9	i kni dkf; dh ,oa i kni dy	6	1	&	&	&	1	&	&	6
10	ok"ikl tlu ,oa i dk'k l dyšk.k	5	&	&	&	&	1	&	&	5
11	i lkkaea'ol u	4	&	&	&	1	&	&	&	4
12	thok.kqfoKku	8	2	&	&	&	&	1	&	8
	; kx	75	10	5	4	4	3	2		19/75

Set - A

gk; j I dsMjh Ldy I VHQdV ijlk

Higher Secondary School Certificate Examination

I fiiy&itu i=

SAMPLE PAPER

fo"k; % (Subject) - foKlu ds rRo

I e; 3 ?k. Vl (Time- 3 Hrs)

d{lk % (Class) - ckjgoha 120h

i vklid 75 (M.M.)

(Instruction) & Vunzkh

- 1- I Hkh itu gy djuk vfuok; ZgSA

Attempt all the Questions

- 2- itu Øekd 01 e 10 vd fu/kkrjr gSA nks mi [k.M gSA [k.M ^v** e 05
cgfodYih; itu rFkk [k.M ^c** e 05 fjDr LFkkuk dh i firz vFkok mfpr
I cak tkSM+ A iR; d itu dsfy, 1 vd vkcIVr gSA

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

- 3- itu Øekd 02 I situ Øekd 06 rd vfr y?kmRrjh; itu gSA iR; d itu
ij 02 vd vkcIVr gSA mRrj dh vf/kdre 'kCn I hek 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- itu Øekd 07 I situ Øekd 10 rd y?kmRrjh; itu gSA iR; d itu ij 03
vd vkcIVr gSA mRrj dh vf/kdre 'kCn I hek 50 'kCn A

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

- 5- itu Øekd 11 I situ Øekd 14 rd y?kmRrjh; itu gSA iR; d itu e
vkrfjd fodYi gSvkj iR; d itu ij 04 vd vkcIVr gSA mRrj dh vf/kdre
'kCn I hek 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- itu Øekd 15 Is itu Øekd 17 rd nh?kñRrjh; itu gSA iR; d itu e
vkrfjd fodYi gSvkj iR; d itu ij 05 vd vkcVr gSA mRrj dh vf/kdre
'kCn I hek 75 '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 75.

7- itu Øekd 18 Is itu Øekd 19 rd nh?kñRrjh; itu gSA iR; d itu e
vkrfjd fodYi gSvkj iR; d itu ij 06 vd vkcVr gSA mRrj dh vf/kdre
'kCn I hek 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.

[k.M ^v* @ Section A

i zu 1 ½ & I gh fodYi pudj fyf[k; s \

1 x 5 = 5 ½ 5 v

Write correct choice -

- (i) dkWj I YQ\ bl jx dk fOLVyh; inkFkZgS(
 ½ uhysjx] ½ yky jx
 ½ I Qn jx ½ i hyk jx

Copper Sulphate is a crystalline substance of this colour ;

- (a) Blue (b) Red
 (c) White (d) Yellow

- (ii) veksu; e DykjkbM bl jx dk jomkj inkFkZgS(
 ½ I Qn jx ½ yky jx
 ½ i hyk jx ½ uhysjx]

Ammonium Chloride is granular substance of this colour;

- (a) White (b) Red
 (c) Yellow (d) Blue

- (iii) , l k foy; u ftl eakMh ek=k eavEy ; k {kkj feyk nsusl smI dspH eakbZ
 ifjorlu ughagkrk gog dgykrk gSA
 ½ cQj foy; u ½ vEyh; cQj
 ½ {kkjh; cQj ½ vEyh; {kkjh; cQj

A solution, in which a little quantity of acid or base is mixed then there is no change in its pH, is called ;

- (a) Buffer Solution (b) Acidic Buffer
 (c) Alkaline buffer (d) Acid-base buffer

- (iv) i jkl .k dh fØ; k bl eakrhi gA
 ½ Bls eä ½ ndkaeä
 ½ xJ eä ½ I Hkh eä

Convection takes place is-

- (a) Solid (b) Liquids
 (c) Gases (d) All above

(v) i k^gkka e^a'ol u dh fØ; k bl l e; gk^rh g^sA
 ½ fnu e^a ½ jkr e^a
 ½ 'kke e^a ½ nki gj e^a

Respiration in plants takes place in this period of time;

- | | |
|-------------|----------------|
| (a) Day | (b) Night |
| (c) Evening | (d) After noon |

[k.M ^c* @ Section B

½ fjDr LFkuk^a dh i frz djk^s & ¼ x 5 = 5½ 5 v^d

Fill in the blank -

- (i) dejs dh jhy e^a cuk ----- okLrfod rFkk Nkv/k gk^rk g^sA
 formed in the roll of camera is real and small.
- (ii) LFkk; h p^ccd ----- ls cuk; k tkrk g^sA
 Permanent magnet is made from
- (iii) , s in kFkZ tksfdl h ----- dh xfr dks i^{kk}for djrsg^sml smRij d dgrs g^sA
 A substance which influence the speed of any is called a catalyst.
- (iv) ve^{ks}u; e Dyk^jkbM dks ----- dgrs g^sA
 Ammonium chloride is also called
- (v) i k^gks dh dks'kdk f^hkRrh ----- dh cuh gk^rh g^sA
 The cell wall of plant is made up of

itu 2& i k jn'kh^a, oavikjn'kh^a olrq afdl s dgrs g^s\ 1\$1 = 2 v^d

What is called transparent and translucent objects ?

itu 3& ØRM fdI s dgrs g^sA I gh mRrj ij ½½

What is called Crode ?

itu 4& p^ccdh; {ks dh rhok fdu ckrkaij fu^{kk} djrh g^s\ ½½

On what things intensity of magnetic field depends ?

itu 5& I pd fdI s dgrs g^s\ ½½

What is an indicator ?

itzu 6&	vYdkgy dk Ø; ki kfjd uke o nks xqk fyf[k; s A	1/2½
Write the professional name of alcohol along with its two properties.		
itzu 7&	ty dsfu; e fyf[k; s A ½dkbz rhu½	1/3½
Write the Joule rule (any three)		
itzu 8&	vueki u dh fØ; k eal pd dk D; k egRo gA fdllghanksI pdksdsuke fyf[k; A	1/3½
What is the importance of indicator in the process of titration ? Write the name of any two indicators.		
itzu 9&	'kq vks v'kq o.kDe eadkbz nks vUrj fyf[k; s A	1/3½
Write any two differences between pure and impure spectrum.		
itzu 10&	xg olfVdk yxkus ds fdllgharhu mnq'; ka dksfyf[k; s \	1/3½
Write any three objectives of Planting Kitchen garden.		
itzu 11&	fuEu dksmnkgj .k I fgr I e>kb; s & mRijd fo"kj mRijd mRI kgd	1/2\$2½4½
Explain the following with example- Catalytic Poison, Catalytic Promotor		
~VFlOk OR**		
itzu 12&	mRij .k D; k gA fdllghanks mRij dksdsuke o mi ; kx fyf[k; s A 2\$1\$1=1/4½	1/4½
What is catalysis ? Write the name and use of any two catalysts.		
itzu 13&	vkDI h ,oavukDI h 'ol u eadkbz pkj vrj fyf[k; s A	1/4½
Write any four differences between anaerobic and aerobic respiration.		
~VFlOk OR**		
itzu 14&	'ol u o i dk'k I ayk.k eadkbz pkj vrj fyf[k; s A 1\$1\$1\$1=1/4½	1\$1\$1\$1=1/4½
Write any four differences between respiration and photosynthesis.		
itzu 15&	dksykbz foy; u ds dkbz pkj xqk fyf[k; s	1\$1\$1\$1=1/4½
Write any four properties of colloidal solution		
~VFlOk OR**		
itzu 16&	dksykbz foy; u ds dkbz pkj mi ; kx fyf[k; s A 1\$1\$1\$1=1/4½	1\$1\$1\$1=1/4½
Write any four uses of colloidal solution.		

it u 14& fo | r cYo dk ukekldr fp= cukdj ml dh jpuk dk o.ku dhft , A 2\$2=1½

Describe the construction of an electric bulb with the labelled diagram.

~vFkok OR**

fo | r bLrjh dk ukekldr fp= cukdj ml dh jpuk dk o.ku dhft , A 2\$2=1½

Describe the construction of an electric iron with labelled diagram.

it u 15& i z kx }kjk fl) dhft , fd idk'k I ayk.k dh fØ; k eaO₂ xS fudyrh gA

Prove experimentally that oxygen gas is evolved during photosynthesis. 2\$3=1½

~vFkok OR**

ok"ikl tlu fØ; k dsfy; s i z kx fyf[k; sA 1½

Write an experiment for transpiration.

it u 16& ckxokuh eami ; Dr fuEu mi dj .kakdk fp= cukdj mudh mi ; kxrk fyf[k; A

xrh] QkoMk (2½+2½=5)

Write the utility of the following equipments with diagram used in the gardening.

GAINTEE, Phawada (Spade)

~vFkok OR**

ckxokuh efl pkbz , oaÑuru ds dke eivkusokysfuEu ; akdk fp= cukdj

mudh mi ; kxrk fyf[k; sA

g tkjk gfl ; k (2½+2½=5)

Write the utility of the following equipments with diagram used in the irrigation and pruning-

HAZARA, SICKLE (Hansiya)

it u 17& OI hQjh dy dk fuEu fcunyka ij o.ku dhft ; sA 2\$1\$2=1½

1- i fi o.ku] 2- i fi l #] 3- vkkFk dk egRo ½dkbz nk

Describe the family 'CRUCIFERAE' on the following points-

1. Flower description, 2. Floral formulla,
3. Economic importance (any two)

~vFkok OR**

I kysus h dy dk fuEu fcunyka ij o.ku dhft ; sA 2\$1\$2=1½

1- i^qi o.ku] 2- i^qi I #] 3- v^kf^kd egRo 1/dkbZ nk%

Describe the family 'SOLONACEAE' on the following points-

1. Flower description,
2. Floral formulla,
3. Economic importance (any two)

it u 18& I qen'kZ dk fuEu fcUnyka ij o.ku dhft, A 3\$3=1/6½
dk; Z fof/k] fl)kr

Describe about microscope on the following points -

Working method, Principle

~Vfok OR**

i PNk; k , oami Nk; k ds v^k/kkj ij I w kg.k , oapUnxg.k dk o.ku dhft; sA

Discribe about solar and lunar eclipse on the basis of umbra and penumbra.

3\$3=1/6½

it u 19& fdUgh 6 ykHknk; d thok.kvka dk v^kf^kd egRo fyf[k; sA (1x6=6)

Write about economic importance of any six useful bacteria.

~Vfok OR**

fdUgh rhu ekuo jks mRi lu djusokys thok.kq, oarhu ikni jks mRi lu djusokys thok.kqdk uke , oamul smRi lu gksokys jks kadsuke fyf[k, A (1x6=6)

Write the name of any three human and three plant diseases causing bacteria along with the name of disease caused by them.

&&&00&&&

^ i y mRrj*

mRrj 1	1 1/2 & I gh fodYi %	1/2 x 5 = 5 1/2 5 vd
(i)	1 1/2 uhysjx	
(ii)	1 1/2 I Qn jx	
(iii)	1 1/2 cQj foy; u	
(iv)	1 1/2 nokaes	
(v)	1 1/2 jkr es	
1/2 &	fjDr LFkku %	1/2 x 5 = 5 1/2 5 vd
(i)	i frfca	
(ii)	bLikr	
(iii)	jkl k; fud fØ; k	
(iv)	ukj knj	
(v)	I y; ykst	
mRrj 2 &	i kjn'khz, oavikjn'khz oLrq a%	1\$1 = 2 vd
	i kjn'khz oLrq a i dk'k dk vf/kdkk Hkkx vkj i kj tk l drk g\$ mnkgj.k & dkp] gokj ty vkn A tcfd vikjn'khz oLrq a i dk'k vkj i kj ughagksk g\$ t\$ & ydMh i RFkj vkn A	
mRrj 3 &	Økm & ifjHkk"kk 1/2 wkl I gh mRrj ij 2 vd 1/2	
	pfcdb; {ks dh rhork c kusdsfy , d Mfy ; k adksuey g s dh ckjh d NM ads pkjks vkj yi yk tkrk gA bl i dkj dh y g s dh NM adks Økm dgk tkrk gA	
mRrj 4 &	pfcdb; {ks dh rhork %& 1/2 wkl I gh mRrj ij 2 vd] vkl sv/kjsmRrj ij vd u fn; s tk; y	1/2 1/2
	pfcdb; {ks dh rhork d Mfy ; k ad h l [; k] chp dk ek/; e] vkj fo r /kkj dh rhork ij fu kkj djrh gA	
mRrj 5 &	I pd fdI sdgrs g\$A 1/2 wkl I gh mRrj ij 2 vd 1/2	1/2 1/2
	vukiu dh vire fc lunq dks I pd fc lunq dgrs g\$ tksfdI h j lk; u fo'ksk ds feykus ij vire fc lunq i klr gks h g\$ ml s I pd dgrs g\$A	

	t§ s & fQukY¶Fksyhu vFkok feFkkby vkyt A	
mRrj 6&	vYdkgy dk 0; ki kfjd uke o nks xqk 0; ki kfjd uke 'kjkc o okbu] fLi xqk & ehBh xFk i kbz tkrh g§A ; g Toyu 'khy i nkFkZ g§A	12½
mRrj 7&	ty dsfu; e % ¼ R; d fu; e ij 1 vd½ ty usm"ik mRiknu dsrhu fu; e crk; sg%& 1½ fdI h pkyd eafHku i dyrk dh /kkjk; a, d fuf'pr l e; rd i dkfgr djusij mRiUu m"ek /kkjk eaoxZ dsI ekuqkrh gksr gSvFkZ M α 1² 2½ , d gh i dyrk dh /kkjk , d fu; r l e; rd fHku fHku i frjkksk ds pkydks i dkfgr djusrksmRiUu m"ek H pkyd ds i frjkksk R dsI ekuqkrh gksr gSvFkZ H α R	1½ x 3¾ 3½
3½	fdI h pkyd e, d gh i dyrk dh /kkjk fHku fHku l e; rd i dkfgr djusrks pkyd eamRiUu m"ek l e; t dsI ekuqkrh gksr gSvFkZ M α t	
mRrj 8&	vukiu dh fØ; k eal pd dks dgtrs g§ & nks l pd dsuke (½x2=1) vEy , oa{kj dh jkl k; fud fØ; k eal pd feyku si j tc jkl k; fud fØ; k i wkz gks tkrh gsrks l pd }kj foy; u dk jx cny tkrh gft l svfre fcunqdgrs g§A vr% l pd] mnkl hdj .k dh i wkz dks n'kkz g§A uke & feFkkby vkyt] QhukY¶Fksyhu A	13½
mRrj 9&	'kj vkj v'kj o.kØe eavUrj % & ½kbz nks 'kj o.kØe	1½ + 1½ = 3½
	v'kj o.kØe	
bl o.kØe eal Hkh jx Li "V , oa vyx fn[kkbz nrs g§A	bl o.kØe e, d l svf/kd jx , d g h l kf , d LFku eafn[krsg§vFkZ jx dh Over laping gksr g§A	
bl o.kØe eabl o.kdks i klr djus eafit e ds nks Qydkaij , d&, d mRry y i z kx eaykrsg§A	bl e, d k ughafcl; k tkrh g§A	

mRrj 10&	xg okfVdk yxkus ds rhu mnns';	1\$3 = 1/4%
1-	xgokfVdk dk e[; mnns; vi us ifjokj dsfy, ifrfnu rkth I fct; kai klr djuk gA	
2-	eukjatu , oa'kkjhfd 0; k; ke ds mnns; Is; g okfVdk yxkbZ tkrh gA	
3-	cPpkadks i f'k{k.k dsfy, ; g vPNk I k/ku gA	
4-	?kj rFkk vkokl dspkjkarjQ dscdkj Hk[kM dksI tho , oal npj vkd"kd cukus ds mnns; Is xg okfVdk yxkbZ tkrh gA	
5-	LokLF; Bhd jgrk gS ekufi d ruko nj gksk gS, oainkk.k nj gksk gA I ed{k dkbZ3 mnns; ij 3 vd	
mRrj 11&	fuEu dks mnkgj.k I fgr I e>kb; s%	
	mRijd fo"k % dN inkFkZ viuh I fe mi fLFkfr Is mRijd dks fuf"Ø; dj nsrgs; k fØ; k'khyrk ?Vk nsrgs mRijd fo"k dgykrsgsA tS s & H ₂ SO ₄ dh Li 'kzof/k e ₂ SO ₄ + O ₂ ds xS h; feJ.k eavkl fud vkl kbM dh FkkMh Hkh mi fLFkfr gks rks lyue dh mRij.k 'kfDr u"V gks tkrh gS vr% vkl fud mRijd fo"k dgykrk gSA	
	mRijd mRi kgd % dN inkFkZ Lo; a mRijd ugha gks s fdUrq mRijd dh fØ; k'khyrk dks c<ks dh {kerk j [krsgs budh I fe ek=k I smRijd dh 'kfDr c<+ tkrh gS bUga mRijd mRi kgd dgrsgsA NH ₃ cukus dh gSj fof/k eayk gpkZ dsI kfk mi fLFkr MO mRijd mRi kgd dk dk; Zdjrk gA vFkok	
	mRij.k D; k gA fdUgha nks mRijd ds uke o xqk	2\$1\$1=1/4%
	mRij.k % og inkFkZ tks viuh mi fLFkfr ek= Is jkl k; fud fØ; k dh xfr dks ?Vk ; k c<k nsrk gS vkl Lo; afØ; k ds vfr eHkkj o jkl k; fud I xBu dh nf"V Is vi ofrj jgrk gS mRijd dgykrk gA	
	mRijd ds uke & mi ; kx	
1½	MnO ₂ & e ₂ uht MkbZ vklD1 kbM dk iz kx iz kx'kkyk e ₂ O ₂ xS cukus e gksk gA	
2½	vk; ju vklD1 kbM Fe ₂ O ₃ ; g gSj fof/k Is vekfu; k xS cukus ds dke	

vkrk gA

1mijkDr ds vfrfjDr l gh uke o mnkgj.k fy[kus ij 1\$1 vd fn; stko%

mRrj 12& vkDI h 'ol u ,oavukDI h 'ol u eadkbzpkj vrj % 14½

	vkDI h 'ol u	vukDI h 'ol u
1	; g O ₂ dh mifLFkr ea iwkz gks h gA	; g O ₂ dh vuifLFkfr ea iwkz gks h gA
2	bl fØ; k ea Hkkstu dk iwkz vkDI hdj.k gks k gA	viwkz vkDI hdj.k gks k gS
3	bl fØ; k ds vr ea ty o co ₂ curk gA	bl fØ; k ds vr ea vYdkgy rFkk co ₂ dk fuekZk gks k gSA
4	bl fØ; k ds vr ea 38 ATP dk fuekZk gks k gA	bl ea 2] ATP dk fuekZk gks k gA

1mijkDr ; k vll; led{k ij 1&1 vd fn; stko%

vFkok

'ol u o idk'k l aysk.k eadkbzpkj vrj % 1\$1\$1\$1=14½

	'ol u	idk'k 'ol u
1	bl fØ; k ea O ₂ xg.k dh tkrh gS CO ₂ fudkyh tkrh gA	bl fØ; k ea CO ₂ xg.k dh tkrh gS, oa O ₂ fudkyh tkrh gA
2	; g fo[kMdkjh fØ; k gA	; g fuekZkdkjh fØ; k gA
3	bl ea tfVy inkFkj l jy inkFkj ea cny tkrs gSA	bl ea l jy inkFkj tfVy curs gSA
4	; g fØ; k l Hkh l e; gks h gA	; g fØ; k døy idk'k ea iwkz dh tkrh gA
5	bl fØ; k ea Åtkz [kpZ gks h gA	bl fØ; k ea Åtkz l spr gks h gA
6	bl fØ; k dk l ehaj.k C ₆ H ₁₂ O ₆ +6O ₂ -->6H ₂ O+ 6CO ₂ + 673kcl	bl fØ; k dk l ehaj.k fHkUu gS 6CO ₂ +12H ₂ O+ DykjkfQy C ₆ H ₁₂ O ₆ +6H ₂ O+6CO ₂

- mRrj 13& dksykbMh foy; u dsdkbz pkj xqk ¼ R; d e 1 vd½
- 1- dksykbMh d.k I {en'kh} }jk foy; u eansks tk I drsgsA
 - 2- ; g foy; u fo"kekash gksk gA
 - 3- dksykbMh d.k fQYVj iij IsI jyrk iD ikj gks tkrsgsA
 - 4- dksykbMh d.k fujUrj VMt esht xfr djrsjgrsgsA bl xfr dksckmuhxfr dgrsgsA
- ½Fkok vU; I ed{k xqk fy[kus ij 1x 4 = 4 vd fn; s tko½
vFkok
- dksykbMh foy; u dsdkbz pkj mi ; kx % 1\$1\$1\$1=½
- 1- ty I sv'kj; kani djus ij ty 'kkku ds mi ; kx eA
 - 2- /kyk I sdkclu ds d.k vyx djuseadkj [kus dh fpefu; ka eami ; kx
 - 3- ikuh I scMs'kgjkaeukyh ds xns ikuh vyx djuseami ; kx gksk gA
 - 4- jcj m | kx eami ; kx fd; k tkrk gA
 - 5- vksf/k ds : i eal kfn; zid k/ku ds : i e mi ; kx fd; k tkrk gA
- ½ k vU; I ed{k mRrj ij vd fn; s tko½
- mRrj 14& fo | r cYo dk ukefdr fp= cukdj ml dh jpuk dk o.ku dhft, A 2\$2=½



bl dk vlfodkj , Mhl u usfd; k Fkk ; g dkp dk cuk gvk cYc gksk gSft I ds vnj fjDr LFku ; k fu; k jgrk gA vfØ; xS sHkjh jgrh gSA bl dkp ds cYc eVxLVu dk rrqyxk jgrk gStksfo | r iDkg I s'kh?kz gh jDr rlr xel gkdj iDk'k nsrk gSrFkk fo | r iDkg on djus ij 'kh?kz gh BMk gks tkrk gSA bl fo | r cYc dk iz kx ge ?kjkl vklQI karFkk I kozfud LFku ij iDk'k ikr djusdsfy; sdjrs gA

vFkok

fo | r bLrjh dk ukefdr fp= o jpuk % fp= 2\$j puk 2 ¾ 2\$2=½

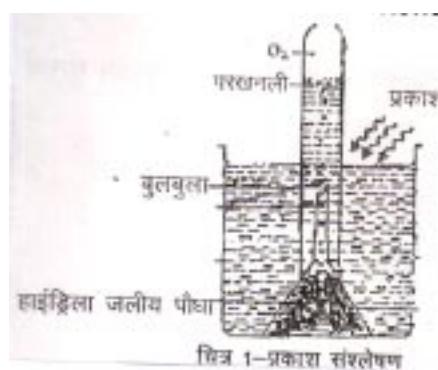
fo | r bLrjh eaukbOke tS h feJ /kkrqdk , yheV vHkd dh i rkidschp nck jgrk gSbu i jrka dks , EcLVkW dh lyV ds uhpSj [k fn; k tkrk gS , EcLVkI fo | r jksku dk dk; Zdjrk gS ftI eabLrjh ds ykgs okys Hkkx efo | r /kkjk ughacg i krh A , yheV ea l s i dkfgr gkus ij ; syky xeZgk dj rki mRiu djrk gS



ftI eaykgs dh bLrjh xeZgks tkrh gA

1/fo | r bLrjh o.ku djus ij 2 vd] fp= ij 2 vd fn; stko%
mRrj 15& iz kx }kjk fl) dft, fd i dk'k I ayk.k dh fØ; k eoO, xS fudyrh g%&
iz kx & , d chd j eayh; i kkk gkbfM yk ydj bl sdkp dh dhi l s<d dj
j[krsgs chd j ty l shkj nsrgs A , d ty l shkjh ijh ij [k uyh ydj mYVh
j [k nsrs g A l wZ ds i dk'k dh mifLFkfr e i dk'k I ayk.k fØ; k }kjk
vkD htu curk gStksdhi l sgksh gpoij [k uyh ea , df=r gksh jgrh gsty
/khj &/khjs mrjrk tkrk gSA ij [k uyh ea , df=r xS ds l adz eayh gpoij
rhyh ystkus ij og vkS rhok l styrh gSvr%; g fl) gksh gSfd i dk'k
I ayk.k fØ; k eoO, xS fudyrh gA

1/3\$23/45%



vFkok

ok"ikl tlu fØ; k iz kx }kjk fl) djuk 1/fo= 2 vd] o.ku 3 vd 3/4 5/4
ok"ikl tlu dk in'ku % xeyseayxs i kkkadks ydj xeysdks i kVhfFku }kjk
<ddj , d dkp dh lyV ij j [kdj dkp dscytkj }kjk <d nsrgs , oarS kj

ि त क्षे दक्ष। वृद्धिक्षे के एज [क नर्सग्रा 7&8 ?सि ' पक्र स्यत्के दस्ती जह हक्कर्जह
। र्ग इ ज इकुह दह अन्सफन [क्कब्लूस्यर्ह ग्रा ; संसोक"ि कर्तु तु फू; क दसि ' पक्र
फुद्यह ओ"ि इ सुफेर्ह ग़ा



मर्रज 16& उत्सर्जन का प्रदर्शन का प्रदर्शन

$\frac{1}{2}\frac{1}{2} + 2\frac{1}{2} = 5\frac{1}{2}$

1- खेलपाता & पौलीथीन

$1\frac{1}{2}$ इक्कीह त्रिंश दसि रफ्के गव्वक्कज मिकु उकुस दस्फ्य; सा

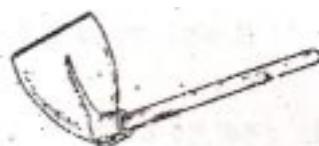
$2\frac{1}{2}$ त्रिंश दक्ष। एर्य उकुस दस्फ्य; दके वर्के ग़ा



2- उत्सर्जन का प्रदर्शन

$1\frac{1}{2}$ उत्सर्जन खेलपाता; दके वर्के ग़ा

$2\frac{1}{2}$ उत्सर्जन दक्ष। एर्य उकुस दस्फ्य; दके वर्के ग़ा



चित्र- फावड़ा

वर्के

ckxokuh eafl pkbz , oa Ñuru ds dke ea vkus okys 2 ; aks ds fp= o mudh
mi ; ksxrk %

gtnjk] gfl ; k

1- gtnjk %& 1½ bl midj.k }jk D; kfj ; kaesi kuñ nusdk l epr i cdk fd; k
tkrk gA

2½ m | ku dsullga i kskadks l hpusdsfy; sQ0okjsds: i ea bl dk
mi ; kx fd; k tkrk gA



2- gfl ; k %& 1½ ; g v/kpntdkj vkdfr dk gRFks ; Dr ; a gS ; g 'kld ekuh
dks Åij&Åij l sdkVusds dke vkrk gA



mRrj 17& ØI hQjh dy dk fuEu fcUnyka ij o.ku dhft ; sA 2\$1\$2=½%

1- i|i o.ku] 2- i|i l #] 3- vkkFkd egRo ½dkbz nk%
i|i o.ku djusij 2 vd

vkkFkd egRo & el ky\$ Hkkstu] rsy] vkskf/k esl sfdl h dsnksegRo fy[kus ij
2 vd fn; ks tkosA

vFkok

I kyus h dy dk fuEu fcUnyka ij o.ku dhft ; sA 2\$1\$2=½%

1- i|i o.ku] 2- i|i l #] 3- vkkFkd egRo ½dkbz nk%
i|i o.ku djusij 2 vd

vkkFkd egRo & Hkkstu] el ky\$ vkskf/k rEckd] l npjrk dsfy; } [kjirokj es
I sfdl h nks egRo fy[kus ij 2 vd fn; stkosA

mRrj 18& I qen'kz dk fuEu fcUnyka ij o.ku dhft , A 3\$3=½%

dk; l fof/k] fl) kr

I l en' k l dk; l of/k fy[kus i j 3 vd] fl) kr fy[kus i j 3 vd fn; s tkos A
vFkok

i PNk; k , oami Nk; k ds v k / k j i j I w kg .k , oaplnxg .k dk o.ku djukA
I w kg .k o.ku djus i j 3 vd A
plnxg .k o.ku djus i j 3 vd A 3\$3=1/2

mRrj 19& ykllknk; d tho.kvka dk v k f k d egRo %
fl j dk cukuse] I kbVd vEy e] , Ydkgy cukuse] i uhj ngh eD [ku cukuse]
pk; rEckdw0; ol k; e] vpkj] uhy] tW m | kx e] pezjkx] Hkkstu cukus e]
vksf/k m | kx ea thok.kqce] dFk ea A
mijkDr ea sfal h 6 fcuny k i j o.ku djus i j i R; d ea 1&1 vd fn; k tkoA
vFkok

fdu gharhu ekuo jkx mRi uu djusokys thok.kq , oai kni jkx mRi uu djusokys
thok.kq ds uke , oamue mRi uu gksokys jkx ds uke %

ekuo jkx

{k; jkx ; k r i fnd
gsk
VkbQkbM

thok.kq dk uke

& ekbdkoD Vhfj ; e V ; ejdykfl e
& ckbfo ; kksyjh
& I kYekus k VkbQkd k

i kni jkx

i Rrkxk dh dk dkyk jryk
uk'ki krh , oal o dk tyu vaxekuh
uhcwidk daj jkx

thok.kq dk uke

& tJFkekskl dSi fLVI
& bohfj ; k , feykokj k
& tSI kbVh

i R; d i j 1 vd] fu/kkijr gsjkx o thok.kqdk uke fy[kus i j 1&1 vd fn; s tkos A

&&&00&&&

Set - B

gk; j I dsMjh Ldy I VHQdV ijhkk

Higher Secondary School Certificate Examination

I fiiy&itu i=

SAMPLE PAPER

fo"k; % (Subject) - foKlu ds rRo

I e; 3 ?k. Vl (Time- 3 Hrs)

d{kk % (Class) - ckjgoha 120h

i vkkd 75 (M.M.)

(Instruction) & Vunzh

- 1- I hkh itu gy djuk vfuok; ZgSA

Attempt all the Questions

- 2- itu Øekd 01 ea 10 vd fu/kkrj gSA nks mi [k.M gSA [k.M ^v** ea 05
cgfodYih; itu rFkk [k.M ^c** ea 05 fjDr LFkkuk dh i firz vFkok mfpr
I cak tkSM+ A iR; d itu dsfy, 1 vd vkcfVr gSA

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

- 3- itu Øekd 02 I situ Øekd 06 rd vfr y?kmRrjh; itu gSA iR; d itu
ij 02 vd vkcfVr gSA mRrj dh vf/kdre 'kCn I hek 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- itu Øekd 07 I situ Øekd 10 rd y?kmRrjh; itu gSA iR; d itu ij 03
vd vkcfVr gSA mRrj dh vf/kdre 'kCn I hek 50 'kCn A

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

- 5- itu Øekd 11 I situ Øekd 14 rd y?kmRrjh; itu gSA iR; d itu ea
vkrfjd fodYi gSvkj iR; d itu ij 04 vd vkcfVr gSA mRrj dh vf/kdre
'kCn I hek 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- itu Øekd 15 Is itu Øekd 17 rd nh?kñRrjh; itu gSA iR; d itu e
vkrfjd fodYi gSvkj iR; d itu ij 05 vd vkcVr gSA mRrj dh vf/kdre
'kCn I hek 75 '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 75.

- 7- itu Øekd 18 Is itu Øekd 19 rd nh?kñRrjh; itu gSA iR; d itu e
vkrfjd fodYi gSvkj iR; d itu ij 06 vd vkcVr gSA mRrj dh vf/kdre
'kCn I hek 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.

[k.M V* @ Section A

iz u 1 ½ & I gh fodYi pudj fyf[k; s\

1x5= 5½ 5 v.d

Write the correct choice :-

- (i) , s in kFk ftue dkcz gsk g§ dgykrsg§\
 ½ vdkctud ½ dkctud
 ½ ; k§xd ½ feJ.k

A substance which contains carbon is called ;

- (a) Inorganic (b) Organic
 (c) Compound (d) Mixture

- (ii) bl i nkFk dk mi ; kx ifjj{kd ds : i e gsk g§\
 ½ l k§M; e dkctud ½ l k§M; e yo.k
 ½ l k§M; e ckbdkctud ½ l k§M; e cktks V

This substance is used as preservative ;

- (a) Sodium carbonate (b) Sodium Salt
 (c) Sodium bicarbonate (d) Sodium Benzoate

- (iii) uhyk FkkFk dk mi ; kx gsk g§A
 ½ xgusukusea ½ nokb; kaeia
 ½ Nikbz ea ½ jkusea

Blue vitrol is used in ;

- (a) Ornament making (b) in medicine
 (c) in printing (d) in dying

- (iv) l; kt ds i kks ea brus vMi gsk g§\
 ½ , d ½ nks
 ½ rho ½ plj

Such number of carpels found in onion ;

- (a) One (b) Two
 (c) Three (d) Four

- (v) dN ns kks dh l ukvka ds i kl ce Hkh gsk g§A
 ½ i jek.kqce ½ v.kqce

1½ thok.kqce

1½ fo"kk.kqce

Arms of some countries too have bombs -

(a) Atomic

(b) Molecular

(c) Bacterial

(d) Viral

[k.M Č* @ Section A

1½ fjDr LFkkukad h iñrZ djks &

1½ x 5 = 5½ 5 vd

Fill in the blank :-

(i) idk'k ds iñko lsfdlh /krq l s ----- mRl ftk gks yxrs gA
..... are emitted out from the light effect from any metal.

(ii) pfcld ----- i nkFk dks vkdflkr djrk gA
Magnet attracts substances.

(iii) tc vflkdkj d vks mRijd , d gh voLFkk ea gks rks ----- mRijd
dgykrk gA

When reactant and catalyst are in same state then it is called
catalyst.

(iv) , l hfVd vEy dk 0; ki kfjd uke ----- gA
Proffessional name of acetic acid is

(v) thok.kq dh fØ; k }jk ----- ikr fd;k tkrk gA
..... is obtained by the bacterial process.

itu 2& I ñen'kñfdl sdgrsgA ; g fdrus iñkj dk gksk gA \ 1\$1 = 2 vd

What is microscope ? What are its types ?

itu 3& ijufydk fdI idkj cukbl tkrh gA

How coil is prepared ?

itu 4& idfrd pfcld fdI sdgrsgA

What is called Natural magnet ?

itu 5& vueki u fdI sdgrsgA

What is called titration ?

itu 6& mnkl hu foy; u fdI sdgrsgA

What is called neutral solution ?

itzu 7&	?kjæea\P; m\ rkj D; ks yxk; s tkrsg\ A	13\1
	Why fuse wire is used in houses ?	
itzu 8&	eksj foy; u rFkk ekud foy; u fdI sdgrsg\ \	13\1
	What is called molar and standard solution ?	
itzu 9&	n\l\lr rFkk vnh\lr oLryka I sD; k l e>rs gks\ mnkgj .k l fgr fyf[k; A	13\1
	What do understand by "LUMINOUS" and "NON-LUMINOUS" object ?	
itzu 10&	gfjr \O\fr D; k g\\$\\ ekuo thou e\g\fr \O\fr ds egRo dksfyf[k; sA	2\$2=14\1
	What is green revolution ? What is the importance of green revolution in the human life ?	
itzu 11&	fuEu dks mnkgj .k l fgr l e>kb; s & mRijd fo"k] mRijd mRI kgd	12\$23\4\1
	Explain the following with example- Catalytic Poison, Catalytic Promotor	
	~VFlOk OR**	
	mRij .k D; k g\\$\\ fdUgha nks mRij dks ds uke o mi ; ks fyf[k; s A	2\$1\$1=14\1
	What is catalysis ? Write the name and use of any two catalysts.	
itzu 12&	vkDI h , oavukDI h 'ol u e\dkbZ pkj vrj fyf[k; s A	14\1
	Write any four differences between aerobic and anaerobic respiration.	
	~VFlOk OR**	
	'ol u o i\dk'k l \y\\$k. k e\dkbZ pkj vrj fyf[k; s A	1\$1\$1\$1=14\1
	Write any four differences between respiration and photosynthesis.	
itzu 13&	dky\BhMh foy; u ds dk\Z pkj xqk fyf[k; s	1\$1\$1\$1=14\1
	Write any four properties of colloidal solution	
	~VFlOk OR**	
	dky\BhMh foy; u ds dk\Z pkj mi ; ks fyf[k; s A	1\$1\$1\$1=14\1
	Write any four uses of colloidal solution.	
itzu 14&	fo r cYo dk uke\dr fp= cukdj ml dh jpu\ dk o.ku dhft , A	2\$2=14\1

Describe the construction of an electric bulb with the labelled diagram.

^vFkok OR**

fo | r bLrjh dk ukelidr fp= cukdj ml dh jpu k dk o.ku dhft , A 2\$2=1/4%

Describe the construction of an electric iron with labelled diagram.

itzu 15& izt kx }jk fl) dhft , fd idk'k I aySk.k dh fØ; k eO, xJ fudyrh gA

Prove experimentally that oxygen gas is evolved during photosynthesis. 2\$3=1/5%

^vFkok OR**

ok"ikl tlu fØ; k dsfy; si z kx fyf[k; sA 1/5%

Write an experiment for transpiration.

ckxokuh eami ; Dr fuEu mi dj .kak dk fp= cukdj mudh mi ; kxrk fyf[k; A xrh] QkoMk (2½+2½=5)

Write the utility of the following equipments with diagram used in the gardening.

GAINTEE, Phawada (Spade)

^vFkok OR**

ckxokuh esfl pkbz , oñuru ds dke eavkus okys fuEu ; ak dk fp= cukdj mudh mi ; kxrk fyf[k; sA
g tkjkl gfl ; k (2½+2½=5)

Write the utility of the following equipments with diagram used in the irrigation and pruning-

HAZARA, SICKLE (Hansiya)

itzu 17& Øi hQjh dy dk fuEu fcUnyka ij o.ku dhft ; sA 2\$1\$2=1/5%

1- i|i o.ku] 2- i|i I #] 3- v kfkld egRo 1dkbz nkz

Describe the family 'CRUCIFERAE' on the following points-

1. Flower description, 2. Floral formulla,
3. Economic importance (any two)

^vFkok OR**

I kysu h dy dk fuEu fcUnyka ij o.ku dhft ; sA 2\$1\$2=1/5%

1- i|i o.ku] 2- i|i I #] 3- v kfkld egRo 1dkbz nkz

Describe the family 'SOLONACEAE' on the following points-

1. Flower description,
2. Floral formulla,
3. Economic importance (any two)

itzu 18& I ḷen'kñ dk fuEu fcUnyka i j o.ku dhft, A 3\$3=½½
dk; l fof/k] fl)kr

Describe about microscope on the following points -

Working method, Principle

~Vfok OR**

i PNk; k , oami Nk; k ds vñkkj i j l w kg.k , oapñnxg.k dk o.ku dhft; sA

Discribe about solar and lunar eclipse on the basis of umbra and penumbra.

3\$3=½½

itzu 19& fdllgh 6 ykñknk; d thok.kyka dk vñffkñd egRo fyf[k; sA (1x6=6)

Write about economic importance of any six useful bacteria.

~Vfok OR**

fdllgh rhu ekuo jkx mRi llu djusokys thok.kq, oarhu i kni jkx mRi llu djus
okys thok.kqdk uke , oamul smRi llu gksusokys jkxksadsuke fyf[k, A (1x6=6)

Write the name of any three human and three plant diseases causing bacteria
along with the name of disease caused by them.

&&&00&&&

I Ei y mRrj

mRrj 1 &	I gh fodYi	%	1/1 x 5 = 5 1/2 5 vd
(i)	1/2	dkctud	
(ii)	1/2	I kSM; e ctk; V	
(iii)	1/2	xgus cukuse	
(iv)	1/2	rhu	
(v)	1/2	thok.kqce	
1/2 &	fjDr LFkku	%	1/1 x 5 = 5 1/2 5 vd
(i)	byDV		
(ii)	pfdh;		
(iii)	I kkx		
(iv)	fl jdk		
(v)	uhyk		
mRrj 2 &	og ; ft I eal fe oLrq acM fn [kkbz ns h gS1 ven' kldgykrh gA ; snks i ddk ds gks gSA 1- I jy 2- I a Dr		1\$1 = 2 vd
mRrj 3 &	dMfyr NMks ds Åij fo r rkj yi Vdj ifju kfydk cukbz tkrh gA	1/2	
mRrj 4 &	og pfd tks i kdfrd voLFk eik; k tkrk gSmI s i kdfrd pfd dgrsgSA		
mRrj 5 &	vEy , oa{kj dh I kUnrk Kkr djus dh fof/k dks vuksi u dgrsgSA	1/2	
mRrj 6 &	og fofy; u ft I eavEy vFkok {kj ds xqk ughafeyrs vFkk ml foy; u dk pH eku 7 gksk gSmnkl hu foy; u dgrsgSA	1/2	
mRrj 7 &	¶; n rkj dk xyukd de gksk gSvr% bllg?kjkae fo r /kj dh vf/kdrk I s fo r mi dj .kk dks cpkus ds fy; s yxk; k tkrk gA		
mRrj 8 &	1/4 k I ed{k mRrj fy [kus ij 3 vd	1/2	
mRrj 9 &	og fofy; u ft I dh I kUnrk Kkr gks , oa vuksi u eaft I dk mi ; kx djrs gS ml sekud fofy; u dgrsgSA fdI h i nkFk dk , d xte v. kkx dks , d yVj ty ea?kksy us ij tks fofy; u i klr gksk gSmI sekyj foy; u dgrsgSA	1/3	
	os oLrq a tks Lo; ae i ddk' keku gks h gSmUgs nh lr oLrq adgrsgSA		

mnkgj.k & I w] rkjk tkuwdhV

¼ k vU; I ed{ k mRrj feyus ij M_x+vd½

os oLrq aftue Lo; adk i zdk'k ughagksk i jUrqizdk'k i Mus ij os i zdk'keku
gksk gSvnhl r oLrq adgykrh gA mnkgj.k & plnek

¼ k vU; I ed{ k mRrj feyus ij M_x+vd½

mRrj 10& gfjr Økr & ifjHkk"kk%vf/kd I svf/kd mi ; kxh QI ykadh] Qykadh] I fct; ka
dh] [kksk dj [kk|klu] vukt] I fct; ka, oaQy dk mRiknu dj nsk dks [kk|
I eL; k I sfujkdj.k djus dh i gy dks gfjr Økr dgrsgsA

¼ k vU; I ed{ k mRrj feyus ij 1 vd½

mRrj 11& fuEu dks mnkgj.k I fgr I e>kb; s %

mRijd fo"k % dN i nkFkZ viuh I fe mi fLFkfr I smRijd dks fuf"Ø; dj
nrs gA; k fØ; k'khyrk ?kvk nrs gA mRijd fo"k dgykrsgsA t\$ s & H₂SO₄
dh Li 'kzof/k e₂SO₄ + O₂ ds x h; feJ.k e₂Vkl fud vkDI kbM dh FkkMh Hkh
mi fLFkfr gks rks lyue dh mRij.k 'kfDr u"V gks tkrh gS vr% vkl fud
mRijd fo"k dgykrk gA

mRijd mRI kgd % dN i nkFkZ Lo; a mRijd ugha gks fdUrq mRijd dh
fØ; k'khyrk dks c<kus dh {kerk j [krsgs budh I fe ek=k I smRijd dh 'kfDr
c<+ tkrh gS bUga mRijd mRI kgd dgrsgsA NH₃ cukus dh g&j fof/k e₂yk
pwkzds I kfk mi fLFkfr M O mRijd mRI kgd dk dk; Zdjrk gA

vFkok

mRij.k D; k gA fdUgha nks mRijdks ds uke o xqk 2\$1\$1=1/4½

mRij.k % og i nkFkZ tks viuh mi fLFkfr ek= I sjkl k; fud fØ; k dh xfr dks
?kvk ; k c<k nsk gSvks Lo; afØ; k dsvr e₂Hkkj o jkl k; fud I xBu dh nf"V
I sviofrj jgrk gSmRijd dgykrk gA

mRijd ds uke & mi ; kx

1½ MnO₂ & e₂uht Mkbz vkDI kbM dk i z kx i z kx'kkyk e₂O₂ x₂ cukus
e₂gksk gA

2½ vk; ju vkDI kbM Fe₂O₃; g g&j fof/k I svekfu; k x₂ cukus ds dke
vkrik gA

1/2 mijkDr ds vfrfjDr I gh uke o mnkgj.k fy[kus ij 1\$1 vd fn; stko¹
 mRrj 12& vkDI h 'ol u ,oavukDI h 'ol u eadkbZpkj vrj % 1/4½

	vkDI h 'ol u	vukDI h 'ol u
1	; g O ₂ dh mifLFkr ea iwkZ gkrh gA	; g O ₂ dh vuqfLFkfr ea iwkZ gkrh gA
2	bl fØ; k ea Hkkstu dk iwkZ vkDI hdj.k gkrk gA	viwkZ vkDI hdj.k gkrk gS
3	bl fØ; k ds vr ea ty o co ₂ curk gA	bl fØ; k ds vr ea vYdkgy rFkk co ₂ dk fuekZk gkrk gSA
4	bl fØ; k ds vr ea 38 ATP dk fuekZk gkrk gA	bl ea 2] ATP dk fuekZk gkrk gA

1/2 mijkDr ; k vU; I ed{k ij 1&1 vd fn; stko¹
 vFkok
 'ol u o idk'k I dySk.k eadkbZpkj vrj % 1\$1\$1\$1=1/4½

	'ol u	idk'k 'ol u
1	bl fØ; k ea O ₂ xg.k dh tkrh gS CO ₂ fudkyh tkrh gA	bl fØ; k ea CO ₂ xg.k dh tkrh gS, oa O ₂ fudkyh tkrh gA
2	; g fo[kMdkjh fØ; k gA	; g fuekZkdkjh fØ; k gA
3	bl ea tfVy inkFkj I jy inkFkj ea cny tkrs gSA	bl ea l jy inkFkj tfVy curs gSA
4	; g fØ; k I Hkh I e; gkrh gA	; g fØ; k døy idk'k ea iwkZ dh tkrh gA
5	bl fØ; k ea ÅtkZ [kpZ gkrh gA	bl fØ; k ea ÅtkZ I spr gkrh gA
6	bl fØ; k dk I eh dj.k C ₆ H ₁₂ O ₆ +6O ₂ -->6H ₂ O+ 6CO ₂ + 673kcl	bl fØ; k dk I eh dj.k fHkUu gS 6CO ₂ +12H ₂ O+ DykjksQy C ₆ H ₁₂ O ₆ +6H ₂ O+6CO ₂

mRrj 13& dksykbMh foy; u ds dkbZpkj xqk 1/2; d ea 1 vd½
 1- dksykbMh d.k I {en'kh}kj foy; u eansks tk I drs gSA

- 2- ; g foy; u fo"kekash gksk gA
 3- dksykbMh d.k fQYVj i s j l s l jyrk i b l i k j gks tkrsgsA
 4- dksykbMh d.k fujUrj VMh esh xfr djrsjgrs gA bI xfr dksckmuhxfr
 dgrs gA
 1/4Fkok vU; I ed{ k xqk fy [kus i j 1x 4 = 4 v d fn; s tko $\frac{1}{2}$
 vFkok
 dksykbMh foy; u dsdkbZ pkj mi ; kx %& 1\$1\$1\$1=1/4
 1- ty l sv'kf; kanj djus ij ty 'kksku ds mi ; kx eA
 2- /k yk l sdkaZu ds d.k vyx djusea dkj [kus dh fpifu; ka e am i ; kx
 3- ikuh l scMs'kgjkaeukyh ds xns ikuh vyx djuse am i ; kx gksk gA
 4- jcj m | kx e am i ; kx fd; k tkrk gA
 5- vkskf/k ds : i e a l k n; Zi l k/ku ds : i e j mi ; kx fd; k tkrk gA
 1/4 k vU; I ed{ k mRrj i j v d fn; s tko $\frac{1}{2}$
 mRrj 14& fo | r cYo dk ukekdr fp= cukdj ml dh jpuik dk o.ku dhft , A 2\$2=1/4



bl dk v^kf^o"dkj , M^hl u usfd; k Fkk ; g dk^p dk cuk g^vk cYc gksk gSftI ds
vnj fjDr LFku ; k fu; k jgrk gA vfØ; x^s sHkjh jgrh gSA bl dk^p ds
cYc e^aV^aLVu dk r^rqyxk jgrk g^stsfo | r i^dkg I s'kh?kz gh jDr rlr xe^z
gkdj i^dlk'k ns^k g^srFkk fo | r i^dkg cn djus ij 'kh?kz gh B^Mk gks tkrk gSA
bl fo | r cYc dk i^z kx ge ?kj^j v^mQI karFkk I ko^zt fud LFku ij i^dlk'k
i^zlr djus dsfy; sdjrs g^sA
vFkok

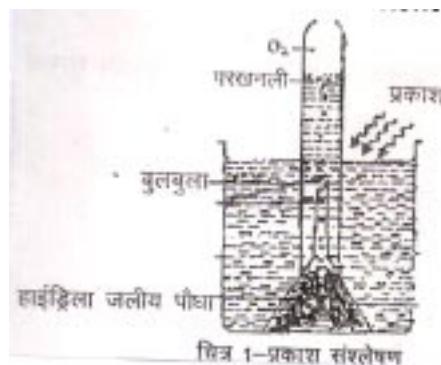
fo | q bLrjh dk ukefdr fp= o jpuk % fp= 2\$jpuk 2 ¾ 2\$2=½
fo | q bLrjh eaukbØke t§ h feJ /kkraqdk , yheV vHkd dh i rkadscph nck
jgrk gSbu i jrkadks , EcL Vkw dh lyV dsuhpsj [k fn; k tkrk gS , EcL Vkl
fo | q jksku dk dk; Z djrk g\$ ftI eabLrjh ds ykgs okys Hkkx ea fo | q /kkjk

ugha^g i krh A , yhe^w ea l s i dkfgr gks ij ;syky xe^z gks dj rki mRi uu djrk g§



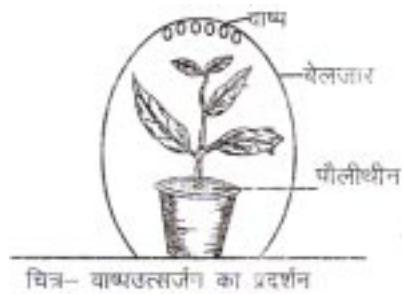
ft l e^a ykgs dh bLrjh xe^z gks tkrh g§

Mo | r bLrjh o.ku djus ij 2 vd] fp= ij 2 vd fn; stko^z
mRrj 15& iz kx }jk fl) dft, fd i dk'k I ay^z.k dh fØ; k ea O₂ x§ fudyrh g§&
iz kx & , d chdj e^a tyh; i k^zkk gkbM^yk yd j bl sdkp dh dhi l s<d dj
j [krsg§chdj ty l shk j nsg§A , d ty l shk j i j [k uyh yd j mYVh
j [k nsg§A l wZ ds i dk'k dh mifLFkfr ea i dk'k I ay^z.k fØ; k }jk
v^zD htu curk gStksdhi l sgksh g^zij [kuyh ea, df=r gks h jgrh g^zty
/khj&/khjs mrjrk tk rk g§A ij [kuyh ea, df=r x§ ds l idz e^a tyrh g^z
rhyh ystku s ij og v^z rhok l s tyrh g^zvr%; g fl) gksk g^zfd i dk'k
I ay^z.k fØ; k ea O₂ x§ fudyrh g§ 1/3\$2³/45¹/2



vFkok

ok"ikRI tlu fØ; k iz kx }jk fl) djuk 1/2 2 vd] o.ku 3 vd 3/4 5¹/2
ok"ikRI tlu dk in'ku % xeyse^axs i k^zkkadks yd j xeysdks i k^zhFku }jk
<ddj , d dkp dh ly^z ij j [kdj dkp dscytkj }jk <d nsg§, oar§ k j
iz kx dks l wZ ds i dk'k ea j [k nsg§A 7&8 ?k/si 'pkr c^ztkj dsÅi jh Hkhrjh
l rg ij ikuh dh cansfn [kkbZnusyxrh g§A ; scnsok"ikRI tlu fØ; k ds i 'pkr
fudyrh ok"i l s fufer g§



mRrj 16& ckxokuh eam; Dr fuEu mi dj.k dkba&2

$\frac{1}{2}\frac{1}{2} + 2\frac{1}{2} = 5\frac{1}{2}$

1- xjh & mi ; kxrk %&

$1\frac{1}{2}$ i Fkjhyh txg ds iRFkj gVkdj m|ku cukus ds fy; sA

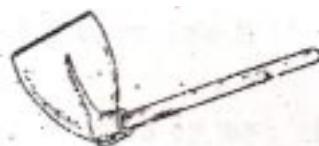
$2\frac{1}{2}$ txg dksI ery cukus ds dke vkrk gA



2- QkoMk & mi ; kxrk %&

$1\frac{1}{2}$ QkoMk xgjh xMkb; ka ds fy, dke vkrk gA

$2\frac{1}{2}$ QkoMk ckdk ckku; ukyh cuku; feVVi p<ku; [kkn feyku o Hkfie
dksI ery djus ds dke vkrk gA



चित्र-फावड़ा

vFkok

ckxokuh eafl pkbz, oa Ñuru ds dke ea vkus okys 2 ; aksa ds fp= o mudh
mi ; kxrk %&

gtkjkl gfl ; k

1- g¹tkjk %& 1½bl midj.k }jk D; kfj ; kaei kuh nusdk l epr i c¹fd; k
tkrk gA

2½m | ku dsullga i k¹kkadks l hpusdsfy; sQokjsds: i eabl dk
mi ; kx fd; k tkrk gA



2- g¹l ; k %& 1½ ; g v/k¹ndk j vkdfr dk gRFks ; Dr ; & gS ; g 'kkd ekuh
dks Åij&Åij l sdkVus ds dke vkrk gA



mRrj 17& ØI hQjh dy dk fuEu fcUnyka ij o.ku dhft ; sA 2\$1\$2=½

1- i¹i o.ku] 2- i¹i l #] 3- vkkfkd egRo ¼dkbz nk¹
i¹i o.ku djus ij 2 vd

vkkfkd egRo & el ky] Hkkstu] ry] vkskf/k e¹l sfdl h dsnksegRo fy[kus ij
2 vd fn; ks tkosA

vFkok

I ksyus h dy dk fuEu fcUnyka ij o.ku dhft ; sA 2\$1\$2=½

1- i¹i o.ku] 2- i¹i l #] 3- vkkfkd egRo ¼dkbz nk¹
i¹i o.ku djus ij 2 vd

vkkfkd egRo & Hkkstu] el ky] vkskf/k rEckd] l pjrk dsfy; } [kjirokj e¹
l sfdl h nksegRo fy[kus ij 2 vd fn; s tkosA

mRrj 18& I qen'k¹dk fuEu fcUnyka ij o.ku dhft , A 3\$3=½
dk; z fof/k] fl) k¹

I qen'k¹dk; fof/k fy[kus ij 3 vd] fl) k¹ fy[kus ij 3 vd fn; s tkosA
vFkok

iPNk; k , oami Nk; k dsvk/kkj ij I wkg.k , oaplnxg.k dk o.ku djukA
 I wkg.k o.ku djusij 3 vd A
 plnxg.k o.ku djusij 3 vd A 3\$3=1/6½
 mRrj 19& ykkknk; d tho.kvka dk vkkfkl egRo %
 fl jdk cukusej I kbfd vEy ej , Ydkgy cukusej i uhy ngh eD[ku cukusej
 pk; rEckdw0; ol k; ej vpkj] uhy] tW m | kx ej pez jkx] Hkst u cukusej
 vksf/k m | kx ea thok.kqce] df'k ea A
 mijkDr ea sfal h 6 fclnjkaij o.ku djusij iR; d ea1&1 vd fn; k tkoA
 vFkok
 fdllgharhu ekuo jkx mRiuu djusokysthok.kq, oai kni jkx mRiuu djusokys
 thok.kq ds uke , oamueamRiuu gksokys jkx ds uke %
ekuo jkx **thok.kq dk uke**
 {k; jkx ; k rifsnd & ekbdkoDVhfj; e V; ejdylsI e
 gsk & ckbfo; kdkyjh
 VkbQkbM & lkYeks k VkbQkd k

i kni jkx **thok.kq dk uke**
 iRrkxkdh dk dkyk jryk & tFkekuI dSi fLVI
 uk'ki krh , oal d dk tyu vkekuh & bohiu; k , feykolk
 uhcdk ddk jkx & tSI kbVh
 iR; d ij 1 vd] fu/kkijr gsjkx o thok.kqdk uke fy[kusij 1&1 vd fn; stkosA

&&&00&&&

Set - C

gk; j I dsMjh Ldy I VHQdV ijlk

Higher Secondary School Certificate Examination

I fiiy&itu i=

SAMPLE PAPER

fo"k; % (Subject) - foKlu ds rRo

I e; 3 ?k.VK (Time- 3 Hrs)

d{lk % (Class) - ckjgoha 120h

i wld 100 (M.M.)

(Instruction) & Kunzkh

- 1- I Hkh itu gy djuk vfuok; ZgSA

Attempt all the Questions

- 2- itu Øekd 01 ea 10 vd fu/kkrjr gSA nks mi [k.M gSA [k.M ^v** ea 05
cgfodYih; itu rFkk [k.M ^c** ea 05 fjDr LFkkuk dh i firz vFkok mfpr
I cak tkSM+ A iR; d itu dsfy, 1 vd vkcfVr gSA

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

- 3- itu Øekd 02 Isitu Øekd 06 rd vfr y?kmRrjh; itu gSA iR; d itu
ij 02 vd vkcfVr gSA mRrj dh vf/kdre 'kCn I hek 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- itu Øekd 07 Isitu Øekd 10 rd y?kmRrjh; itu gSA iR; d itu ij 03
vd vkcfVr gSA mRrj dh vf/kdre 'kCn I hek 50 'kCn A

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

- 5- itu Øekd 11 Isitu Øekd 14 rd y?kmRrjh; itu gSA iR; d itu ea
vkrfjd fodYi gSvkj iR; d itu ij 04 vd vkcfVr gSA mRrj dh vf/kdre
'kCn I hek 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- itu Øekd 15 Is itu Øekd 17 rd nh?kñRrjh; itu gSA iR; d itu e
vkrfjd fodYi gSvkj iR; d itu ij 05 vd vkcVr gSA mRrj dh vf/kdre
'kCn I hek 75 '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 75.

7- itu Øekd 18 Is itu Øekd 19 rd nh?kñRrjh; itu gSA iR; d itu e
vkrfjd fodYi gSvkj iR; d itu ij 06 vd vkcVr gSA mRrj dh vf/kdre
'kCn I hek 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.

[k.M ^V* @ Section A]

izu 1 ¼/½ & I gh fodYi pudj fyf[k; s \

$$\frac{1}{4} \times 5 = 5\frac{1}{2}$$

Write the correct choice:-

- (i) , \$ i nkFlz ft ues dkclu ughagksk g\$ dgykrs g\$ \
½½ vdktud ½½ dkctud
½½ ; kfxd ½½ feJ.k

A Substance which does not contain carbon is called ;

- (ii) phuh dscrū tkMus ebl dk mi ; kx gksk gS \
½ ½ | ksjy | he JV ½ ½ | he JV
½ ½ | YQ JV ½ ½ | YQkbM

It is used to join china clay pots (porceline);

- (a) Sorrel cement (b) Cement
(c) Sulphate (d) Sulphide

Blue victrol is used in ;

- (iv) i $\ddot{\text{t}}$ i dk eknk tuu vx gksk gA
 $\frac{1}{4} \frac{1}{2}$ i $\ddot{\text{p}}\ddot{\text{s}}$ j $\frac{1}{4} \frac{1}{2}$ tk; kx
 $\frac{1}{4} \frac{1}{2}$ nyit $\frac{1}{4} \frac{1}{2}$ cksz nyit

Male reproductive organ of flower is :

- (v) *n̥k l̥ s̥ngh cuus d̥h f∅; k̥ buds }kjk g̥s̥ *
 $\frac{1}{4} \frac{1}{2}$ *thok.kq* $\frac{1}{4} \frac{1}{2}$ *cht k.kq*
 $\frac{1}{4} \frac{1}{2}$ *d̥hVk.kq* $\frac{1}{4} \frac{1}{2}$ *i k̥s̥k.kq*

Preparation of curd from milk is done by ;

- | | |
|--------------|--------------|
| (a) Bacteria | (b) Spores |
| (c) Germs | (d) Pathogen |

[k.M ^c* @ Section B

1/2 fJDr LFkkuk dh ifrz dks &

1/2 x 5 = 5 1/2 5 v

Fill in the blanks :-

(i) i dk'k ds ekxz dks ----- dgrs gSA

The path of light is called

(ii) pfcid ds e/; dk Hkx ----- gksk gSA

The middle part of the magnet is

(iii) tc dkbl i nkFkZ vflkfO; k dh xfr dks c< k nsrk gS rks ml s ----- mRij d
dgrs gSA

When any substance increases the speed of reaction then it is called
catalyst.

(iv) di Ms /kksus ds I kMs dk jkl k; fud uke ----- gSA

Chemical name of washing soda is

(v) thok.kq nuk dh 'kdjk I s ----- vEy mRiuu djrs gSA

Bacteria produces..... acid from the carbohydrate of the milk.

itu 2& bUnzkuuk dc fn[kykbZ i Mfk gS\ bl ds cuus dk D; k dkj .k g\\$1\\$1 = 2 v

When rainbow is seen ? What are the reasons for its formation ?

itu 3& fo | r pfcid fdrus i dkj ds gks g\\$ \

1/2

What are the types of an electromagnet ?

itu 4& vktVM dk fu; e fyf[k; sA

1/2

Write the ORESTED rule.

itu 5& i ekf.kd foy; u fdI s dgrs g\\$ \

1/2

What is called standard solution ?

itu 6& cQj foy; u fdI s dgrs g\\$ \

1/2

What is buffer solution ?

itzu 7&	cYokaeafuf"Ø; x§ D; kahkjh tkrh gs\	1/3½
	Why inert gases are filled in the bulbs ?	
itzu 8&	mnkl hujdjk.fØ; k fdls dgrs g§A ifjHkk"kk mnkgj.k l fgr fyf[k, A	1/3½
	What is neutralization. Define with example.	
itzu 9&	iPNk; k vks miPNk; k e§D; k vrj gs\ Li"V dhft, A	
	Explain what is the difference between umbra and penumbra ?	
itzu 10&	eul; ds n§ud thou e§fdpu xkMl ds fdUgharhu mi ; kx dksfyf[k, A	1/3½
	Write any three uses of kitchen garden in the daily life of human beings.	
itzu 11&	fuEu dks mnkgj.k l fgr l e>kb; s & mRijd fo"K] mRijd mRI kgd	1/2\$2³/4½
	Explain the following with example-	
	Catalytic Poison, Catalytic Promotor	
	~vFkok OR**	
	mRij.k D; k g§A fdUghans mRijdks ds uke o mi ; kx fyf[k; s A	2\$1\$1=1/4½
	What is catalysis ? Write the name and use of any two catalysts.	
itzu 12&	vkDI h , oavukDI h 'ol u e§dkbZ pkj vrj fyf[k; s A	1/4½
	Write any four differences between anaerobic and aerobic respiration.	
	~vFkok OR**	
	'ol u o i§dk'k l dy§k.k e§dkbZ pkj vrj fyf[k; s A	1\$1\$1\$1=1/4½
	Write any four differences between respiration and photosynthesis.	
itzu 13&	dkyHm foy; u ds dkBZ pkj xqk fyf[k; s	1\$1\$1\$1=1/4½
	Write any four properties of colloidal solution	
	~vFkok OR**	
	dkyHm foy; u ds dkBZ pkj mi ; kx fyf[k; s A	1\$1\$1\$1=1/4½
	Write any four uses of colloidal solution.	
itzu 14&	fo r cYo dk ukefdr fp= cukdj ml dh jpu dk o.ku dhft, A	2\$2=1/4½
	Describe the construction of an electric bulb with the labelled diagram.	
	~vFkok OR**	

fo | r bLrjh dk ukekdr fp= cukdj ml dh jpu k dk o.ku dhft , A 2\$2=14½

Describe the construction of an electric iron with labelled diagram.

itzu 15& itz kx }kjk fl) dhft , fd i ddk'k I aySk.k dh fØ; k eO, xJ fudyrh gA

Prove experimentally that oxygen gas is evolved during photosynthesis. 2\$3=15½

^Vfok OR**

ok"ikl tlu fØ; k dsfy; s iz kx fyf[k; sA 15½

Write an experiment for transpiration.

ckxokuh eami ; Dr fuEu mi dj .kkdk fp= cukdj mudh mi ; kxrk fyf[k; A xrh] QkoMk (2½+2½=5)

Write the utility of the following equipments with diagram used in the gardening.

GAINTEE, Phawada (Spade)

^Vfok OR**

ckxokuh eaf pkbz , oaÑuru ds dke eavkusokysfuEu ; aakdk fp= cukdj mudh mi ; kxrk fyf[k; sA

g tkjk gfl ; k (2½+2½=5)

Write the utility of the following equipments with diagram used in the irrigation and pruning-

HAZARA, SICKLE (Hansiya)

itzu 17& Øi hQjh dy dk fuEu fcunyka ij o.ku dhft ; sA 2\$1\$2=15½

1- i qj o.ku] 2- i qj l #] 3- vlfFkd egRo ¼dkbz nkz

Describe the family 'CRUCIFERAE' on the following points-

1. Flower description, 2. Floral formulla,
3. Economic importance (any two)

^Vfok OR**

I kyus h dy dk fuEu fcunyka ij o.ku dhft ; sA 2\$1\$2=15½

1- i qj o.ku] 2- i qj l #] 3- vlfFkd egRo ¼dkbz nkz

Describe the family 'SOLONACEAE' on the following points-

1. Flower description, 2. Floral formulla,
3. Economic importance (any two)

itzu 18&	Iten' k ^h l dk fuEu fcUnyka i j o.k ^h u dhft, A dk; l fof/k] fl) kr	3\$3=½½
Describe about microscope on the following points -		
Working method, Principle		
~Vfok OR**		
iPNk; k , oami Nk; k dsvk/kkj i j l w kg.k , oapUnxg.k dk o.k ^h u dhft; sA		
Discribe about solar and lunar eclipse on the basis of umbra and penumbra.		
		3\$3=½½
itzu 19&	fdlugh 6 ykHknk; d thok. k ^h ka dk vlfkld egRo fyf[k; sA	(1x6=6)
Write about economic importance of any six useful bacteria.		
~Vfok OR**		
fdlugh rhu ekuo jks mRi lu djusokys thok.kq, oarhu i kni jks mRi lu djusokys thok.kqdk uke , oamul smRi lu gksusokys jks kadsuke fyf[k, A	(1x6=6)	
Write the name of any three human and three plant diseases causing bacteria along with the name of disease caused by them.		

&&&00&&&

I Ei y mRrj

mRrj 1 &	1 gh fodYi &	$\frac{1}{4} \times 5 = 5\frac{1}{2}$	5 vd
(i)	$\frac{1}{4}\frac{1}{2}$ vdkctud		
(ii)	$\frac{1}{4}\frac{1}{2}$ I ksy I hev		
(iii)	$\frac{1}{4}\frac{1}{2}$ nokbz ka ea		
(iv)	$\frac{1}{4}\frac{1}{2}$ tk; kak		
(v)	$\frac{1}{4}\frac{1}{2}$ thok.kq		
$\frac{1}{4}\frac{1}{2}$ fjDr LFkku &		$\frac{1}{4} \times 5 = 5\frac{1}{2}$	5 vd
(i)	fdj.k i t		
(ii)	mnkl hu		
(iii)	/kukRed		
(iv)	I kEM; e dkckzv		
(v)	I fDVd		
mRrj 2 &	bUnzkuuk cjl kr eafn [kkbz i Mfk gS, oabl ds cuus dk dkj.k i dk'k dk o.kz fo{ksi .k gksrk gA	$\frac{1}{4} \times 1 = 1$	1\$1 = 2 vd
mRrj 3 &	fo r p[cd nksizlkj ds gks gA	$\frac{1}{4} \times 1 = 1$	1\$1 = 2 vd
	1- LFkkb] 2- vLFkkbZ		
mRrj 4 &	fdl h rkj eaf o r /kkj i dkfgr djuseamI dsl ehi p[cdh; {ks= mRi lu gks gA	$\frac{1}{4} \times 1 = 1$	$\frac{1}{2}\frac{1}{2}$
mRrj 5 &	vukiu dh ifØ; k ea, k foy; u ft l dh I kUnrk Kkr gks i zkf.kd foy; u dgykrk gA	$\frac{1}{4} \times 1 = 1$	$\frac{1}{2}\frac{1}{2}$
mRrj 6 &	, k foy; u ft l ea FkkMh ek=k eavEy ; k {kj feyk nsus l sml ds pH eku ea dkbz ifjorlu ughagksrk gS cQj foy; u dgykrk gA	$\frac{1}{4} \times 1 = 1$	$\frac{1}{2}\frac{1}{2}$
mRrj 7 &	vf/kd rki ij fQykeV dk Hkki cuuk : d tkrk gSft l eacYc vf/kd fnuka rd dk; Zdj l drsgsA	$\frac{1}{4} \times 1 = 1$	
mRrj 8 &	vEy , oa{kj dks vki l eafeykus ij tc vEy vks {kj ds xqk u"V gks tk; s rks , h fLFkfr dks mnkl hdj.k dgrs gSA	$\frac{1}{4} \times 1 = 1$	

mnkgj.k & NaOH + 2 HCl & NaCl₂ + H₂O

1/4 k led{ k ifjHkk"kk ; k mnkgj.k nus ij 1/2

mRrj 9& iPNk; k dh ifjHkk"kk fy[kus ij M+vd

miPNk; k dh ifjHkk"kk fy[kus ij M+vd

mRrj 10& fdpu xkMz ds rhu mi ; kx fy[kus ij 1 vd A

mRrj 11& fuEu dks mnkgj.k l fgr l e>kb; s %

mRijd fo"k & dN inkFkZ viuh l fe mifLFkfr l smRijd dks fuf"Ø; dj
nrs gA; k fØ; k'khyrk ?kvk nrs gA mRijd fo"k dgykrsgA t\$ s & H₂SO₄
dh Li 'kz fof/k e₂SO₄ + O₂ ds x\$ h; feJ.k e₂Vkl fud vkDI kbM dh FkkMh Hkh
mifLFkfr gks rks lyfVue dh mRij.k 'kfDr u"V gks tkrh gS vr% vkl fud
mRijd fo"k dgykrk gA

mRijd mRI kgd & dN inkFkZ Lo; a mRijd ugha gks s fdUrq mRijd dh
fØ; k'khyrk dks c<ku dh {kerk j [krsgA budh l fe ek=k l smRijd dh 'kfDr
c<+tkrh gS bUg amRijd mRI kgd dgrsgA NH₃ cukus dh gkj fof/k e₂ykg
pwkZ ds l kfkr mifLFkfr MO mRijd mRI kgd dk dk; z djk gA

vFkok

mRij.k D; k gA fdUgha nks mRijd ds uke o xqk 2\$1\$1=1/4 1/2

mRij.k & og inkFkZ tks viuh mifLFkfr ek= l sjkl k; fud fØ; k dh xfr dks
?kvk ; k c<k nsk gSvkj Lo; afØ; k dsvr e₂Hkkj o jkl k; fud l xBu dh nf"V
l sviofrj jgrk gSmRijd dgykrk gA

mRijd ds uke & mi ; kx

1/2 MnO₂ & e₂uht MkbZ vkDI kbM dk iz kx iz kx'kkyk e₂O₂ x\$ cukus
e₂gksk gA

2/2 vk; ju vkDI kbM Fe₂O₃; g gkj fof/k l svekfu; k x\$ cukus ds dke
vkrk gA

1/4 mijkDr ds vfrfjDr l gh uke o mnkgj.k fy[kus ij 1\$1 vd fn; s
tko

mRrj 12& vkDI h 'ol u , oavukDI h 'ol u e₂dkbZ pkj vrj % 1/4 1/2

	vkDI h 'ol u	vukDI h 'ol u
1	; g O ₂ dh mifLFkr ea iwkz gksrh gA	; g O ₂ dh vuqfLFkfr ea iwkz gksrh gA
2	bl fØ; k ea Hkkstu dk iwkz vkDI hdj.k gksrk gA	viwkz vkDI hdj.k gksrk gS
3	bl fØ; k ds vr ea ty o co ₂ curk gA	bl fØ; k ds vr ea vYdkgy rFkk co ₂ dk fuekZk gksrk gSA
4	bl fØ; k ds vr ea 38 ATP dk fuekZk gksrk gA	bl ea 2] ATP dk fuekZk gksrk gA

1mijkDr ; k vU; I ed{k ij 1&1 vd fn; s tko\$

vFkok

'ol u o idk'k I dy\$ k eadkbZ pkj vrj %

1\$1\$1\$1=1/4½

	'ol u	idk'k 'ol u
1	bl fØ; k ea O ₂ xg.k dh tkrh g\$CO ₂ fudkyh tkrh gA	bl fØ; k ea CO ₂ xg.k dh tkrh g\$, oaO ₂ fudkyh tkrh gA
2	; g fo[kMdkjh fØ; k gA	; g fuekZkdkjh fØ; k gA
3	bl ea tfVy inkFkI l jy inkFkI ea cny tkrs gSA	bl ea l jy inkFkZ tfVy curs gSA
4	; g fØ; k I Hkh I e; gksrh gA	; g fØ; k døy idk'k ea iwkz dh tkrh gA
5	bl fØ; k ea ÅtkZ [kpZ gksrh gA	bl fØ; k ea ÅtkZ l spr gksrh gA
6	bl fØ; k dk I ehdj.k C ₆ H ₁₂ O ₆ +6O ₂ -->6H ₂ O+ 6CO ₂ + 673kcl	bl fØ; k dk I ehdj.k fHkUu g\$ 6CO ₂ +12H ₂ O+ DykjksQy C ₆ H ₁₂ O ₆ +6H ₂ O+6CO ₂

mRrj 13& dksykbMh foy; u ds dkbZ pkj xqk ¼ R; d ea 1 vd½

1- dksykbMh d.k I {en'kh}jk foy; u eansks tk I drs gSA

2- ; g foy; u fo"kekakh gksrk gA

- 3- dksykbMh d.k fQYVj iij lsI jyrk iold ikj gks tkrsgsA
 4- dksykbMh d.k fujUrj VMh esx xfr djrsjgrsgsA bl xfr dksckmuhxfr
 dgrsgsA

1/4Fkok vU; I ed{ k xqk fy[kus ij 1x 4 = 4 vld fn; s tko $\frac{1}{2}$
 vFkok

dksykbMh foy; u ds dkbZ pkj mi ; kx % 1\$1\$1\$1=1/4 $\frac{1}{2}$

- 1- ty ls v'kj; kanj djus ij ty 'kkku ds mi ; kx esA
 2- /kjk l s dkcLu ds d.k vyx djuseadkj [kkus dh fpefu; ka esmi ; kx
 3- ikuh l s cMs 'kgjka esukyh ds xns ikuh vyx djuseami ; kx gksk gA
 4- jcj m | kx esmi ; kx fd; k tkrk gA

- 5- vkskf/k ds : i es l k; z id k/ku ds : i ej mi ; kx fd; k tkrk gA
 1/4 k vU; I ed{ k mRrj ij vld fn; s tko $\frac{1}{2}$

mRrj 14& fo | r cYc dk ukekldr fp= cukdj ml dh jpuk dk o.ku dhft , A 2\$2=1/4 $\frac{1}{2}$



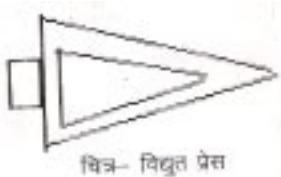
bl dk vlfodkj , Mh u usfd; k Fkk ; g dkp dk cuk gvk cYc gksk gsft | ds
 vnj fjDr LFku ; k fu; k jgrk gA vfO; xS sHkjh jgrh gSA bl dkp ds
 cYc esVxLVu dk rryxk jgrk gStksfo | r iokg l s 'kh?kz gh jDr rlr xel
 gkdj iok'k nsrk gSrFkk fo | r iokg cns djus ij 'kh?kz gh BMk gks tkrk gSA
 bl fo | r cYc dk iz kx ge ?kjh vklQI karFkk l kozfud LFku ij iok'k
 iklr djusdsfy; sdjrs gSA

vFkok

fo | r bLrjh dk ukekldr fp= o jpuk % fp= 2\$j jpuk 2 3/4 2\$2=1/4 $\frac{1}{2}$

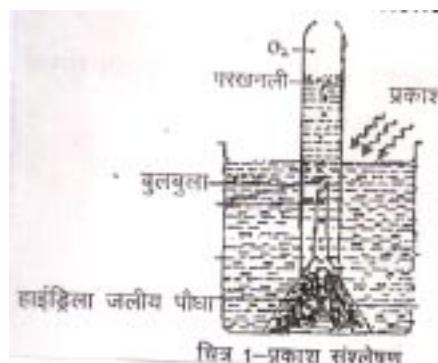
fo | r bLrjh esukbOke tsh feJ /kkrqdk , yhe vHkd dh i rksdchp nck
 jgrk gsbu ijkak ds , EctVxW dh ly ds uhpssj [k fn; k tkrk gS , EctVxI
 fo | r jkku dk dk; zdjrk gft | esabLrjh ds ykgsokysHkkx esfo | r /kkj
 ughacg ikrh A , yhe es l s i okfgr gks ij ; syky xel gkdj rki mRiu

djrk g§



ftl eayks dh bLrjh xeZ gks tkrh g§

15o | r bLrjh o.ku djus ij 2 vd] fp= ij 2 vd fn; s tko§
 mRrj 15& iZ kx }kjk fl) dlf, fd iZk'k I ay§.k dh fØ; k eaO, x§ fudyrh g§
 iZ kx & , d chdj eaytih; i kkk gkbfMyk ydij bl sdkp dh dhi I s<d dj
 j[krsg§chdj ty I shkj nsrg§A , d ty I shkjh ijh ij[k uyh ydij mYh
 j[k nsrg§A I wZ ds iZk'k dh mifLFkfr ea iZk'k I ay§.k fØ; k }kjk
 vkl htu curk g§tksdhi I sgksh g§ij [kuyh ea, df=r gksh jgrh g§ty
 /khj&/khjsmrjrk tkrk g§A ij [kuyh ea, df=r x§ ds I adzeaytih g§
 rhyh ys tkus ij og vkl rhok I styrh g§vr%; g fl) gksk g§fd iZk'k
 I ay§.k fØ; k eaO, x§ fudyrh g§ 1B\$23/45½



vFkok

ok"ikRI tlu fØ; k iZ kx }kjk fl) djuk 1fp= 2 vd] o.ku 3 vd ¾ 5½
 ok"ikRI tlu dk in'ku %& xeyseayxs i kkkadks ydij xeyadks i klyhfku }kjk
 <ddj , d dkp dh lyV ij j[kdj dkp dscytkj }kjk <d nsrg§, oar§ kj
 iZ kx dksI wZdsiZk'k eaj [k nsrg§A 7&8 ?k/si 'pkr caytkj dsÅijh Hkhrjh
 I rg ij ikuh dh cansfn[kkbZnusyxrh g§A ; scnsok"ikRI tlu fØ; k dsi 'pkr
 fudyrh ok"i I sfufel g§



mRrj 16& ckxokuh eam; Dr fuEu mi dj.k dkba&2

$\frac{1}{2}\frac{1}{2} + 2\frac{1}{2} = 5\frac{1}{2}$

1- xjh & mi ; kxrk %&

$1\frac{1}{2}$ i Fkjhyh txg ds iRFkj gVkdj m|ku cukus ds fy; sA

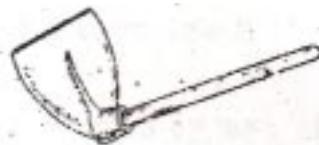
$2\frac{1}{2}$ txg dksI ery cukus ds dke vkrk gA



2- QkoMk & mi ; kxrk %&

$1\frac{1}{2}$ QkoMk xgjh xMkb; ka ds fy, dke vkrk gA

$2\frac{1}{2}$ QkoMk ckdk ckku; ukyh cuku; feVVi p<ku; [kkn feyku so Hkfie
dksI ery djus ds dke vkrk gA



चित्र-फावड़ा

vFkok

ckxokuh eafl pkbz, oa Ñuru ds dke ea vkus okys 2 ; aksa ds fp= o mudh
mi ; kxrk %&

gtkjkl gfl ; k

1- g¹tkjk %& 1½bl midj.k }jk D; kfj ; kaei kuh nusdk l epr i c¹fd; k
tkrk gA

2½m | ku dsullga i k¹dklks l hpusdsfy; sQokjsds: i eabl dk
mi ; kx fd; k tkrk gA



2- g¹il ; k %& 1½ ; g v/k¹ndk j vkdfr dk gRFks ; Dr ; & gS ; g 'kkd ekuh
dk¹s Åij&Åij l sdkVusds dke vkrk gA



mRrj 17& ØI hQjh dy dk fuEu fcUnyka ij o.ku dhft ; sA 2\$1\$2=½

1- i¹i o.ku] 2- i¹i l #] 3- vkkfkl egRo ½dkbz nk¹
i¹i o.ku djus ij 2 vd

vkkfkl egRo & el ky¹ Hkkstu] ry] vkskf/k e¹l sfdl h dsnksegRo fy [kus ij
2 vd fn; ks tkosA

vFkok

I ksyus h dy dk fuEu fcUnyka ij o.ku dhft ; sA 2\$1\$2=½

1- i¹i o.ku] 2- i¹i l #] 3- vkkfkl egRo ½dkbz nk¹
i¹i o.ku djus ij 2 vd

vkkfkl egRo & Hkkstu] el ky¹ vkskf/k rEckd] l qjrk dsfy; } [kjirokj e¹
l sfdl h nksegRo fy [kus ij 2 vd fn; s tkosA

mRrj 18& I qen'k¹dk fuEu fcUnyka ij o.ku dhft , A 3\$3=½
dk; z fof/k] fl) k¹

I qen'k¹dk; fof/k fy [kus ij 3 vd] fl) k¹ fy [kus ij 3 vd fn; s tkosA
vFkok

iPNk; k , oami Nk; k dsvk/kkj i j I w kg.k , oaplnxg.k dk o.ku djukA	
I w kg.k o.ku djusij 3 vd A	
plnxg.k o.ku djusij 3 vd A	3\$3=1/6½
mRrj 19&	
ykkknk; d tho.kvka dk vkkfkl egRo %	
fl jdk cukuse] I kbfd vEy e] , Ydkgy cukuse] i uhj ngh eD[ku cukuse]	
pk; rEckdw0; ol k; e] vpkj] uhj] tW m kx e] pezjkx] Hkkst u cukuse]	
vkSkf/k m kx ea thok.kqce] df"k eaA	
mi jkDr ea sfal h 6 fclnjkaij o.ku djusij iR; d ea1&1 vd fn; k tkoA	
vFkok	
fdlgharhu ekuo jkx mRiuu djusokysthok.kq, oai kni jkx mRiuu djusokys	
thok.kqds uke , oamueamRiuu gksokys jkxkads uke %	
ekuo jkx	thok.kq dk uke
{k; jkx ; k rifsnd	& ekbdkoDVhfj; e V; ejdyksf e
gfk	& ckbfo; kdkyjh
VkbQkbM	& lkYeks k VkbQkd k
i kni jkx	thok.kq dk uke
iRrkxkikh dk dkyk jryk	& tifikekukl dsi fLVI
uk'ki krh , oal o dk tyu vxekuh	& bohiu; k , feykolgk
uhcdk ddk jkx	& ts1 kbVh
iR; d ij 1 vd] fu/kkijr gsjkx o thok.kqdk uke fy[kusij 1&1 vd fn; stkosA	

&&&00&&&