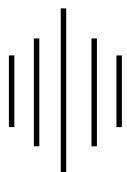
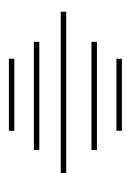




I Ei y&it u i =



d{kk XII oha



Ñf"k foKku ds rRo ,oa xf.kr

1/fo | kspr i 1/ksx1/2
NÙkhI x<+ek/; fed f'k{kk e.My] jk; ig

it u & i= dh ; kst uk

Scheme of Question Paper

fo"k; % Ñf"k foKku ds rRo ,oa xf.kr

i wkkd %75

I e; %3 ?ka/s

i j h{kk % gk; j l sds Mjh ¼12oh½

½v½ 'kɔkf.kd mnθs ; ds vuŋ kj eku

(A) Weightage as per Educational objective:

I O ØØ	mnaſ ;	vø	i fr'kr
1-	Klu (Knowledge)	30	40%
2-	vøckſk (Understanding)	30	40%
3-	vui; lꝫ , oꝫ dſky (Application & Skill)	15	20%
	; kꝫ	75	100%

1c½ bdkbbkj vdkls dk eku

॥ ፳ ዓይነት ስርዓት ስርዓት (Difficulty Level)

10 ØO	mnas ;	vd	i fr'kr
1-	I jy (Easy)	30	40%
2-	vld r (Average)	30	40%
3-	dfBu (Difficult)	15	20%
		; kx	75
			100%

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

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

- በLefu"B itu e@105% cgsodYih; itu rFkk 105% fjDr LFKku dh i fr@mfpr tkMh cukus dk itu fn; k tkosk vks ; g iR; d l V e@itu Øekd 1 gksk A
- iR; d l V e@1] 2 , oa3 vdks ds ituka e@fkkurk jgsh A l eLr 04 vd ; k bl l s vf/kd vdks ds y?kmÙkj h; rFkk nh?kmÙkj h; ituka e@fodYi fn; k tkuk gSA fodYi ds itu ml h bdkbz l s rFkk l eku mnas ; kdsjgksA 04 vd ; k bl l svf/kd vdks ds itu iR; d l V e@, d l eku jgksA
- vf/kdre mÙkj l hek vfry?kmÙkj h; 1/2 vd@30 'kCn½/3 vd@50 'kCn½ y?kmÙkj h; 1/4 vd@75 'kCn½/5 vd@150 'kCn½ nh?kmÙkj h; 1/6 vd ; k vf/kd@250 'kCn½

itu & i= dk Cyfi BV

Blue Print of Question Paper

fo"k; % Ñf'k foKku ds rRo ,oa xf.kr

i wkkd %75

I e; %3 ?ka/s

i j h{kk % gk; j I sds Mjh 112oh%

Set - A

gk; j I dsMjh Ldy I VHQdV ijlk

Higher Secondary School Certificate Examination

I fiiy&itu i=

SAMPLE PAPER

fo"k; % (Subject) - Nf"k foKku ds rRo ,oa xf.kr

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

d{kk % (Class) - ckjgo"ka 12oh

i wld 75 (M.M.)

(Instruction) & Kunzkh

- 1- I Hkh itu gy djuk vfuok; ZgSA

Attempt all the Question

- 2- itu Øekd 01 e 10 vd fu/kkjrh gSA nks dky [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-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- itu Øekd 02 I situ Øekd 06 rd vfr y?kpnRrjh; itu gSA iR; d itu ij 02 vd vkcIVr gSA mRrj dh vf/kdre 'kCn I hek 30 'kCn A

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

- 4- itu Øekd 07 I situ Øekd 10 rd y?kpnRrjh; 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 & carries 03 marks each. Word limit is maximum 50.

- 5- itu Øekd 11 I situ Øekd 14 rd y?kpnRrjh; 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 & 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 & 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 & carries 06 marks each.
Each question has internal choice. Word limit is maximum 150.

izu 1&[k.M 1/2% I gh fodYi pudj fyf[k; s &

Section (A): Choose correct alternative-

(i) fuEu e1s i frjk lk dh bdkbl gS &

1/2 vke

1/2 , fEi ; j

1/2 ty

1/2 okV

The unit of resistance is -

(a) Ohm

(b) Ampere

(c) Jule

(d) Volt

(ii) , h Vyh u dk IUPAC uke gS &

1/2 , Fkkbu

1/2 i ks kbu

1/2 , FksW

1/2 , Fku

The IUPAC name of Acetylene is-

(a) Ethyne

(b) Propyne

(c) Ethanol

(d) Ethene

(iii) fuEukfdr I [; k, i 11] 14] 23] 26] 10] 12] 8] 6 dk I kekUrj ek/; gS

1/2 13] 1/2 14 1/2 15 1/2 16

The arithmetic mean of following 11] 14] 23] 26] 10] 12] 8] 6 numbers is -

(a) 13 (b) 14 (c) 15 (d) 16

(iv) vjsdl gkbikst; k dk I cdk gS &

1/2 dy& ekyos h

1/2 dy& Oi hQjh

1/2 dy& y; feukd h

1/2 dy& I kysud h

Arachis hypogea is related to family-

(a) Malvaceae

(b) Cruciferae

(c) Legnuminoceae

(d) Solanaceae

(v) esMy usviusiz lkx fuEu e1sfdl ikks ij fd, Fks &

1/2 pu] 1/2 eVj] 1/2 ep 1/2 vjgj

Mendel perform his experiment on which following plant-

(a) Gram (b) Pea (c) Mung (d) Arhar

[k.M ½% fjDr LFkkuk dk iñrl dñft; s &

½x5)

Section (B): Fill in the blanks -

(i) tñl eavpkud vupk'kd ifjorlu vkus dks ----- dgrs gSA

The sudden heritable change in gene is called

(ii) , d gh xqk ds fofklu foijhr : iñl dks iñV djus okys dkj dk dks ----- dgrs gSA

The factors depicting various opposit forms of a single trait are called.....

(iii) ; fn F₁ l dj l rfr dksfdl h Hh tud l sl dfjr djk; k tk, rks, sl dj.k dks ----- dgrs gSA

If hybrid F₁ generation is crossed with any parent it is called

(iv) e/keD[kh ----- x.k dk dhV gSA

Honeybee belong to order

(v) jskc dhV dk oKkfud uke ----- gSA

..... is the scientific name of silk worm.

itu 2& tc iFoh] pnek vkg l wZdschp ,d l h/kh jskc eavk tkrh gSA rks dks l h ?Vuk gkrh gSA

½½

What happened when the Earth comes in between Moon and Sun in a straight line.

itu 3& eFku vkg , Fkhyhu dk l jruk l # cukb; sA

½½

Give the Structural formula of Methane and Ethylene.

itu 4& l ekj ek/; ds nks xqk fyf[k, A

½½

Write any two properties of Mean.

itu 5& ekyod h dy dk iñi l # fyf[k, A

½½

Write Floral Formula of family Malvaceae.

itu 6& x.k&vkFkkVjk ds pkj y{k.k fyf[k, A

½½

Write any four characteristics of order-Orthoptera.

itu 7& idk'k dk ijkorlu fdlsdgrsgs\ bl dsfu; e fyf[k, A

½\$2½

What do you mean by reflection of Light ? Write its law.

itzu 8& , fFky , Ydkgy ds mi ; kx fyf[k, A 1/2

1/2

Write uses of ethyle Alchohol. (any three)

itzu 9& ml oxZdh Hkqtk rFkk {ksQy Kkr dhft , ftI dk fod.kl 20 $\sqrt{2}$ I seh gSA 1/2

Find the side and area of the square whose diagonal is $20\sqrt{2}$ centimeter.

itzu 10& esMy ds iHkkfork ds fu; e dk , d mnkgj .k ds }kjk I e>kb; sA 1/2

Explain Mendel's Law of Dominance with an example.

itzu 11& o.kl Øe dk vkk'; Li "V djrs gq] okLrfod , oa vkkhkh h o.kØe ei vrj fyf[k, A 1/2 \$3/2

Clarify the word spectrum and differentiate between Real And Virtual spectrum.

^vFkok** (OR)

Mhty , oa iVky batu ei vrj fyf[k, A (1x4)

Write difference between Petrol and Diesel engine.

itzu 12& , d dkctud ; kfxd eadkclu 48-66% rFkk gkbMkstu 8-11% gsrks ; kfxd dk eykuqkrh I # Kkr dhft , & 1/2

An organic compound contain C = 48.66% and H = 8.11%, find the emperical formula of the compound.

^vFkok** (OR)

, d dkctud ; kfxd ds dkclu 65-73%, gkbMkstu 15-6% rFkk ukbVkstu 19-21% gsrks ; kfxd dk eykuqkrh I # Kkr dhft , A 1/2

An organic compound contain Carbon 65.73%, Hydrogen 15.06% and Nitrogen 19.21% then find the imperical formula of compound.

itzu 13& , d I oqk.k ea fuEufyf[kr vkkMsi klr gq & 1/2
vk; qo"kk es %10&20] 20&30] 30&40] 40&50] 50&60] 60&70

jksx; ka dh I [; % 3 2 5 11 3 1

vkkMks ds I ekUrj ek/; dh x.kuk dhft ; sA

Following data obtain by a survey -

Age in year: 10&20] 20&30] 30&40] 40&50] 50&60] 60&70

No. of Patient: 3 2 5 11 3 1

Calculate the mean of the data.

^VFlk** (OR)

fuEu	I kj .kh eadN Nk=kads i klrk dack	fooj .k fn; k x; k g\$ vdk dk cgyd		
Kkr dhft , &				$\frac{1}{4}\%$
vd%	0&10	10&20	20&30	30&40
vkofRr	5	12	20	9
				4

The marks are given in following table of some sstudents, calculate the mode-

Marks: 0&10	10&20	20&30	30&40	40&50
Frequency: 5	12	20	9	4

itu 14& idk'k I ay\$ k ij i kko Mkyus okys dkj dk dks I qks eafyf[k, A $\frac{1}{4}\%$

Write factors affecting Photo Synthesis, in brief.

^VFlk** (OR)

idk'k I ay\$ k dh vi dkf'kd vfkfØ; k dk I qks eao.ku dhft , A $\frac{1}{4}\%$

Describe in brif Dark reaction of Photo-Synthesis

itu 15& fuEufyf[kr dks ifjHkkf"kr dhft , & $\frac{1}{5}\%$ (1x5)
 $\frac{1}{4}\%$ fo | r {k= dh rhok] $\frac{1}{4}\%$ fo?kr okgd cy $\frac{1}{4}\%$ foHkokrj
 $\frac{1}{4}\%$ fdykoyV ?k. V k $\frac{1}{4}\%$ fo | r ifrjksk

Define Following -

- (a) Intensity of Electric field (b) Electro motive force
- (c) Potential difference (d) Kilowatt hour (e) Electric resistance

^VFlk** (OR)

fuEufyf[kr dks ifjHkkf"kr dhft , %

$\frac{1}{4}\%$ vke $\frac{1}{4}\%$ okyV $\frac{1}{4}\%$, Ei h; j $\frac{1}{4}\%$ dyk

$\frac{1}{4}\%$ fo | r jkl k; fud r y; kd

Define Following :-

- (a) Ohm (b) Volt (c) Ampere (d) Coulom
- (e) Electro-chemical equivalance

itu 16& 'khjs I s vYdkgy cukus dh fof/k dks foLrkj i o d l e>kb; sA

Explain formation of Alcohol from Malasses, in detail.

^vFok** (OR)

LVkpZ I s vYdkgy fuetZk dh fof/k dk o.ku fuEu 'kh"kdka eadhf, & 1½
 1½ 'kdihdj.k] 1½ fd.Mou] 1½ ifj'kkku

Describe the formation of Alcohol from starch in following points:-

- (a) Saccharification, (b) Fermentation (c) Rectification.

itzu 17& fuEufyf[kr I kj.kh I sekud fopyu Kkr dhft, & 1½

oxl vrjky%	0&10	10&20	20&30	30&40	40&50
ckj Eckj rk%	3	5	9	6	2

Find the standard deviation from the following table-

Class interval:	0&10	10&20	20&30	30&40	40&50
Frequency:	3	5	9	6	2

^vFok** (OR)

fuEufyf[kr I kj.kh I sek/; fopyu Kkr dhft, &

Find the mean deviation from the following table -

oxl (Class)%	5&15	15&25	25&35	35&45	45&55
vkofRr (Frequency)	5	15	12	16	2

itzu 18& I kysus h dy dk fuEu 'kh"kdka eao.ku dhft, & (1½x4)

1½ dy ds fo'k"V y{k.k 1½pkj½

1½ vkfFkld egRo ¼ i kskka ds okuLi frd uke½

1½ i tti I # 1½ i tti fp=

Describe the family Solanaceae in following points-

- (a) Distinguishing characteristics (Four)
 (b) Economic importance (Botanical name of any four plants)
 (c) Floral formula (d) Floral diagram.

^vFok** (OR)

ekyos h dy dk o.ku fuEu 'kh"kdka eadhf, &

1½ dy ds fo'k"V y{k.k 1½pkj½

1½ vkfFkld egRo ¼ i kskka ds okuLi frd uke½

1/4 1/2 i q i I #

$\frac{1}{4}n^{\frac{1}{2}}$ i|i fp=

Describe the family Malvaceae in following points-

- (a) Distinguishing characteristics (Four)
 - (b) Economic importance (Botanical name of any four plants)
 - (c) Floral formula
 - (d) Floral diagram.

itu 19& jške dñV dh foFklu voLfkvkd k fp= o.klu djrsqj jške dsplkj mi ; kx
fyf[k, & ¼\$2½

Describe the different stages of Silk Worm diagrammatically and give four uses of Silk.

^Vflok** (OR)

e/keD[kh ds thou pØ dh foftklu volFkkvka dk | fp= o.klu djrs gq pkj
iztkfr; ka ds oSkkfud uke fyf[k, A 1/4 \$2½

Describe the different stages of Honey bee diagrammatically and give scientific name of four species.

&&00&&

d{kk 12oha
fo"k; & Nf"k foKku ds rRo ,oa xf.kr
"I Eiy mRrj**

mRrj 1&½V½ oLrfu"V itu (1x5)

- (i) & V
 - (ii) & V
 - (iii) & I
 - (iv) & I
 - (v) & C

½c½ fjDr LFkku (1x5)

- (i) mRifjorL
 - (ii) ,fyy
 - (iii) irhi l d j . k
 - (iv) gk; euktVjk
 - (v) ckllcDl elgh

mRrj 2& plñxg.k i Mfk g§ ; g xg.k geskk i wkékl h dsfnu gksk g§ A ¼ \$1½

mRrj 3& eFku H H , I Fkhyhu



mRrj 4&½ | ekrj ek/; dh x.kuk | jy gSA ½ \$1½

½½ vko' dks Øec) djuk vko'; d ughagSA

½ | eLr eW; ka i j vklkkfjr gSA

mRrj 5& ekyos h dy dk i hi l w & 12½

$$Br, Brl, \oplus, \oint, \text{Epi k}_{3-7}, K_{(5)}, \square, A_{(\infty)}, G_{(5-\infty)}$$

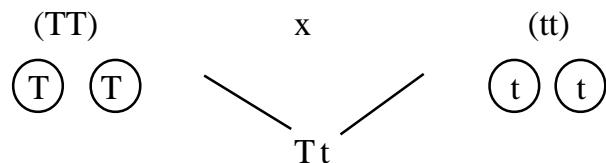
mRrj 6& v{kFkkzVsj k ds y{f.k.k & (1/2x4)

$\frac{1}{4}\frac{1}{2}$	vxi k pi Vs , oadMsA	
$\frac{1}{2}\frac{1}{2}$	i 'p i k eyk; e A	
$\frac{1}{3}\frac{1}{2}$	e kk dkVs , oapckusokysA	
$\frac{1}{4}\frac{1}{2}$	x nk ye v[.Mh; gks s g&A	
mRrj 7&	tc dk bz i dk 'k dh fdj.k , d I x ek ek/; e I spydj fdI h pednkj i "B ij vkifrr gks h g s rksogh pednkj i "B I sVdjkdj mI h ek/; e eyk/ tkrh g s rksbl s i dk 'k dk i jkoru dgrsg&A	
	ijkoru dh fu; e &	$\frac{1}{4}\frac{1}{2}$
$\frac{1}{4}\frac{1}{2}$	vkiru dksk v k i jkoru dksk I n b cjkj gks s g&A	
$\frac{1}{2}\frac{1}{2}$	vkifrr fdj.k i jkoru fdj.k v k vkiru fcUnqrFkk vfklyEc ge kk , d gh ry e a gks s g&A	
mRrj 8&	, fFky vYdkgy ds mi ; k x & $\frac{1}{4}dkbZ rhu\frac{1}{2}$	($\frac{1}{2}x3$)
$\frac{1}{4}\frac{1}{2}$	efnjk rFkk vU; i s cukus e a A	
$\frac{1}{2}\frac{1}{2}$	nokv k dsfuekZk e a A	
$\frac{1}{3}\frac{1}{2}$	foyk; d ds : i e a A	
$\frac{1}{4}\frac{1}{2}$	dkcfud ; k x dk & bFkj] DylkjQke] , I hfVd vEy] v k ; kMkQkeZvkfn dsfuekZk e a A	
$\frac{1}{5}\frac{1}{2}$	b ku ds : i e a A	
$\frac{1}{6}\frac{1}{2}$	dhV k. k uk' kd ds : i e a A	
mRrj 9&		

$$\begin{aligned}
 & oxZ dk \{ks=Qy \frac{3}{4} \frac{1}{4}kqt k\frac{1}{2} \\
 & oxZ dk fod.k \frac{3}{4} oxZ dh \frac{1}{4}kqt k \times \sqrt{2} \\
 & oxZ dh \frac{1}{4}kqt k \frac{3}{4} \frac{oxZ dk fod.k}{\sqrt{2}} \\
 & \frac{3}{4} \frac{20\sqrt{2}}{\sqrt{2}} \frac{3}{4} 20 \mid seh- \\
 & \{ks=Qy \frac{3}{4} \frac{1}{2}20^{\frac{1}{2}} \frac{3}{4} 400 oxZ \mid seh-
 \end{aligned}$$

($1\frac{1}{2}+1\frac{1}{2}$)

mRrj 10& esMy dk i ~~kk~~fork dk fu; e & fu; ekul kj tc , d t ~~Mk~~ foi jhr y{k.kak
vki l eaØkl djk; k tkrk gsrksF₁ ih~~te~~eadoy , dy {k.k idV gsrk gsrk s
i ~~kk~~oh y{k.k dgrs gSA v0; Dr y{k.k dks vi ~~kk~~oh y{k.k dgrs gSA
yEck i kskk ckskk i kskk



F₁ yEck i kskk 1/1 \$2½

mRrj 11& tc 'or idk'k fdj. kksdkfizTe eal sxqtkjk tkrk gsrksidk'k l kr jaksad/ tkrk gsj bl idkj ikr jaksadsI ej dks. kDe dgrs gSA 1/1 \$2½
okLrfod o.kDe vkkk h o.kDe

- | | |
|------------------------------------|-------------------------------------|
| 1- bl sinzij ikr fd; k tk l drk 1- | bl sinzij ikr ughaf; k tk l drk gSA |
| 2- bl easkuh fizTe dsvk/kj dh | 2- bl easkuh jk Åij dh vkj rFkk |
| vkj rFkk yky jk Åij dh vkj | yky jk vkkj dh vkj gsrk gSA |
| gsrk gSA | |
| 3- jaksadk Øe l hkk gsrk gSA | 3- jaksadk Øe mYVh gsrk gSA |

^vFok**

iVky batu

- | | |
|---------------------------------|------------------------------------|
| 1- bl dh n{krk Mhty batu l s | 1- bl dh n{krk iVky batu l svf/kd |
| de gsrh gSA | gsrh gSA |
| 2- bl batu eaiVky dh ok'i | 2- bl eamhty bku rFkk ok; qdk; bkh |
| rFkk ok; qdk; bkh i nkFkZ gsrk | i nkFkZ gsrk gSA |
| gSA | |
| 3- bl eafolQkV gksus dk Mj gsrk | 3- folQkV gksus dk Mj ughagsrk gSA |
| gSA | |
| 4- Likdzlyx gsrk gSA | 4- bl eavk; y iEi gsrk gSA |

mRrj 12& eykuqkrh l # Kkr djuk &

Mhty batu

- | | |
|------------------------------------|--|
| 1- bl dh n{krk iVky batu l svf/kd | |
| gsrh gSA | |
| 2- bl eamhty bku rFkk ok; qdk; bkh | |
| i nkFkZ gsrk gSA | |
| 3- folQkV gksus dk Mj ughagsrk gSA | |
| | |
| 4- bl eavk; y iEi gsrk gSA | |

gy& ; k₂CO₃ = 48.66%, H = 8.11%

$$\therefore O = 100 - (48.66 + 8.11)$$

$$O = 43.23\%$$

rRo	i fr'krrk	i jek.kq Hkkj	vki ff{kd l [; k	i jek.kvka dks l jyre vuj kr
C	46.66	12	46.66/12 = 4.055	4.055/2.7 = 1.5 x 2 = 3
H	8.11	1	8.11/1 = 8.11	8.11/2.7 = 3 x 2 = 6
O	43.23	16	43.23/16 = 2.70	2.7/2.7 = 1 x 2 = 2

vr%; k₂CO₃ dk eykuq krh l # 3/4 C₃H₆O₂ gSA

14½

^vFkok**

C = 65.73, H = 15.6, N = 19.21

rRo	i jek.kq Hkkj	i fr'kr ek=k	vki ff{kd l [; k	i jek.kvka dks l jyre vuj kr
C	12	65.73	65.73/12 = 5.47	5.47/1.37 = 4
H	1	15.06	15.06/1 = 15.06	15.06/1.37 = 11
N	14	19.21	19.21/14 = 1.37	1.37/1.37 = 1

vr%; k₂CO₃ dk eykuq krh l # 3/4 C₄H₁₁N gSA

14½

mRrj 13&

vk; qo"kk; ea	jksx; ka dh l [; k F	e/; eV; X	X.F.
10&20	3	15	45
20&30	2	25	50
30&40	5	35	175
40&50	11	45	495
50&60	3	55	165
60&70	1	65	65
	1		995

$$I ek;rj ek/; \frac{E \times F}{EF}$$

14\$2\$1½

$$\frac{3}{4} \quad \frac{995}{25}$$

I ek^{rj} ek/; $\frac{3}{4}$ 39.8 j^{kxh}

^vFok**

cgyd Kkr dft, &

\$2\$1½

vd	vkofuk
0&10	5
10&20	12
20&30	20
30&40	9
40&50	4

vf/kdre vkofuk 20 g^sbl fy, cgyd oxl^¾ 20&30

$$\text{cgyd } \frac{3}{4} L_1 + \frac{F - F_1}{2F - F_1 - F_2} (L_2 - L_1)$$

$$L_1 = 20, L_2 = 30, F = 20, F_1 = 20, F_2 = 9$$

$$\begin{aligned} Mo &= 20 + \frac{20-12}{2 \times 20-12-9} (30-20) \\ &= 20 + \frac{8}{40-21} (10) \\ &= 20 + \frac{80}{19} \\ &= 20 + 4.21 \end{aligned}$$

cgyd $\frac{3}{4}$ 24.21 vd

mRrj 14& **d^kj d&** (1x4)

1½ idk'k & idk'k dh vf/kd rhork e idk'k I ay^{sk}.k dh nj de gks tkrh g^s

ifrnu 10&12 ?k. Vs idk'k i ; klr gksk g^s DyksQy I cl s vf/kd uhys rFkk yky rjk n^s; k^s dks vo'kkskr djrk gSA

2½ CO₂ dh I knrk& I kel; rk CO₂ dh ek=k c^{<kbz} tkrh gSrk idk'k I ay^{sk}.k dh nj ck<+tkfr gSA

3½ rki Øe& vf/kdkkr% ikkska ea rki Øe] yxkkx 35°C rFkk vf/kdre 45°C ij

i ddk'k l aysk.k l pk: gksrk gSA
 1/1/ ty& ;g i ddk'k l aysk.k ij i jk'k i kko Mkyrk g§ ty dh deh gksus ij
 i kkskae i ddk'k l aysk.k dh xfr de gks tkrh gSA

~vFok**

v i ddk'k; vflkfØ; k &

(1x4)

; g vflkfØ; k vdkdkj eagsrh g§ LVek eagsrh g§ bl esco₂, ATP dh l gk; rk
 l sNADPH₂ ds }jk vi pf; r gkdj 'kdkj LVkpZvkfn curs g§A
 $6CO_2 + 18ATP + 12NADPH_2 \rightarrow C_6H_{12}O_6 + 18ADP + 18H_3Po_4 + 12ADP$

mRrj 15& **i fjhkk'kk, j &**

(1x5)

1/1/ fo | r {ks= dh rhork& fo | r {ks= dsfdl h fcunqij osks dh rhork ml fcunq
 ij j [ks x; s, dkd /ku vkosk ij yxusokyscy dscjkcj gksrh gSA
 1/1/ fo | r okgd cy& tc l sy [kys ifji Fk es gksrh g§ rks ml ds /kpk ds e/;
 vf/kdre folkokurj dks l sy dk fo | r okgd cy dgrsg§A
 1/1/ **folkokurj**& fo | r ifji Fk es fdugh nks fcunyka ds chp folko ds vrj dks
 folkokurj dgrsg§A
 1/1/ **fdykøV ?k.Vk&** , d fdykøV ?k.Vk] fo | r Åtkz dh og ek=k g§ tks , d
 fdykøV dh fo | r 'kfDr okys ifji Fk es , d ?k.Vs e@0; ; gksrh gSA
 1/1/ **ifrjk'kk&** ; g fdl h pkyd dk og xqk g§ tks fo | r /kkj k ds i okg es: dkoV
 mRi lu djrk gSA

~vFok**

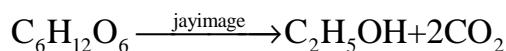
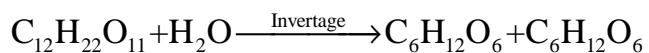
1/1/ **vke&** ; g ifrjk'kk dk ek=d g§ ; fn pkyd esfl Vka ij 1 okyV dk folkokurj
 yxkus ij ml es i okfgr gksusokyh /kkj k 1 , fEi ; j gks rks pkyd dk ifrjk'kk 1
 vke gksk A
 1/1/ **okyV&** ; fn fdl h fo | r ifji Fk es 1 dyke vkosk dks pykuse@1 t@y Åtkz
 0; ; gksrh g§ rks ml l sy dk fo | r okgd cy 1 okyV gksrh gSA
 1/1/ **, Ei h; j&** ; g fo | r /kkj k dh bdkbzg§A fdl h i fji Fk es 1 l s.M es i okfgr
 gksusokys vkosk dh ek=k 1 dyke gks rks fo | r /kkj k 1 , fEi ; j gksrh A
 1/1/ **dyke&** ; g vkosk dk ek=d g§ 1 dyke og vkosk g§ tks fuokr@ok; qes 1
 ehVj nj j [ks vi us gh l eku rFkk cjkj vkosk dks 9x10⁹ U; Wu ds cy l s
 ifrdrf"kr djrk gSA

10% fo | r j l k; fud r y; k d & fd l h i n k F k l d k o s | r j k l k; fud r y; k d m l d k
og n b; eku g s t k s m l i n k F k l d s f d l h fo | r v i ? k v t e a 1 d y k l v k o s k i d k f g r
d j u s i j e D r g k s k g s A

m R r j 16& 'k h j s I s v Y d k g y f u e l z k & 15%

11% r u p d j . k & 'k h j s e a t y f e y k d j 'k d j k d k r u p d j . k f d ; k t k r k g s f t I I s
I k n r k 8 & 10 i f r ' k r j g t k , A b l f o y ; u e a F k k M k r u q H _ 2 S O _ 4] v e k f u ; e
I Y Q V] ; h L V f e y k d j f o y ; u d k s 2 0 ^ { \circ } C - 3 0 ^ { \circ } C r k i i j V f d ; k a e a H k j n s s g s A

12% f d . o u & b l u o V k t , U t k b e I P k s t d k s X y d k s t , o a Y D V k s t e a c n y n s k g s , o a
t k b e s t X y d k s t] Y D V k s t d k s , f f k y v Y d k g y e a i j f o r k d j n s k g s &



f o y ; u e a 10 i f r ' k r I k n r k o k y k v Y d k g y i k l r g k s k g s f t I s o k ' k d g r s g s A

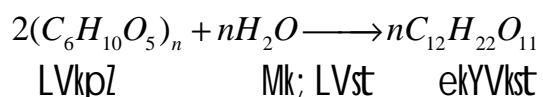
13% v k l o u & d k Q s H k k k d s } k j k v k l o u d j r s g s b l e a n k s H k k x f o ' y s k d , o a
i f j ' k k s k d g k s g s A b l f \emptyset ; k I s 90 i f r ' k r , f f k y , Y d k g y i k l r g k s k g s A

14% i f j ' k k s k u & i k k k t h v k l o u d s } k j k f d ; k t k r k g s A

^v F k o k **

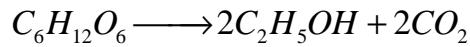
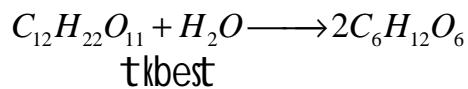
L V k p Z I s v Y d k g y f u e l z k & (1x5)

15% 'k d j h d j . k & L V k p Z d k e k Y V k s t e a i f j o r u] v o d f j r t k s d k s i h l f y ; k t k r k
g s N k u d j e k Y V f u " d " k l i k l r g k s k g s b l s e k Y V f u " d " k l d g r s g s b l e a M k ; L V s
f o d j g k s k g s A e s k i k l r d j u s d s f y , v k y j e D d k v k f n i n k F k l d k s d p y d j
v f r r l r H k k i e a m c k y r s g s A y b l t s k e s k e a e k Y V f u " d " k l f e y d k j 53 ^ { \circ } C r k i
i j j [k n s s g s M k ; L V s f o d l L F k p Z d k s e k Y V k s t e a i f j o r k d j n s s g s A i k l r
n o d k s o k l d g r s g s A



16% f d . o u & o k l / Z e a [k e h j f e y k d j 2 5 ^ { \circ } C - 3 7 ^ { \circ } C r k i i j j [k n s s g s e k Y V s t f o d j
e k Y V k s t d k s X y d k s t e a c n y n s k g s A r F k k t k b e s t X y d k s t d k s v Y d k g y e a
c n y n s k g s &

ekYVst



mRrj 17& ekud fopyu &

oxl vrjky	vkofÜk	e/; eW; x	F.x	d=x-m	d ²	Fd ²
0-10	3	5	15	-19.6	384.16	1152.48
10-20	5	15	75	-9.6	92.16	460.8
20-30	9	25	225	0.4	0.16	1.44
30-40	6	35	210	10.4	108.16	648.96
40-50	2	45	90	20.4	416.16	832.32
	25				1000.74	3096

$$\text{I ekj} \quad m = \frac{615}{25}$$

$$m = 24.6$$

$$\text{ekud fopyu} = \sqrt{\frac{\sum Fd^2}{\sum F}}$$

$$= \sqrt{\frac{3096}{25}}$$

$$= \sqrt{123.84}$$

$$vr\% \text{ekud fopyu } \frac{3}{4} \text{ 11-12}$$

~vFok**

ek/; fopyu &

1/2½

1/1½

1/1½

1/1½

1/5½

oxl	vkofÜk F	e/; eW; x	F.x	d=x-m	d ²	Fd ²
5-15	5	10	50	-19	361	1805
15-25	15	20	300	-9	81	1215
25-35	12	30	360	1	1	12
35-45	16	40	640	11	121	1936
45-55	2	50	100	21	441	882
	50		1950			5850

$$I \text{ ekUrj ek/}; m = \frac{145}{5}$$

1½

$$\therefore m = 29$$

$$ekud fopyu = \sqrt{\frac{\sum Fd^2}{\sum F}}$$

1½

$$= \sqrt{\frac{5850}{50}} \\ = \sqrt{117}$$

1½

mRrj 18& I kysu h dy &

12\$2\$1\$1½

1½ fof'k"V y{k.k&

1½ ikp iplj ny yxu

1½ vMi kadh frjNh fLFkr

1½ vud o cMs pedhyschtM Qlys gq chtkMkl u ij fLFkr

1½ chtk.MU; kl LrEHkh;

1½ vkfFkld egRo&

1½ vkyw½ kysu! V; cjk! e½

1½ cku ½ kysu! esyktuk½

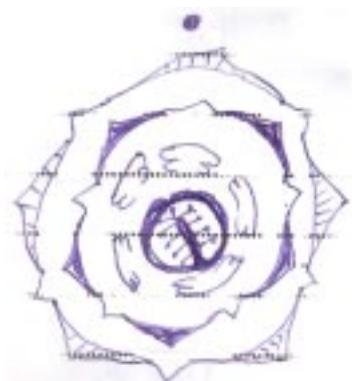
1½ fepz½dsll de , ue½

1½ rEck[kw½fudksV; kuk gde½

1½ i|i | # &

EBr, $\oplus \not\in K_{(5)} C_{(5)} A_5 G_{(2)}$

1½ i|i fp=



^vFkok**

	ekyo& h dy&	1/2\$2\$1\$1½
1/4½	of'k"V y{k.k &	
1/4½	i kks 'kkdh;] >kMh ; k o{k	
1/2½	i fÙk; ka l jy] vuqf=d] , dkrj	
1/3½	i p] j vI {;] , dI @kh;] i qUr] vki l eafeydj i p] jh uky cukrs gSA	
1/4½	tk; kx ip v.Mih I a Þr mÙkjorh vMk'k;] v{korh chtk.MU; kI A	
1/5½	vkfFkd egRo &	
1/4½	xMey 1fgfcLdj jkst k l kbLsU I ½	
1/2½	fHKUMh 1fgfcI dI , l D; y/I ½	
1/3½	dikl 1xkM fi ; e LihI ht½	
1/4½	gkWygkW 1wfYFk; k jkst ; k½	
1/5½	i ffi l # &	
	Br BrI ⊕ Epi K ₃₋₇ K ₍₅₎ C ₂ A _∞ G ₍₅₎	
1/6½	i ffi fp= &	

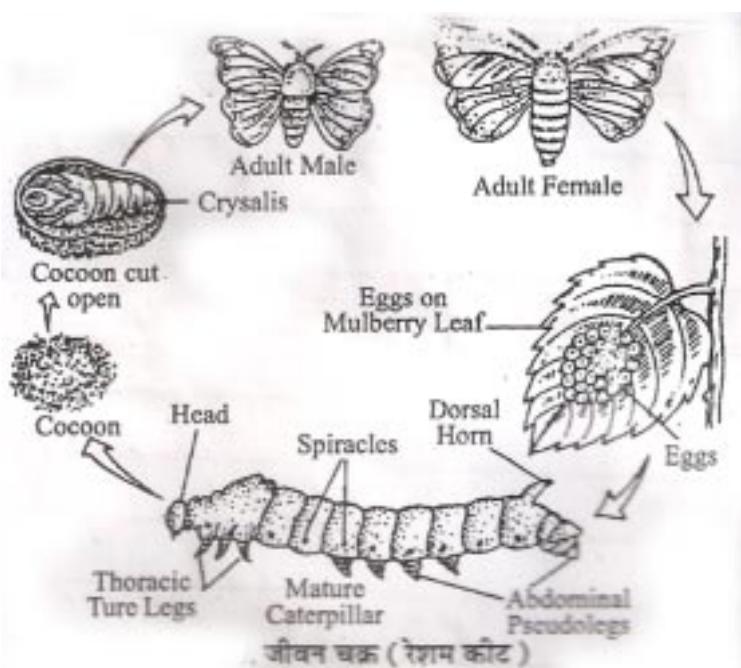


mRrj 19&	j\$ke dIv dh voLFkk, &	1/4\$2½
1/4½	v.Mk& eknk i fÙk; ka i j 300&400 v.Ms ns h gS v.Mk piVkj i rykj i hykj xksykdkj gksk g\$ xfez ka ea v.Ms 10&12 fnu rFkk 'khr ea 30 fnu ka ea v.Ms QWrs gSA Nkvh bYyh fudyrh gSA	
1/2½	bYyh& bYyh dh yEckbZ3 fe-eh o jx I Qn gksk g\$ o{k ea rhu tkMh rFkk mnj ea ikp tkMh Vka gksk g\$ bYyh 'kh?kz gh i fÙk; ka [kkuk i kjhk dj ns h gS	

- rFkk 4 । s 5 fnu ckn i Eke fuekpu dj rh gSpkEks fuekpu ds ckn ; g vkdkj c<ldj vi uh yEckbz 8 । seh rd dj yrh gSA thou dk 30&35 fnu A
 13½ dkdju& ifj i Do bYyh [kuk cn dj nsrh gSrFkk bl dsef k mi k jsk e cokus okysykj xfka kaefodfl r gks tkrs gSA ; gh ykj jsk e inku dj rh g ; sjsk e ds/kkxs bYyh ds 'kj hj ds pkj ks vkj fpiddj jsk e I r dk fuekz k dj dkdju dk fuekz k dj rsg gSA dkdju 38 fe-eh yEck rFkk 19 fe-eh pkM v. Mkdj I Qn i hysjx dk gksk gSA
- 14½ I; ik& yxHkx 15 fnu e bYyh dkdju eavnj ifjo/ku dj I; ik eacny tkrk gSA

mi ; kx &

- 11½ oL= cokus eA
- 12½ ijk'kW cokus eA
- 13½ dks k I sry fudkyk tkrk gft I dk mi ; kx vksfk/k; ka e gksk gSA
- 14½ i kphu dky eaphu eal kusdsI kfk oLrqfue; ds: i ejsk e dk mi ; kx gksk Fkk A



&&00&&

Set - B

gk; j I dsMjh Ldy I VHQdV ijlk

Higher Secondary School Certificate Examination

I fiiy&itu i=

SAMPLE PAPER

fo"k; % (Subject) - Nf"k foKku ds rRo ,oa xf.kr

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

d{kk % (Class) - ckjgo" 12oh

i wld 75 (M.M.)

(Instruction) & Kunzkh

- 1- I Hkh itu gy djuk vfuok; ZgSA

Attempt all the Question

- 2- itu Øekd 01 e 10 vd fu/kkjr gSA nks dky [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 vkcfVr gSA

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- itu Øekd 02 I situ Øekd 06 rd vfr y?kpnRrjh; itu gSA iR; d itu ij 02 vd vkcfVr gSA mRrj dh vf/kdre 'kCn I hek 30 'kCn A

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

- 4- itu Øekd 07 I situ Øekd 10 rd y?kpnRrjh; 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 & carries 03 marks each. Word limit is maximum 50.

- 5- itu Øekd 11 I situ Øekd 14 rd y?kpnRrjh; itu gSA iR; d itu e
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 & 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 & 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 & carries 06 marks each.
Each question has internal choice. Word limit is maximum 150.

d{kk 120ha

fo"k; & Nf"k foKku ds rRo ,oa xf.kr
^i si y iz u**

iz u 1& [k.M 1/2 l gh fodYi pudj fyf[k; s &

Section (A) Choose correct answer-

(1x5=5)

(i) fo | q /kkjk dk ek=d gS &

1/2 vke

1/2 ty

1/2 okV

1/2 ,fei ; j

The unit of Electric current is -

(a) Ohm

(b) Jule

(c) Volt

(d) Ampere

(ii) , fFky , Ydkgy dk IUPAC uke gS &

1/2 i kis kbu

1/2 , Fksuky

1/2 , Fkhu

1/2 , Fkkbu

The IUPAC name of Ethyl Alcohol is-

(a) Propyne

(b) Ethanol

(c) Ethene

(d) Ethyne

(iii) l [; k, i 1] 2] 9] 11] 6 dk l kekUrj ek/; gS &

1/2 4-8]

1/2 5-8

1/2 5-9

1/2 6-8

The arithmetic mean of numbers 1, 2, 9, 11, 6 is -

(a) 4.8

(b) 5.8

(c) 5.9

(d) 6.8

(iv) l kyue esyktuk dk l cik gS &

1/2 dy& Ojh hQjh l s

1/2 dy& yk; feukd h l s

1/2 dy& l kysid h l s

1/2 dy& ekyos h l s

Solanum Melongena is related to family-

(a) Crucifereae

(b) Legnuminoceae

(c) Solanaceae

(d) Malvaceae

(v) esMy dk i Fke fu; e gS &

1/2 i FkDdj.k dk fu; e

1/2 Lor& vi 0; yu dk fu; e

1/4 ½ i **kkfork dk fu; e**

1/4 ½ vi **kkfork dk fu; e**

The first Law of Mendel is-

(a) Law of segregation

(b) Law of Independent assortment

(c) Law of dominance

(d) Law of Indominance

[k.M ½ fjdR LFkkula dh ifrl dft;s &

1x5)

Section (B) Fill in the blanks -

(i) Vkvhi kṣ/ṣi h dk l cāk ----- ls gSA

Totepotency is related to

(ii) thoka ea xqkl wka ds l s/ka dh l q; k eifjorlu dks ----- dgrs gSA

The number of chromosomes set is changed which is called

(iii) i q i ka ea l s i p d j ; k i j k xdkkk dks gVuk dgykrk gSA

Removel of stamen from flower is known as

(iv) , . Vkekylit dh ds vr xk ----- dk v/; u fd; k tkrk gSA

..... are studies under entomology.

(v) yk[k dhV dk oKkfud uke ----- gSA

..... is the scientific name of Lac insect.

itu 2& tc l wZvk i Foh ds chp plnek , d l h/k eavk tkrk gSrk dks l h ?kvuk gkrh gSA
1/2½

What happened when the Moon comes in between Sun and Earth ia a stright line..

itu 3& , Fku vkg , l hfVyh u dk l jpu k l # fyf[k, A

1/2½

Write Structural formula of Ethane and Acetylene.

itu 4& ekf/; dk ds nks xqk fyf[k, A

1/2½

Write any two properties of Median.

itu 5& I kysul h dg dk i q i l # nhft;sA

1/2½

Write Floral Formula of family Solanaceae.

itzu 6&	x.k&fMIVjk ds pkj y{.k fyf[k, A	12½
Write four characters of order Diptera.		
itzu 7&	vko/klu {kerk dks ifjHkkf"kr dj] I jy I ften'klu dh vko/klu {kerk dk I fyf[k, A	1½ \$2½
Define magnifying power and give formula of magnifying power for simple microscope.		
itzu 8&	xkcj xj ds mi ; kx fyf[k, A	13½
Write uses of Gobar-Gas.		
itzu 9&	, d oxz dh Hkotk 32 I seh g§ oxz dk {ks=Qy ,oa fod.kz dh yEckbz Kkr dhft, A	13½
The side of a square is 32 centimeter, find the area and diagonal of square.		
itzu 10&	esMy ds iFddj.k ds fu; e dks I knkgj.k I e>kb; sA	13½
Explain Mendel's Law of segregation with example.		
itzu 11&	o.k Øe dk vk'k; Li "V djrs gq] okLrfod ,oa vkkkI h o.k Øe ei vrj fyf[k, A	1½ \$3½
Clarify the word spectrum and differentiate between Real And Virtual spectrum.		
“Vfok** (OR)		
	Mhty ,oa iVky batu ei vrj fyf[k, A	(1x4)
Write difference between Petrol and Diesel engine.		
itzu 12&	, d dkctud ; k§xd e§dkclu 48-66% rFkk gkbMkstu 8-11% g§rk; k§xd dk eykuqkrh I fyf[k, A	14½
An organic compound contain C = 48.66% and H = 8.11%, find the emperical formula of the compound.		
“Vfok** (OR)		
	, d dkctud ; k§xd ds dkclu 65-73%, gkbMkstu 15-6% rFkk ukbVkstu 19-21% g§rk; k§xd dk eykuqkrh I fyf[k, A	14½
An organic compound contain Carbon 65.73%, Hydrogen 15.06% and Nitrogen 19.21% the imperical formula of compound.		

itu 13& , d l o^k.k ea fuEufyf[kr v^kdMs i^klr g^q & 1/4½
 v^k; q^o"k^k ea %10&20] 20&30] 30&40] 40&50] 50&60] 60&70
 jksx; ka dh l a ; k% 3 2 5 11 3 1
 v^kdMs i^klr j ek/; dh x.kuk dhft; sA

Following data obtain by a survey -

Age in year:	10&20]	20&30]	30&40]	40&50]	50&60]	60&70]
No. of Patient:	3	2	5	11	3	1

Calculate the mean of the data.

^Vfok** (OR)

fuEu l kj .k h eadN Nk=kads i klr kdk fooj .k fn; k x; k g^q vdk dk cg^yd
 Kkr dhft, & 1/4½

vd%	0&10	10&20	20&30	30&40	40&50
vkofRr	5	12	20	9	4

The marks are given in following table of some students, calculate the mode-

Marks:	0&10	10&20	20&30	30&40	40&50
Frequency:	5	12	20	9	4

itu 14& idk'k l ay^k.k dh vi dk'kd vfHkfØ; k dk l a; eao.ku dhft, A 1/4½

Write factors affecting Photo Synthesis, in brief.
^Vfok (OR)**

idk'k l ay^k.k dh vi dk'kd vfHkfØ; k dk l a; eao.ku dhft, A 1/4½

Describe in brief Dark reaction of Photo-Synthesis

itu 15& fuEufyf[kr dks i f^kHkf"kr dhft, & 15½ (1x5)
 ¼½ fo | r {k= dh rhork] ¼½ fo?k^r okgd cy ¼½ foHkokrj
 ¼½ fdyl^kV ?k. V^k ¼½ fo | r i frjk^kk

Define Following -

- (a) Intensity of Electric field (b) Electro motive force
- (c) Potential difference (d) Kilowatt hour (e) Electric resistance

^Vfok** (OR)

fuEufyf[kr dks i fjkHkkf"kr dhft, &
 $\frac{1}{4}\%$ vke $\frac{1}{4}\%$ okV $\frac{1}{4}\%$, Ei h; j $\frac{1}{4}\%$ dyk
 $\frac{1}{4}\%$ fo | r jkl k; fud rV; kd

Difine following:-

- (a) Ohm
- (b) Volt
- (c) Ampere
- (d) Coulom
- (e) Electro-Chemical equivalance..

itzu 16& 'khjs I s vYdkgy cukus dh fof/k dks foLrkj iDl e>kb; sA

Explain formation of Alcohol from Malasses, in detail.

^vFkok (OR)**

Lvkpz I s vYdkgy fuelZk dh fof/k dk o.ku fuEu 'kh"kdka es dhft, & $\frac{1}{4}\%$
 $\frac{1}{4}\%$ 'kdjh dj.k] $\frac{1}{4}\%$ fd.Mou] $\frac{1}{4}\%$ i fjk'kkku

Describe the formation of Alcohol from starch in following points:-

- (a) Saccharification,
- (b) Fermentation
- (c) Rectification.

itzu 17& fuEufyf[kr I kj.kh I sekud fopyu Kkr dhft, &

oxl vrjky% 0&10	10&20	20&30	30&40	40&50
ckjEckjrk% 3	5	9	6	2

Find the standard deviation from the following-

Class interval: 0&10	10&20	20&30	30&40	40&50
Frequency: 3	5	9	6	2

^vFkok (OR)**

fuEufyf[kr I kj.kh I sek/; fopyu Kkr dhft, &

Find the mean deviation from the following data -

oxl (Class)% 5&15	15&25	25&35	35&45	45&55
vkofRr (Frequency): 5	15	12	16	2

itzu 18& I kysu h dy dk fuEu 'kh"kdka es o.ku dhft, & $(1\frac{1}{2} \times 4)$
 $\frac{1}{4}\%$ dy ds fo'k"V y{k.k $\frac{1}{4}\%$ pkj $\frac{1}{4}\%$
 $\frac{1}{4}\%$ vkkFkd egRo $\frac{1}{4}\%$ i kskka ds okuLi frd uke $\frac{1}{4}\%$
 $\frac{1}{4}\%$ i ji I # $\frac{1}{4}\%$ i ji fp=

Describe the family Solanaceae in following points-

- (a) Distinguishing characteristics (Four)
 - (b) Economic importance (Botanical name of any four plants)
 - (c) Floral formula
 - (d) Floral diagram.

^vFkok** (OR)

ekyos h dy dk o.ku fuEu 'kh'k'zka eadhf^t, &
1/4½ dy dsfo'k"V y{k.k 1/pkj½
1/c½ vlfFk'ld egRo 1/4 i k'g'k'ka ds okuLi frd uke½
1/4 ½ i t'i l # 1/h½ i t'i fp=

Describe the family Malvaceae in following points-

- (a) Distinguishing characteristics (Four)
 - (b) Economic importance (Botanical name of any four plants)
 - (c) Floral formula
 - (d) Floral diagram.

itu 19& jške dhV dh foFkklu voLfkvkd k fp= o.klu djrsqj jške dskpj mi ; kx
fyf[k, & 14\$2½

Describe the different stages of Silk Worm diagrammatically and give four uses of Silk.

^vFkok** (OR)

e/kəpD[kh] ds thou pØ dh foftklu volFkkvka dk | fp= o.klu djrs gq pkj
iztkfr; ka ds o\$Kkfud uke fyf[k, A 1/4 \$2½

Describe the different stages of life cycle Honey bee diagrammatically and give scientific name of four species.

8800&&

d{kk 12oh
 fo"k; & Nf"k foKku ds rRo ,oa xf.kr
 "m i y mRrj**

mRrj 1&½ oLru"V i t u

(1x5)

- (i) & n
- (ii) & c
- (iii) & c
- (iv) & l
- (v) & l

½C½ fjd r LFku

(1x5)

- (i) fV'kdYpj
- (ii) cgxqf.krk
- (iii) foi l u
- (iv) dhVks
- (v) yS hQj yDdk

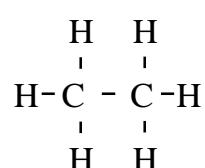
mRrj 2& I w kg.k i Mfk gSA vekoL; k dsfnu I w kg.k i Mfk gSA

½\$1½

I w z &&& plnek && i Foh

mRrj 3& , Fku C₂H₆ , I hfVyh u C₂H₂

½\$1½



H - C ≡ C - H

mRrj 4&½ ; g cMf inka ij i kkfor ughagkrh gSA

½\$1½

½ bI dk i fj dyu I jy gSA

mRrj 5& Ebr ⊕ ♀ K₍₅₎ E₅A₅ G₍₂₎

(2)

mRrj 6&½ ; g jkf=pj rFkk fnupj gSA (½x4)
 ½ e[kkas pikkus vks pikkus okys gSA
 ¾ mnj e4 l s9 rd gh [k.M A
 ¼ ek= , d tMh ½ i[k gks gSA f>Yhknj , oaijn'kd e/; o{k eaA
 mRrj 7& vko/klu {kerk & ifrfcc }jk fufet n'klu&dksk vks Li "V nf"V dh U; ure
 njh ij j[kh oLrq }jk fufet n'klu dk sk ds vuqkr dk sk l en'kh dh vko/klu
 {kerk dgrs gSA ¼ \$2½

vko/klu {kerk ¾ ifrfcc }jk fufet n'klu dk sk
 Li "V nf"V dh U; ure njh ij fLFkr oLrq }jk fufet n'klu dk sk

mRrj 8&½ ; g x[kku cokusdsfy, bZku ds: i eaA (1x3)
 ½ jksuh djusfctyh i Sk djusA
 ¾ Mhty batu pykusdsfy, A
 ¼ mRre [kn ds: i eaA
 mRrj 9& oxZ dh Hktk ¾ 32 l eh (1½+1½)
 vr%oxZ dk {ks Qy ¾ Hktk²
 ¾ 32² oxZ l eh ¾ 1024 oxZ l eh

rFkk oxZ ds fod.k dh yckbl ¾ oxZ dh Hktk $\times \sqrt{2}$

¾ 32 $\sqrt{2}$ l eh

mRrj 10& bl fu; e ds vuqkj tc , d tMh foijhr y{.kka dk /; ku ej [kdj ØkW
 djk;k tkrk gsrks l dj F₁ ihk eankukay{.k fo | eku gks gSA ; sy{.k F₂
 ihk e i Fkd gks tkrs gSA ; gh i Fkddj .k dk fu; e dgrykrk gSA ¼ \$2½

¼ k) yck½ TT x tt ¼ k) ck½
 ↓ → F₁ T t ¼' k) yck½
 Tt x Tt → Loijkx.k

		T	t
F ₂ → T		TT	Tt
		yck½	tt
	t	Tt	tt
		yck½	ck½

mRrj 11& tc 'or i^zdk'k fdj.k^zadksfi^zTe e^zl s^zx^ztkjk tkrk g^zrks i^zdk'k l kr j^zak^za^z / tkrk g^z bl i^zdkj i^zkr j^zak^zds l e^zg dks o.k^zde dgrs g^zA 1/2½
okLrfod o.k^ze **v^zkk^z h o.k^ze**

- | | | | |
|----|--|----|--|
| 1- | bl sin ^z ij i ^z lr fd;k tk l drk | 1- | bl sin ^z ij i ^z lr ughfd;k tk l drk |
| 2- | bl e ^z ckuh fi ^z Te ds v ^z k/kj dh v ^z kj rFkk yky j ^z Åij dh v ^z kj | 2- | yky j ^z v ^z k/kj dh v ^z kj g ^z rk g ^z A |
| 3- | j ^z ak ^z dk Øe l h/kk g ^z rk g ^z A | 3- | j ^z ak ^z dk Øe mYV ^z g ^z rk g ^z A |
- ^vFok****

i^zky batu

- | | | | |
|----|--|----|---|
| 1- | bl dh n{krk M ^z ty batu l s de g ^z rk g ^z A | 1- | bl dh n{krk i ^z ky batu l svf/kd g ^z rk g ^z A |
| 2- | bl batu e ^z i ^z ky dh ok'i rFkk ok; qdk; b ^z kjh i nkFkZ g ^z rk g ^z A | 2- | bl e ^z M ^z ty b ^z ku rFkk ok; qdk; b ^z kjh i nkFkZ g ^z rk g ^z A |
| 3- | bl e ^z foLQ ^z V g ^z us dk M ^z j g ^z rk g ^z A | 3- | foLQ ^z V g ^z us dk M ^z ugha g ^z rk g ^z A |
| 4- | LikdZ lyx g ^z rk g ^z A | 4- | bl e ^z vk; y i ^z Ei g ^z rk g ^z A |

mRrj 12& e^zkyu^zkrh l # Kkr djuk & gy& ; k^zxd e^zC = 48.66%, H = 8.11% 1/4½

$$\therefore O = 100 - (48.66 + 8.11)$$

$$O = 43.23\%$$

rRo	ifr'krrk	ijek.k ^z kkj	vki f{kld l d;k	ijek.k ^z ka dks l jyre vu ^z kr
C	46.66	12	46.66/12 = 4.055	4.055/2.7 = 1.5 x 2 = 3
H	8.11	1	8.11/1 = 8.11	8.11/2.7 = 3 x 2 = 6
O	43.23	16	43.23/16 = 2.70	2.7/2.7 = 1 x 2 = 2

vr%; kſxd dk eukuijkrh | $\frac{3}{4}$ C₃H₆O₂ gSA
^vFkok**

C = 65.73, H = 15.6, N = 19.21

rRo	i jek.kq Hkkj	i fr'kr ek=k	vki ſ{kd d; k	i jek.kvka dks jyre vuq kr
C	12	65.73	65.73/12 = 5.47	5.47/1.37 = 4
H	1	15.06	15.06/1 = 15.06	15.06/1.37 = 11
N	14	19.21	19.21/14 = 1.37	1.37/1.37 = 1

vr%; kſxd dk eukuijkrh | $\frac{3}{4}$ C₄H₁₁N gSA

mRrj 13&

12\$1\$1½

vk; qo"kk es	j kſx; k d h d; k F	e/; eW; X	X.F.
10&20	3	15	45
20&30	2	25	50
30&40	5	35	175
40&50	11	45	495
50&60	3	55	165
60&70	1	65	65
	1		995

$$I ek̄rj ek/; \frac{E \times F}{EF}$$

$$\frac{995}{25}$$

$$I ek̄rj ek/; \frac{3}{4} 39.8$$

^vFkok**

cgyd Kkr dlf t, &

12\$1\$1½

vd	vkofūk
0&10	5
10&20	12
20&30	20
30&40	9
40&50	4

vf/kdre vkofūk 20 g\$bl fy, cgyd oxl^{3/4} 20&30

$$cgyd \frac{3}{4} L_1 + \frac{F - F_1}{2F - F_1 - F_2} (L_2 - L_1)$$

$$L_1 = 20, L_2 = 30, F = 20, F_1 = 20, F_2 = 9$$

$$\begin{aligned} Mo &= 20 + \frac{20 - 12}{2 \times 20 - 12 - 9} (30 - 20) \\ &= 20 + \frac{8}{40 - 21} (10) \\ &= 20 + \frac{80}{19} \\ &= 20 + 4.21 \end{aligned}$$

cgyd ^{3/4} 24-21

- mRrj 14& **dijd&** (1x4)
- 1/1 i ddk'k & idk'k dh vf/kd rhork e idk'k I ayšk.k dh nj de gks tkrh g\$ ifrfnu 10&12 ?k. Vs idk'k i ; klr gksk g\$ DyksQy I cl svf/kd uhys rFkk yky rjx n\$; k dks vo'ks"kr djrk g\$A
- 1/2 CO₂ dh I knrk& I kel; rk CO₂ dh ek=k c<kbZ tkrh g\$rk i ddk'k I ayšk.k dh nj ck<+tkfr g\$A
- 1/3 rki Øe& vf/kdkkr% i k\$ka e rki Øe] yxHx 35°C rFkk vf/kdre 45°C ij idk'k I ayšk.k I pk: gksk g\$A
- 1/4 ty& ;g idk'k I ayšk.k ij ijk'k i kko Mkyrk g\$ ty dh deh gks i j i k\$ka e idk'k I ayšk.k dh xfr de gks tkrh g\$A

“vFkok**

v_idkf'k; vflkfØ; k &

; g vflkfØ; k vdkdj eagsh g§ LVke ek eagsh g§ bl e₂CO₂, ATP dh l gk; rk l s NADPH₂ ds }kj k vi pf; r gkdj 'kdjk LVkpz vlfn curs gSA
 $6CO_2 + 18ATP + 12NADPH_2 \rightarrow C_6H_{12}O_6 + 18ADP + 18H_3Po_4 + 12ADP$

mRrj 15& i fjHkk"kk, j &

(1x5)

- 1/1 fo | r {ks= dh rhork& fo | r {ks= dsfdl h fclnq ij osks dh rhork ml fclnq ij j [ks x; s, dkl /ku vkošk ij yxusokyscy dscjkcj gks h gSA
- 1/2 fo | r okgd cy& tc l sy [kys ifj i Fk ea gks h g§ rks ml ds /kpk ds e/; vf/kdre folkokurj dks l sy dk fo | r okgd cy dgrs gSA
- 1/3 folkokurj& fo | r ifj i Fk ea fdllgh nks fclnqka ds chp folko ds vrj dks folkokurj dgrs gSA
- 1/4 fdykøV ?k. Vl& , d fdykøV ?k. Vl] fo | r Åtk dh og ek=k g§ tks , d fdykøV dh fo | r 'kfDr okys ifj i Fk ea , d ?k. Vs e₂0; ; gks h gSA
- 1/5 ifrjk& ; g fdl h pkyd dk og xqk g§ tks fo | r /kkj k ds i dkg ea: dkoV mRlUu djrk gSA

^vFkok**

- 1/1 vke& ; g ifrjk dk ek=d g§ ; fn pkyd ea fl Vka ij 1 okyV dk folkokurj yxusij ml ea i dkfgr gks okyh /kkj k 1 , fEi ; j gks rks pkyd dk ifrjk dk 1 vke gks k A
- 1/2 okyV& ; fn fdl h fo | r ifj i Fk ea 1 dyke vkošk dks pykusea 1 tny Åtk 0; ; gks h g§ rks ml l sy dk fo | r okgd cy 1 okyV gks k gSA
- 1/3 , Ei h; j& ; g fo | r /kkj k dh bdkbz gSA fdl h i fji Fk ea 1 l s. M ea i dkfgr gks okys vkošk dh ek=k 1 dyke gks rks fo | r /kkj k 1 , fEi ; j gks h A
- 1/4 dyke& ; g vkošk dk ek=d g§ 1 dyke og vkošk g§ tks fuok@ok; qea 1 ehVj nj j [ks vi us gh l eku rFkk cjkj vkošk dks 9x10⁹ l; Wu ds cy l s ifrdfk dk djrk gSA
- 1/5 fo | r jlk; fud r; kd& fdl h inkfz dk os | r jlk; fud r; kd ml dk og nñ; eku g§ tks ml inkfz dsfdl h fo | r vi ?kv t ea 1 dyke vkošk i dkfgr djus ij epr gks k gSA

- mRrj 16& 'khjs I s vYdkgy fuelZk & 15½
- 11½ rupj.k& 'khjs ea ty feykdj 'kdjk dk rupj.k fd; k tkrk g§ ft I I s I knrk 8&10 ifr'kr jg tk, A bl foy; u e§FkksMk ruqH₂SO₄] veksu; e I YQV] ; hLV feykdj foy; u dks 20°c-30°c rki ij Vfd; ka ea Hkj nsrg§A
- 12½ fd.ou& bllovit , Utkbe I Økst dks Xydkst , oa YDVkst eacny nsrk g§, oa tkbest Xydkst] YDVkst dks , ffky vYdkgy ea i jfofrk dj nsrk g§ &
- $C_{12}H_{22}O_{11} + H_2O \xrightarrow{\text{Invertage}} C_6H_{12}O_6 + C_6H_{12}O_6$
- $C_6H_{12}O_6 \xrightarrow{\text{jayimage}} C_2H_5OH + 2CO_2$
- foy; u e§10 ifr'kr I knrk okyk vYdkgy iklr g§rk g§ ft I sok'k dgrsg§A
- 13½ vkl ou& dkQs Hkkcds }jkj vkl ou djrs g§ bl ea nks Hkkx fo'y§kd , oa ifj'kk§kd g§rk g§A bl fØ; k I s 90 ifr'kr , ffky , Ydkgy iklr g§rk g§A
- 14½ ifj'kk§ku& ikkth vkl ou ds }jkj fd; k tkrk g§A

~vFkok**

- LVkpZ I s vYdkgy fuelZk& 15½
- 15½ 'kdjhadj.k& LVkpZ dk ekYVkst ea i jforu] vdfjr tks dks i kl fy; k tkrk g§ Nkudj ekYV fu"dz iklr g§rk g§bl sekYV fu"dz dgrsg§bl eaMk; LVd fodj g§rk g§A esk iklr djusdsfy, vkyj eDdk vlfn inkFkZ dks dpydj vfrrlrlr Hkki eamckyrsg§A ybz t§ k esk ea ekYV fu"dz feydkj 53°c rki ij j [k nsrg§Mk; LVd fodI LFkpZ dks ekYVkst ea i jfofrk dj nsrg§A iklr no dks okvZ dgrsg§A
- $2(C_6H_{10}O_5)_n + nH_2O \longrightarrow nC_{12}H_{22}O_{11}$
- LVkpZ Mk; LVst ekYVkst
- 16½ fd.ou& okvZ ea [kehj feykdj 25°c-37°c rki ij j [k nsrg§ekYVst fodj ekYVkst dks Xydkst eacny nsrk g§A rFkk tkbest Xydkst dks vYdkgy ea cny nsrk g§ &
- ekYVst
- $C_{12}H_{22}O_{11} + H_2O \longrightarrow 2C_6H_{12}O_6$
- tkbest
- $C_6H_{12}O_6 \longrightarrow 2C_2H_5OH + 2CO_2$

mRrj 17& ekud fopyu &

1/2\$1\$1\$1½

oxl vrjky	vkofük	e/; eW; x	F.x	d=x-m	d ²	Fd ²
0-10	3	5	15	-19.6	384.16	1152.48
10-20	5	15	75	-9.6	92.16	460.8
20-30	9	25	225	0.4	0.16	1.44
30-40	6	35	210	10.4	108.16	648.96
40-50	2	45	90	20.4	416.16	832.32
	25				1000.74	3096

$$I \text{ekrj ek/;} \quad m = \frac{615}{25}$$

$$m = 24.6$$

$$\text{ekud fopyu} = \sqrt{\frac{\sum F d^2}{\sum F}}$$

$$= \sqrt{\frac{3096}{25}} \\ = \sqrt{123.84}$$

vr%ekud fopyu ¾ 11-12

~vFkok**

ek/; fopyu &

1/2\$1\$1\$1½

oxl	vkofük F	e/; eW; x	F.x	d=x-m	d ²	Fd ²
5-15	5	10	50	-19	361	1805
15-25	15	20	300	-9	81	1215
25-35	12	30	360	1	1	12
35-45	16	40	640	11	121	1936
45-55	2	50	100	21	441	882
	50		1950			5850

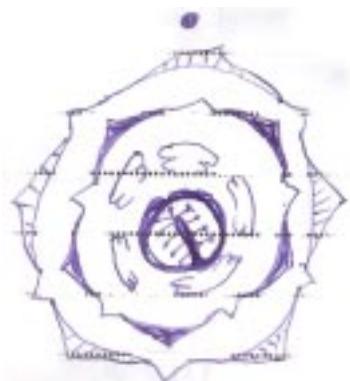
$$I \text{ekrj ek/;} \quad m = \frac{145}{5}$$

$$\therefore m = 29$$

$$\text{ekud fopyu} = \sqrt{\frac{\sum Fd^2}{\sum F}}$$

$$= \sqrt{\frac{5850}{50}} \\ = \sqrt{117}$$

mRrj 18&	I kysu h dy &	12\$2\$1\$1½
1½	fof' k"V y{k.k&	
1½	i kp i pl j ny ylu	
1½	vMi ka dh frj Nh fLFkfr	
1½	vud o cMspedhyschtM Qlys q chtkMkl u ij fLFkr	
1½	chtk.MU; kl LrEHkh;	
1½	vkfFkld egRo&	
1½	vkywI ksyue V; cjk e½	
1½	c&u ¼ ksyue esyktuk½	
1½	fepz½dsll de , ue½	
1½	rEck[kw½fudksV; kuk V&de½	
1½	i ¶i I # &	
	EBr, $\oplus \not\in K_{(5)} C_{(5)} A_5 G_{(2)}$	
1n½	i ¶i fp=	



~vFok**

ekyos h dy&	12\$2\$1\$1½
------------------------	--------------



mRrj 19&	jske dh volFkk, &	1/4 \$2 1/2
1 1/2	v. Mk& eknk i fük; ka i j 300&400 v. Ms nrh gS v. Mk pi Vkj i rykj i hykj xksykdjk gksrk gS xfez ka ea v. Ms 10&12 fnu rFkk 'khr ea 30 fnuka ea v. Ms QWrs gSA Nkjh bYyh fudyrh gSA	
1 1/2	bYyh& bYyh dh yEckbj3 fe-eh o jx l Qn gksrk gS o{k ea rhu tkmh rFkk mnj ea ikp tkmh Vks gksrk gS bYyh 'kh?kz gh i fük; ka [kkuk i kjkk dj nrh gS rFkk 4 l s5 fnu ckn i Eke fuekpu djrh gSpkks fuekpu dsckn ; g vkdjk c<ldj vi uh yEckbj8 l seh rd dj yrs gSA thou dk 30&35 fnu A	

13½ dksdū& i fj i Do bYh [kkuk cn dj nsh gsrFkk bl dseFk mi kx jske cukus okysykJ xFkā kaefodfl r gks tkrsgA ; gh ykj jske inku djrh g; sjjske ds/kkxs bYh ds'kjhj dskjks vkj fpi ddj jske I r dk fuelz k dj dksdū dk fuelz k djrsgA dksdū 38 fe-eh yEck rFkk 19 fe-eh pMlt v. Mkdj I Qn ihysjx dk gksk gSA

14½ I; ik& yxHkx 15 fnu eabYh dksdū eavnj ifjo/ku dj I; ik eacny tkrk gSA

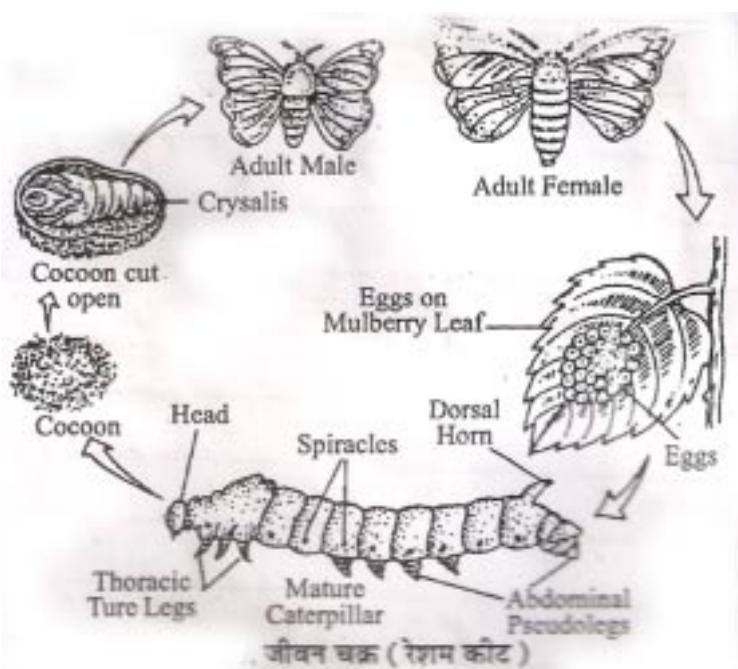
mi ; kx &

11½ oL= cukuseA

12½ ijk'kW cukuseA

13½ dks k l sry fudkyk tkrk gftl dk mi ; kx vksf/k; kaegksk gSA

14½ i kphu dky eaphu eal kusds l kfk oLrqfue; ds: i ejske dk mi ; kx gksk Fkk A



&&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) - Nf"k foKku ds rRo ,oa xf.kr

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

d{kk % (Class) - ckjgo"ka 12oh

i wld 75 (M.M.)

(Instruction) & Kunzkh

- 1- I Hkh itu gy djuk vfuok; ZgSA

Attempt all the Question

- 2- itu Øekd 01 e 10 vd fu/kkjr gSA nks dky [k.M gSA [k.M ^v** e 05
cgfodYih; itu rFkk [k.M ^c** e 05 fjDr LFkkuka 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-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- itu Øekd 02 I situ Øekd 06 rd vfr y?kpnRrjh; itu gSA iR; d itu ij 02 vd vkcfVr gSA mRrj dh vf/kdre 'kCn I hek 30 'kCn A

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

- 4- itu Øekd 07 I situ Øekd 10 rd y?kpnRrjh; 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 & carries 03 marks each. Word limit is maximum 50.

- 5- itu Øekd 11 I situ Øekd 14 rd y?kpnRrjh; itu gSA iR; d itu e
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 & 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 & 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 & carries 06 marks each.
Each question has internal choice. Word limit is maximum 150.

d{kk 12oh

fo"k; & Nf"k foKku ds rRo ,oa xf.kr
^i si y izu**

izu 1& [k.M 1/2 l gh fodYi pudj fyf[k; s &

Section (A) Choose correct alternative-

(1x5)

(i) fo | q 'kfDr dh bdkbz gS &

1/2 tly

1/2 okV

1/2 vke

1/2 , fEi ; j

The unit of Electric Power is -

(a) Ohm

(b) Ampere

(c) Jule

(d) Volt

(ii) , fFkyhu dk IUPAC uke gS &

1/2 , FksuW

1/2 , Fku

1/2 , Fkkbu

1/2 i kis kbu

The IUPAC name of Acetylene is-

(a) Ethenol

(b) Ethene

(c) Ethyne

(d) Propyne

(iii) l [; k, i 2] 3] 4] 5] 4] 5] 4] 7 dk cgvd gk&

1/2 3]

1/2 4

1/2 5

1/2 7

The mode of numbers 2, 3, 4, 5, 4, 5, 4, 7 will be -

(a) 3

(b) 4

(c) 5

(d) 7

(iv) jQul / Vkbol dk l cik gS &

1/2 yk; feukd h

1/2 l kysud h

1/2 ekyos h

1/2 OI hQjh

Raphanus sativus is related to family-

(a) Legnuminoceae

(b) Solanaceae

(c) Malvaceae

(d) Cruciferae

(v) tho/kkjh ds tks y{k.k i R; {k fn [kkbz i Mfs gfs os dgykrs gfs &

$\frac{1}{4} \frac{1}{2}$ fQuk\kbi $\frac{1}{4} \frac{1}{2}$ v\kV\kbi

The visual symptom of living being is called-

[k.M ½c½ f]Dr LFkuka dh i frz dlf t;s &

41 x 5)

Section (B) Fill in the blanks -

- (i) i^dk'k l^dy^sk.k d^h fØ;k e^a ----- x^s e^pr g^kr h g^s & Gas is released in the process of Photosynthesis

(ii) x^yk; d^fyf l l^ds v^r e^a ----- d^sn^ks v.^kq c^ur s g^fA Two molecules of are formed in the end of Glycolysis.

(iii) , F^kkby vYd^kg y ----- 'o^l u e^ac^ur k g^s A Ethyle Alchohol is formed in respiration.

(iv) j^ske mRⁱknu d^sv/; ; u d^ks ----- d^gr s g^fA The study of silk production is called

(v) l o^k/k^d i^jkx.k ----- d^hV d^s }kjk g^kr k g^s A Most of pollination is performed by Insect.

itu 2& tc 'or i^zk'k dh fdj.kka dksfi^ze e^zl s x^zt kjk tkrk g^zrks dk^zu l h ?kVuk
qks^zh qSA Li "V dhft, A 12½

What happened when the light is passed through prism. Clarify.

itu 3& vfFky vYdkay , oacsthu dk l ipuk l # fyf[k, A ¼\$1½

Write structural formula of Ethyl Alcohol and Benzene.

i t u 4& c q y d d s n k s x q k f y f f k, A ¼ \$1½

Write any two properties of Mode.

ju 5& Øu hɔsh dʒv dk i ði l tʃ fvf tʃk. A 12½

Write Floral Formula of Cruciferae

it u 6&	x.k&dkf yv kVjk ds pkj y{k.k fyf[k, A	1/2½
Write any four charaters of order-Coleoptera.		
it u 7&	ifjHkk"kk fyf[k, &	1/4x3½
$\frac{1}{4}\frac{1}{2}$ yd dh QkdI njh $\frac{1}{4}\frac{1}{2}$ e[; QkdI]		
$\frac{1}{4}\frac{1}{2}$ idk'k dñz		
Define Following -		
(a)	Focal length of lens	(b) Main focus of lens,
(c)	Optical center of lens	
it u 8&	, Fkyhu ds mi ; kx fyf[k, A	1/4x3½
Write uses of ethelene.		
it u 9&	, d oxzdk {k=Qy 225 oxzI seh gSrks oxzdk ifjek i Kkr dhft , A	1/3½
The area of a square is 225 square centimeter find its peripheri.		
it u 10&	VtV Økl , oacd Økl dks mnkgj .k }jk Li "V dhft , A	1/4½+1½½
Clarify Test cross and Back cross by suitable examples.		
it u 11&	o.k Øe dk v{k'k; Li "V djrs gq] okLrfod , oa vkkhkk h o.k Øe e vrj fyf[k, A	1/4 \$3½
Clarify the word spectrum and differentiate between Real And Virtual spectrum.		
~vFok** (OR)		
Mhty , oa i Vky batu e vrj fyf[k, A		
Write difference between Petrol and Diesel engine.		
it u 12&	, d dkctud ; kfxd e dkclu 48-66% rFkk gkbMstu 8-11% gSrks ; kfxd dk eykuqkrh I # Kkr dhft , &	1/4½
An organic compound contain C = 48.66% and H = 8.11%, find the emperical formula of the compound.		
~vFok** (OR)		
, d dkctud ; kfxd ds dkclu 65-73%, gkbMstu 15-6% rFkk ukbVstu 19.21% gSrks ; kfxd dk eykuqkrh I # Kkr dhft , A		
An organic compound contain Carbon 65.73%, Hydrogen 15.06% and Nitrogen 19.21% the imatical formula of compound.		

itzu 13& , d l o~~k~~.k ea fuEufyf[kr v~~k~~dMs i~~k~~r g~~q~~ & 1½
 v~~k~~; q o"kk~~e~~ %10&20] 20&30] 30&40] 40&50] 50&60] 60&70
 jksx; ka dh l a ; k% 3 2 5 11 3 1
 v~~k~~dMs ds l ekUrj ek/; dh x.kuk dhft; sA

Following data obtain by a survey -

Age in year:	10&20]	20&30]	30&40]	40&50]	50&60]	60&70]
No. of Patient:	3	2	5	11	3	1

Calculate mean of the data.

^Vfok** (OR)

fuEu l kj .k h eadN Nk=kads i klrkdk fooj .k fn; k x; k g~~s~~ vdk~~dk~~ cgyd
 Kkr dhft, & 1½

v d % 0&10	10&20	20&30	30&40	40&50
vko r r 5	12	20	9	4

The marks are given in following table of some students, calculate the mode-

Marks: 0&10	10&20	20&30	30&40	40&50
Frequency: 5	12	20	9	4

itzu 14& idk'k l a y~~k~~.k ij i~~k~~ko Mkyus okys dkj dka dks l a~~k~~i ea~~f~~yf[k, A 1½

Write factors affecting Photo Synthesis, in brief.

^Vfok** (OR)

idk'k l a y~~k~~.k dh vi~~dk~~'kd vfHkfØ; k dk l a~~k~~i ea~~o~~.k~~u~~ dhft, A 1½

Describe in brif Dark reaction of Photo-Synthesis

itzu 15& fuEufyf[kr dks i f~~H~~kf"kr dhft, & 1½ (1x5)
 ¼½ fo | r {k= dh rhork] ¼½ fo?k~~r~~ okgd cy ¼½ fo~~H~~kokrj
 ¼½ fdyl~~k~~V ?k. V~~k~~ ¼½ fo | r i frjk~~k~~

Define Following -

- (a) Intensity of Electric field (b) Electro motive force
- (c) Potential difference (d) Kilowatt hour (e) Electric resistance

^Vfok** (OR)

fuEufyf[kr dks i fjkHkkf"kr dhft, &
 $\frac{1}{4}\%$ vke $\frac{1}{4}\%$ okV $\frac{1}{4}\%$, Eih; j $\frac{1}{4}\%$ dyk
 $\frac{1}{4}\%$ fo | r jkl k; fud rV; kd

Difene following:-

- (a) Ohm (b) Volt (c) Ampere (d) Coulom
(e) Electro-Chemical equivalance.

itzu 16& 'khjs l s vYdkgy cukus dh fof/k dks foLrkj iDl e>kb; sA

Explain formation of Alcohol from Malasses, in detail.

^vFkok (OR)**

Lvkpz l s vYdkgy fuelzk dh fof/k dk o.ku fuEu 'kh"kdkae dhft, & $\frac{1}{4}\%$
 $\frac{1}{4}\%$ 'kdjh dj.k] $\frac{1}{4}\%$ fd.Mou] $\frac{1}{4}\%$ i fjk'kkku

Describe the formation of Alcohol from starch in following points:-

- (a) Saccharification, (b) Fermentation (c) Rectification.

itzu 17& fuEufyf[kr I kj.kh l sekud fopyu Kkr dhft, &

oxl vrjky% 0&10	10&20	20&30	30&40	40&50
ckjEckjrk% 3	5	9	6	2

Find the standard deviation from the following-

Class interval: 0&10	10&20	20&30	30&40	40&50
Frequency: 3	5	9	6	2

^vFkok (OR)**

fuEufyf[kr I kj.kh l sek/; fopyu Kkr dhft, &

Find the mean deviation from the following data -

oxl (Class)% 5&15	15&25	25&35	35&45	45&55
vkofRr (Frequency): 5	15	12	16	2

itzu 18& I kysu h dy dk fuEu 'kh"kdkae o.ku dhft, & (1x4)
 $\frac{1}{4}\%$ dy ds fo'k"V y{k.k $\frac{1}{4}\%$ pkj $\frac{1}{4}\%$
 $\frac{1}{4}\%$ vkkFkld egRo $\frac{1}{4}\%$ i kskka ds okuLi frd uke $\frac{1}{4}\%$
 $\frac{1}{4}\%$ i ji I # $\frac{1}{4}\%$ i ji fp=

Describe the family Solanaceae in following points-

^vFlok** (OR)

ekyos h dy dk o.ku fuEu 'kh'kZka eadhf^t, &
1/4½ dy dsfo'k"V y{k.k 1/pkj½
1/c½ vlfFkbl egRo 1/4 i kskka ds okuLi frd uke½
1/4 ½ i 8i l # 1/n½ i 8i fp=

Describe the family Malvaceae in following points-

- (a) Distinguish characteristics (Four)
 - (b) Economic importance (Botanical name of any four plants)
 - (c) Floral formula
 - (d) Floral diagram.

itu 19& jške dhV dh foſhkklu voLfkvkd | fp= o.klu djrsgq jške dſpkj mi ; kx
fyf[k, & 14\$2½

Describe the different stages of Silk Worm diagrammatically and give four uses of Silk.

^vFlok** (OR)

e/kəpD[kh] ds thou pØ dh foftklu volFkkvka dk | fp= o.klu djrs gq pkj
iztkfr; ka ds o\$Kkfud uke fyf[k, A 1/4 \$2½

Describe the different stages of life cycle of Honey bee diagrammatically and give scientific name of four species.

8800&&

d{kk 12oh
fo"k; & Nf"k foKku ds rRo ,oa xf.kr
"m i y mRrj**

mRrj 1&½ oLruV itu

(1x5)

- (i) & C
- (ii) & C
- (iii) & C
- (iv) & n
- (v) & I

½C½ fjd r LFku

(1x5)

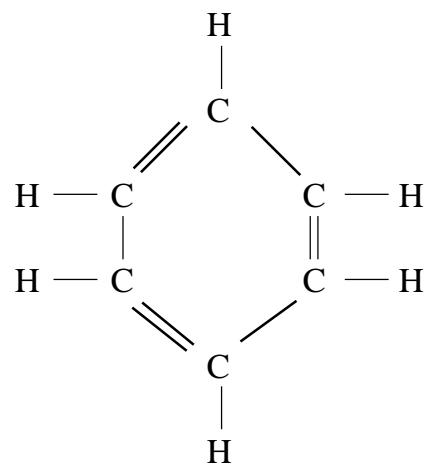
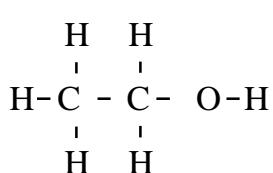
- (i) vklDl htu
- (ii) ik; : fod vEy
- (iii) vulDI h 'ol u
- (iv) l jhdYpj
- (v) e/keD[kh

mRrj 2& tc 'or i d k'k fdl h fiTe e a l s x t j rk gS rks ; g fiTe ds v k/kj dh v k j
 > plus ds l kFk&l kFk l kr jaks ds i d k'k e a c l t rk gSA bl i d k j i k l r j a k a
 ds l e y dks o.k Øe r Fkk 'or i d k'k ds vi us vo; oh j a k a e a foHkDr gks us dh
 fØ; k dks ^o.k l fo{k i .k* dgrs g§ ½½

mRrj 3& , fFky vYdkgy

cathu

1\$1½



mRrj	4&½	bl s l e>uk , oax.kuk l jy gSA	½\$1½
	½	i k; % fujh{k.k ek= l s gh Kkr fd; k tk l drk gSA	
mRrj	5&	Ebr $\oplus \vec{f}$ K _{z+2} C _{x4} A _{z+4} G ₍₂₎	(2)
mRrj	6&½	ok; ph; rFkk Hkflexr gks gSA	(½x4)
	½	'kjhj D; Whdy ds eks vkoj.k l s <dk jgrk gSA	
	½	edkkas phkus okys gks gSA	
	½	dN i dkjgr rksdN esdM+i dk gks gSA fi Nyh tkM i dk gh dM gks gSA	
mRrj	7&½	idk'k dñzvky f}rh; e[; OkdI dschp dh njh dksgh yll dh OkdI njh dgrs gSA	(1x3)
	½	yll dse[; v{k ij fLFkr og fcqftl ij fLFkr e[; v{k ds l ekurj idk'k fdj .k yd l svioru ds i 'pkr , df=r gks h gS ; k , df=r gks h gplz irhr gks h gS ^e[; OkdI ** ; k f}rh; OkdI dgykrk gSA	
	½	idk'k dñz & yd ds vnj og fcqftl l sgkaj tkusokyh idk'k dh fdj .k fcuk vi usekxz l sfopfyr gq l h/k pyh tkrh gS idk'k dñz dgykrk gSA	
mRrj	8&½	eLVMZ x§ cukuseA	(1x3)
	½	lykfLVd m kx eaA	
	½	fu'prd ds : i eaA	
mRrj	9&	, d oxz dh Hkotk x l eh gsrc	½
		oxz dk {ks=Qy ¾ Hkotk² & x² oxz l eh	
		oxz dk {ks=Qy ¾ 225 oxz l eh x² ¾ 225	
		x - √225 = 15	
		oxz dh Hkotk ¾ x l eh ¾ 15 l eh	
		oxz dk ifjeki ¾ 4 x oxz dh Hkotk	
		¾ 4 x 15 l eh ¾ 60 l eh A	
mRrj	10&	Test Cross & vi Hkoh tud ds l kfk c&l Økl ft l l s ; g i rk yxrk gSfd vKkr vku p'kd tho l e; keth ; k fo"k; ; keth dks i jh{k.k l dj.k (Test cross) dgrs gSA	(1½+1½)

T T x t t

F₁ T t

T t x t t

T t : t t in ratio of 1 : 1

Back Cross & tc fdI h l dj ; k fdI h Hk tu d l s l d j h d j . k d j k ; k tk ; s r k s c d Økl d g r s g A

T T x t t

T t F₁ 1/4 dj 1/2

T t x T T - tud

; k T t x t t - tud

mRrj 11& tc 'or i dk' k fdj. kksf i Te e al sx qtkjk tk rk gsrks i dk' k l kr jaks a c / tk rk g s bl i dkj i kl r jaks a ds l e y dks o. kØe dgrs g A 1/4 \$2 1/2
okLrfod o. kØe vkkk l h o. kØe

1- bl sinij i kl r fd; k tk l drk 1- bl sinij i kl r ughfd; k tk l drk g A

2- bl e a c k u h f i Te d s v k / k j d h 2- bl e a c k u h j a Å i j d h v k j r F k k y k y j a Å i j d h v k j g k s k g A

3- jaks a dk Øe l h / k g k s k g A 3- jaks a dk Øe m Y V k g k s k g A

^vFkok**

i vky batu

1- bl d h n { krk Mhty batu l s de g k s h g S A

2- bl batu e a i vky d h ok' i r F k k ok; qdk; z lk j h i n k F k Z g k s k g S A

3- bl e a fo L Q k V g k s u s dk M j g k s k g S A

Mhty batu

1- bl d h n { krk i vky batu l s v f / k d g k s h g S A

2- bl e a Mhty b k u r F k k ok; qdk; z lk j h i n k F k Z g k s k g S A

3- fo L Q k V g k s u s dk M j u gh a g k s k g S A

4- Likdlyx gksk gSA
 mRrj 12& e^ukui^ukrh I \neq Kkr djuk &
 gy& ; k^uxd e^uC = 48.66%, H = 8.11%
 $\therefore O = 100 - (48.66 + 8.11)$
 O = 43.23%

rRo	i fr'krrk	ijek.kq Hkkj	vki f{kd I q;k	ijek.kvka dks I jyre vuq kr
C	46.66	12	46.66/12 = 4.055	4.055/2.7 = 1.5 x 2 = 3
H	8.11	1	8.11/1 = 8.11	8.11/2.7 = 3 x 2 = 6
O	43.23	16	43.23/16 = 2.70	2.7/2.7 = 1 x 2 = 2

vr%; k^uxd dk e^ukui^ukrh I \neq $\frac{3}{4}$ C₃H₆O₂ gSA

^vFkok**

C = 65.73, H = 15.6, N = 19.21 (4)

rRo	ijek.kq Hkkj	i fr'kr ek=k	vki f{kd I q;k	ijek.kvka dks I jyre vuq kr
C	12	65.73	65.73/12 = 5.47	5.47/1.37 = 4
H	1	15.06	15.06/1 = 15.06	15.06/1.37 = 11
N	14	19.21	19.21/14 = 1.37	1.37/1.37 = 1

vr%; k^uxd dk e^ukui^ukrh I \neq $\frac{3}{4}$ C₄H₁₁N gSA

mRrj 13& $\frac{12}{\$1\$1\frac{1}{2}}$

vk; qo"kk; e ^u	j k ^u x; k ^u dh I q;k F	e/; e ^u /; X	X.F.
10&20	3	15	45
20&30	2	25	50
30&40	5	35	175
40&50	11	45	495
50&60	3	55	165
60&70	1	65	65
	1		995

$$\text{I ek} \text{rj ek/; } \frac{E \times F}{EF}$$

$$\frac{995}{25}$$

I ek **rj** ek/; $\frac{3}{4}$ 39.8

^vFkok**

cgyd Kkr dft, &

12\$1\$1½

vd	vkofük
0&10	5
10&20	12
20&30	20
30&40	9
40&50	4

vf/kdre vkofük 20 g§bl fy, cgyd oxl $\frac{3}{4}$ 20&30

$$\text{cgyd } \frac{3}{4} L_1 + \frac{F - F_1}{2F - F_1 - F_2} (L_2 - L_1)$$

$$L_1 = 20, L_2 = 30, F = 20, F_1 = 20, F_2 = 9$$

$$\begin{aligned} Mo &= 20 + \frac{20 - 12}{2 \times 20 - 12 - 9} (30 - 20) \\ &= 20 + \frac{8}{40 - 21} (10) \\ &= 20 + \frac{80}{19} \\ &= 20 + 4.21 \end{aligned}$$

cgyd $\frac{3}{4}$ 24.21

mRrj 14&

dijd&

(1x4)

$\frac{1}{4}\frac{1}{2}$ idk'k & idk'k dh vf/kd rhork e idk'k I ay§.k dh nj de gks tkrh g§ ifrfnu 10&12 ?k. Vs idk'k i ; klr gksk g§ DyksQy I cl s vf/kd uhys rFkk yky rjk n§; kksvo'ks"kr djrk g§A

- 12½ CO₂ dh I knrk& I kell; rk CO₂ dh ek=k c<kbz tkrh gsrks i dk'k I ayšk. k dh
nj ck<+tkfr gSA
- 13½ rki Øe& vf/kdkkr% i kskka ea rki Øe] yxllx 35°C rFkk vf/kdre 45°C ij
i dk'k I ayšk. k I pk: gsrk gSA
- 14½ ty& ; g i dk'k I ayšk. k ij ijk& i kko Mkyrk g; ty dh deh gksus ij
i kskka ea i dk'k I ayšk. k dh xfr de gks tkrh gSA

~vFkok**

v i dkf'k; vflkfØ; k &

; g vflkfØ; k vdkdj eagsrh g; LVke eagsrh g; bl ea CO₂, ATP dh I gk; rk
I s NADPH₂ ds }kj k vi pf; r gkdj 'kdj k LVkpz vlfn curs gSA

$$6CO_2 + 18ATP + 12NADPH_2 \rightarrow C_6H_{12}O_6 + 18ADP + 18H_3Po_4 + 12ADP$$

mRrj 15& **i fj Hkk'kk, j &** (1x5)

- 16½ fo | r {ks dh rhork& fo | r {ks dsl h fclnq ij osks dh rhork ml fclnq
ij j [ks x; s, dks /ku vkosk ij yxusokyscy dscjkcj gsrh gSA
- 17½ fo | r okgd cy& tc I sy [kys ifj i Fk ea gsrh g; rks ml ds /kpk ds e/;
vf/kdre foHkokUrj dks I sy dk fo | r okgd cy dgrs gSA
- 18½ **foHkokUrj**& fo | r ifj i Fk ea fdllgh nks fclnq ds chp foHko ds vrj dks
foHkokurj dgrs gSA
- 19½ **fdykøV ?k. Vl&** , d fdykøV ?k. Vl] fo | r Åtk dh og ek=k g; tks , d
fdykøV dh fo | r 'kfDr okys ifj i Fk ea , d ?k. Vs ea 0; ; gsrh gSA
- 20½ **i frjk&** ; g fd l h pkyd dk og xqk g; tks fo | r /kkj k ds i dk g; ea: dkoV
mRiu djrk gSA

~vFkok**

- 21½ **vke&** ; g i frjk& dk ek=d g; ; fn pkyd ea fl Vka ij 1 okyV dk foHkokUrj
yxus ij ml ea i dkfgr gksusokyh /kkj k 1 , fEi ; j gsrks pkyd dk i frjk& 1
vke gsrk A
- 22½ **okyV&** ; fn fd l h fo | r ifj i Fk ea 1 dyll vkosk dks pykusea 1 tny Åtk
0; ; gsrh g; rks ml I sy dk fo | r okgd cy 1 okyV gsrk gSA
- 23½ **Eih; j&** ; g fo | r /kkj k dh bdkbz gSA fd l h i fji Fk ea 1 I s. M ea i dkfgr

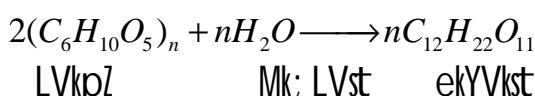
- gks okys vkošk dh ek=k 1 dyke gks rks fo | q /kkjk 1 ,fEi ; j gks A
- 11%** **dyk&** ; g vkošk dk ek=d g§ 1 dyk og vkošk g§ tks fuokr@ok; qe1
etVj nj j [ks vi us gh I eku rFkk cjkj vkošk dks 9×10^9 l; Wu ds cy I s
ifrdfkr djrk gSA
- 10%** **fo | q jI k; fud rY; kd& fdI h i nkFkZ dk oS| q jkl k; fud rY; kd ml dk**
og nØ; eku g§ tksml i nkFkZdsfdI h fo | q vi ?kvI e1 dyk vkošk i dkfgr
djus ij eDr gksk gSA
- mRrj 16& **'khjs I s vYdkgy fuelZk &** 15½
- 11%** **rudj.k&** 'khjs ea ty feykdj 'kdk dk rudj.k fd; k tkrk g§ ft I I s
I knrk 8&10 ifr'kr jg tk, A bl foy; u eaFkkMruqH₂SO₄] veLsu; e
I YQV] ; hLV feykdj foy; u dks 20°C-30°C rki ij Vfd; kaeHkj nsrg§A
- 12%** **fd.ou&** bLloVst , Utkbe I Økst dks Xydkst , oa ÝDVkst eacny nsrk g§, oa
tkbest Xydkst] ÝDVkst dks , fky vYdkgy eijfofrz dj nsrk g§ &

$$C_{12}H_{22}O_{11} + H_2O \xrightarrow{\text{Invertage}} C_6H_{12}O_6 + C_6H_{12}O_6$$

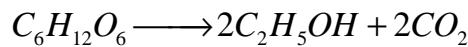
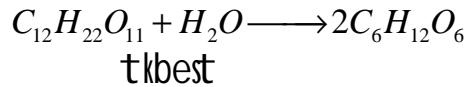
$$C_6H_{12}O_6 \xrightarrow{\text{jayimage}} C_2H_5OH + 2CO_2$$
- foy; u e10 ifr'kr I knrk okyk vYdkgy ikr gksk g§ ft I sok'k dgrsgA
- 13%** **vkl ou&** dkQs Hkkds }jk dk vkl ou djrs g§ bl ea nks Hkkx fo'y§kd , oa
ifj'k§kd gksk g§A bl fØ; k I s 90 ifr'kr , fky , Ydkgy ikr gksk gSA
- 14%** **ifj'k§ku&** iHkkth vkl ou ds }jk fd; k tkrk gSA

~vFkok**

- LVkpZ I s vYdkgy fuelZk&** 15½
- 11%** **'kdkhdj.k&** LVkpZ dk ekYVkst ea ifjorl] vofjir tks dks i hI fy; k tkrk
g§ Nkudj ekYV fu"dk ikr gksk g§bl sekYV fu"dk dgrsg§bl eaMk; LV
fodj gksk g§A e§k ikr djusdsfy, vky] eDdk vlfn i nkFkZ dks dpydj
vfrrlr Hkkj eamckyrs g§A ybz t§ k e§k eaekYV fu"dk feydkj 53°C rki
ij j [k nsrg§Mk; LV fodI LFkpZ dks ekYVkst ea ifjofrz dj nsrg§A ikr
nd dks okZ dgrsg§A



1c% **fd.ou&** okvZ e¹ [kehj feykdj 25⁰C-37⁰C rki ij j [k ns gS ekYVst fodj ekYVst dks Xydkst e¹cny ns k gSA rFkk tkbest Xydkst dks vYdk gy e¹cny ns k gS & ekYVst



mRrj 17& **ekud fopyu &**

12\$1\$1\$1½

oxl vrjk ^y	vkofUk	e/; eW; x	F.x	d=x-m	d ²	Fd ²
0-10	3	5	15	-19.6	384.16	1152.48
10-20	5	15	75	-9.6	92.16	460.8
20-30	9	25	225	0.4	0.16	1.44
30-40	6	35	210	10.4	108.16	648.96
40-50	2	45	90	20.4	416.16	832.32
	25				1000.74	3096

$$I \text{ ek}rj \text{ ek}/; m = \frac{615}{25}$$

$$m = 24.6$$

$$\text{ekud fopyu} = \sqrt{\frac{\sum Fd^2}{\sum F}}$$

$$= \sqrt{\frac{3096}{25}} \\ = \sqrt{123.84}$$

vr%ekud fopyu ¾ 11-12

~vFkok**

ek/; fopyu &

12\$1\$1\$1½

$\alpha x l$	$\nabla k o f U k$ F	$e / ; e \bar{V} ;$ x	F.x	$d = x - m$	d^2	$F d^2$
5-15	5	10	50	-19	361	1805
15-25	15	20	300	-9	81	1215
25-35	12	30	360	1	1	12
35-45	16	40	640	11	121	1936
45-55	2	50	100	21	441	882
	50		1950			5850

$$I \text{ ek} \bar{U} r j \text{ ek} / ; m = \frac{145}{5}$$

$$\therefore m = 29$$

$$ekud \text{ fopyu} = \sqrt{\frac{\sum F d^2}{\sum F}}$$

$$= \sqrt{\frac{5850}{50}} \\ = \sqrt{117}$$

mRrj 18& **I kys h dy &** $\frac{1}{2} \$2\$1\$1\frac{1}{2}$

$\frac{1}{4}\frac{1}{2}$ fof' k"V y{k.k&

$\frac{1}{4}\frac{1}{2}$ i k p i d l j ny yxu

$\frac{1}{2}\frac{1}{2}$ vMi k adh frj Nh fLFkfr

$\frac{1}{3}\frac{1}{2}$ vud o cMs pedhyscht kM Qlys gq cht kMkl u ij fLFkr

$\frac{1}{4}\frac{1}{2}$ cht k.MU; kl LrEHkh;

$\frac{1}{5}\frac{1}{2}$ v kffkld egRo&

$\frac{1}{4}\frac{1}{2}$ vkyw kysue V; cjk d e $\frac{1}{2}$

$\frac{1}{2}\frac{1}{2}$ cku $\frac{1}{4}$ kysue esy kntuk $\frac{1}{2}$

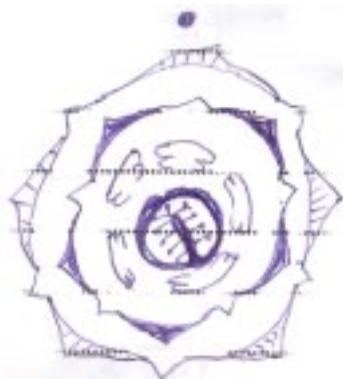
$\frac{1}{3}\frac{1}{2}$ fepz dsl de , ue $\frac{1}{2}$

$\frac{1}{4}\frac{1}{2}$ rEck [kw fudksV; kuk Vfde $\frac{1}{2}$

$\frac{1}{4}\frac{1}{2}$ i t i I # &

EBr, $\oplus \not\in K_{(5)} C_{(5)} A_5 G_{(2)}$

१८½ ि॥ि fp=



^vFkok**

ekyod h dy&

१२\$२\$१\$१½

१९½ of'k"V y{k.k &

११½ i kks 'kkdh;] >kMh ; k o{k

१२½ i fUk; ka l jy] vuq f=d] , dkrj

१३½ i p j vI {;] , dl @kh;] i qUr] vki l eafeydj i p jh uky cukrs
gSA

१४½ tk; kax ip v.Mih] I a Dr mÙkjorh vMk'k;] v{korh chtk.MU; kl A

१५½ vkfFkd egRo &

१६½ xMgy १५gfcldl jkst k I kbzsu I ½

१७½ fhkUMh १५gfcl dl , l D; yvI ½

१८½ dkl १५kM fi ; e Lih ht½

१९½ gkW hgkW १५fYFk; k jks t ; k½

२०½ i ||i || # &

Br Brl $\oplus \text{♀}$ Epi K₃₋₇ K₍₅₎ C₂A_∞G₍₅₎

२१½ i ||i fp= &



अण्डाशय का अनुप्रस्थ काट

- mRrj 19& **jške dñV dh voLFkk, &**
- 1½ v.Mk& eknk i fùk; ka i j 300&400 v.Ms nrsh gS v.Mk pi Vkj i rykj i hykj xksydkj gksrk gS xfez ka ea v.Ms 10&12 fnu rFkk 'khr ea 30 fnuka ea v.Ms QWrs gSA Nkjh bYyh fudyrh gSA
- 2½ bYyh& bYyh dh yEckbz 3 fe-eh o jx I Qn gksrk gS o{k earhu tkMh rFkk mnj ea ikp tkMh Vks gksrh gS bYyh 'kh?kz gh i fùk; ka [kkuk i kjhk dj nrsh gS rFkk 4 I s5 fnu ckn i Eke fuelkpu djrh gSpkfs fuelkpu dsckn ; g vldkj c~~k~~dj viuh yEckbz 8 I seh rd dj ysh gSA thou dk 30&35 fnu A dkdu& ifj i Do bYyh [kkuk cn dj nrsh gSrFkk bl dse[k mi kax jške cukus okysykj xffka kaefodfl r gks tkrgsA ; gh ykj jške inku djrh gS ; sjške ds/kkxs bYyh ds'kjhj ds pkjks vkj fpi ddj jške I r dk fuelzk dj dkdu dk fuelzk dj rsgsA dkdu 38 fe-eh yEck rFkk 19 fe-eh pkMh v.Mkdj I Qn i hysjx dk gksrk gSA
- 3½ I; ik& yxhkx 15 fnu ea bYyh dkdu ea vnj ifjo/ku dj I; ik ea vny tkrk gSA

mi ; kx &

- 1½ oL= cukuseA
- 2½ i gk'kV cukuseA
- 3½ dksh I sry fudkyk tkrk gSft I dk mi ; kx vksf/k; ka ea gksrk gSA
- 4½ i kphu dky ea phu ea l kusds I kfk oLrqofue; ds : i ea jške dk mi ; kx gksrk Fkk A