छत्तीसगढ़ माध्यमिक शिक्षा मण्डल, रायपुर

lEiy&i'u i=

d{kk xii oh

Ñf"k foKku d rRo ,o xf.kr

¼fo|kfpr iHkkx½

NÙkh lx< ek/;fed f'k{kk e.My] jk;ij

i'u & i= dh ;ktuk

Scheme of Question Paper

fo"k;&& Ñf"k foKku d rRo ,o xf.kr i.kkd % 75

le; % 3 ?kV

ijh{kk % gk;j ld.Mjh ¼12oh½

¼v½ 'k{kf.kd mnn';s d vuqlkj eku

(A) Weightage as per Educational objective:

lq Ø0	mnn';		vad	izfr'kr
1-	Kku (Knowledge)		30	40%
2-	vock/k (Understanding)		30	40%
3-	vuqi;kx ,o dk'ky (Application & Skill)		15	20%
		;kx	75	100%

¼c½ bdkbokj vadk dk eku

lq Ø0	bdkbZ dk uke	bdkbZ ij vkcfVr vad	i'u&i= d ik:i vuqlkj vkcfVr vad
1-	Ñf"k Hkkfrd foKku	15	15
2-	Ñf"k jlk;u foKku	15	15
3-	Ñf"k xf.kr	15	15
4-	Ñf"k ouLifr foKku	20	20
5-	Ñf"k tUrq foKku	10	10
	;kx	75	75

¼l½ dfBukbZ Lrj (Difficulty Level)

lO ØO	mnn';	vad	ifr'kr
1-	ljy (Easy)	30	40%
2-	vkSlr (Average)	30	40%
3-	dfBu (Difficult)	15	20%
	;kx	75	100%

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

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

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

i'u & i= dk CyfiUV

Blue Print of Question Paper

fo"k;&& Ñf"k foKku d rRo ,o xf.kr i.kkd % 75

le; % 3 ?kV

ijh{kk % gk;j ld.Mjh ¼12oh½

bdkbZ l-Ø-	bdkbZ	bdkbZ ij vkcfVr vad	vadkuqj i'u							dy i'u
			1 vad	2 vad	3 vad	4 vad	5 vad	6 vad	6 vad ;k bl l vf/kd	
1	Ñf"k Hkkfrd foKku	15	1	1	1	1	1	&	&	(1+4)
2	Ñf"k jlk;u foKku	15	1	1	1	1	1	&	&	(1+4)
3	Ñf"k xf.kr	15	1	1	1	1	1	&	&	(1+4)
4	Ñf"k ouLifr foKku	20	5	1	1	1	&	1	&	(5+4)
5	Ñf"k tUrq foKku	10	2	1	&	&	&	1	&	(2+2)
	;kx ¼vad½	75	10	10	12	16	15	12	&	75
	;kx	75	(1) 10	5	4	4	3	2	-	1+18

Set - A

gk;j ld.Mjh Ldy lVhfQdV ijh{kk

Higher Secondary School Certificate Examination

lEiy&i'u i=

SAMPLE PAPER

fo"k; %& (Subject) - Ñf"k foKku d rRo ,o xf.kr

le; 3 ?k.Vk (Time- 3 Hrs)

d{kk %& (Class) - ckjgoh %12oh% **i.kkd 75 (M.M.)**

(Instruction) & %fun'k%

1- lHkh i'u gy djuk vfuok;g A
Attempt all the Question

2- i'u Øekd 01 e 10 vd fu/kkfjr g A nk dky[k.M g A [k.M ^^v** e 05 cgfodYih; i'u rFkk [k.M ^^c** e 05 fjDr LFkkuk dh ifr vFkok mfpr lc/k tkfM, A iR;d i'u d fy, 1 vd vkcfVr g A
Q. No. 01 Carries 10 Marks. There are two sub-section, Section A is Multiple choice carries 05 marks and section B is fill in the blanks or match the column carries 05 marks.

3- i'u Øekd 02 l i'u Øekd 06 rd vfr y?kmRrjh; i'u g A iR;d i'u ij 02 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 30 'kCn A
Q. No. 02 to 06 are very short answer type question & carries 02 marks each. Word limit is maximum 30.

4- i'u Øekd 07 l i'u Øekd 10 rd y?kmRrjh; i'u g A iR;d i'u ij 03 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 50 'kCn A
Q. No. 07 to 10 are short answer type question & carries 03 marks each. Word limit is maximum 50.

5- i'u Øekd 11 l i'u Øekd 14 rd y?kmRrjh; i'u g A iR;d i'u e vkrfjd fodYi g vkj iR;d i'u ij 04 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 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- i'u Øekd 15 l i'u Øekd 17 rd nh?kmRrjh; i'u g A iR;d i'u e vkrfjd fodYi g vkj iR;d i'u ij 05 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 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- i'u Øekd 18 l i'u Øekd 19 rd nh?kmRrjh; i'u g A iR;d i'u e vkrfjd fodYi g vkj iR;d i'u ij 06 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 150 'kCn A

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

i'u 1&**[k.M ¼v½ lgh fodYi pqudj fyf[k;s &**

Section (A): Choose correct alternative-

(i) fuEu esa ifrjks/k dh bdkbZ gS &

¼v½ vkse ¼c½ ,fEi;j

¼l½ tyh ¼n½ okYV

The unit of resistance is -

(a) Ohm (b) Ampere

(c) Jule (d) Volt

(ii) ,lhfVyhu dk IUPAC uke gS &

¼v½ ,Fksbu ¼c½ ikbikbu

¼l½ ,Fkuky ¼n½ ,Fkhu

The IUPAC name of Acetylene is-

(a) Ethyne (b) Propyne

(c) Ethanol (d) Ethene

(iii) fuEukafdr la[;k,a 11] 14] 23] 26] 10] 12] 8] 6 dk lekUrj ek/; gS&

¼v½ 13] ¼c½ 14 ¼l½ 15 ¼n½ 16

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

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

(iv) vjfdl gkbikft;k dk lEc/a/k gS &

¼v½ dy& ekyoh ¼c½ dy& ØlhQjh

¼l½ dy& yX;feukslh ¼n½ dy& lkyuslh

Arachis hypogea is related to family-

(a) Malvaceae (b) Crucifereae

(c) Legnuminoceae (d) Solanaceae

(v) e.My us viuh ;kx fuEu esa fdl ik/a ij fd,Fk &

¼v½ puk] ¼c½ eVj] ¼l½ ex ¼n½ vjgj

Mendel perform his experiment on which following plant-

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

[k.M ¼c½ fjDr LFkkuk dh ifr dhft;s & ¼1x5)

Section (B): Fill in the blanks -

(i) thUl e vpkud vuokf'kd ifjoru vku dk ---------- dgr g A

The sudden heritable change in gene is called ..... .

(ii) ,d gh x.k d fofHkUu foijhr :ik dk ixV dju oky dkjdk dk ---------- dgr g A

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

(iii) ;fn F_1 ldj lrfr dk fdlh Hkh tud l ldfjr djk;k tk, rk ,l ldj.k dk ---------- dgr g A

If hybrid F_1 generation is crossed with any parent it is called ..... .

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

Honeybee belong to order ..... .

(v) j'ke dhV dk oKkfud uke ---------- g A

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

i'u 2& tc iFoh] pnek vkj l; d chp ,d lh/kh j[kk e vk tkrh g] rk dku lh ?kVuk gkrh g \ ¼2½

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

i'u 3& eFku vkj ,Fkhyhu dk ljpuk l= cukb; A ¼2½

Give the Structural formula of Methane and Ethylene.

i'u 4& lekrj ek/; d nk x.k fyf[k, A ¼2½

Write any two properties of Mean.

i'u 5& ekyolh dy dk i"i l= fyf[k, A ¼2½

Write Floral Formula of family Malvaceae.

i'u 6& x.k&vkFkkIVjk d pkj y{k.k fyf[k, A ¼2½

Write any four characteristics of order-Orthoptera.

i'u 7& idk'k dk ijkoru fdl dgr g \ bld fu;e fyf[k, A ¼1$2½

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

i'u 8& ,fFky ,Ydkgy d mi;kx fyf[k, A ¼dkb rhu½ ¼3½

Write uses of ethyle Alchohol. (any three)

i'u 9& ml ox dh Hkt k rFkk {k=Qy Kkr dhft , ft l dk fod.k $20\sqrt{2}$ l-eh- g A ¼3½

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

i'u 10& e.My d iHkkfork d fu;e dk] ,d mnkgj.k d }kjk le>kb; A ¼3½

Explain Mendel's Law of Dominance with an example.

i'u 11& o.k Øe dk vk'k; Li"V djr g,] okLrfod ,o vkHkkl h o.kØe e vrj fyf[k,A ¼1$3½

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

^^vFkok^^ (OR)

Mh ty ,o iVky b tu e vrj fyf[k, A (1x4)

Write difference between Petrol and Diesel engine.

i'u 12& ,d dkcfud ;kfxd e dkcu 48-66% rFkk gkbMk tu 8-11% g rk] ;kfxd dk eykuikrh l= Kkr dhft , & ¼4½

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

^^vFkok^^ (OR)

,d dkcfud ;kfxd d dkcu 65-73%, gkbMk tu 15-6% rFkk ukbVk tu 19-21% g rk ;kfxd dk eykuikrh l= Kkr dhft , A ¼4½

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

i'u 13& ,d lo{k.k e fuEufyf[kr vkdM ikIr g, & ¼4½

vk; o"kZ e ¼	10&20]	20&30]	30&40]	40&50]	50&60]	60&70
jkfx;k dh l[;k	3	2	5	11	3	1

vkdMk d lekUrj ek/; dh x.kuk dhft ; A

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.

^^vFkok (OR)**

fuEu lkj.kh e dN Nk=k d ikIrkdk dk fooj.k fn;k x;k g] vdk dk cgyd Kkr dhft, & ¼4½

vdk	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 sstudents, calculate the mode-

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

i'u 14& idk'k l'y"k.k ij iHkko Mkyu oky dkjdk dk l{kip e fyf[k, A ¼4½

Write factors affecting Photo Synthesis, in brief.

^^vFkok (OR)**

idk'k l'y"k.k dh vidkf'kd vfHkfØ;k dk l{kip e o.ku dhft, A ¼4½

Describe in brif Dark reaction of Photo-Synthesis

i'u 15& fuEufyf[kr dk ifjHkkf"kr dhft, & ¼5½ (1x5)

¼v½ fo|r {k= dh rhork] ¼c½ fo?kV okgd cy ¼l½ foHkokrj

¼n½ fdyokV ?k.Vk ¼b½ fo|r ifrjks/k

Define Following -

(a) Intensity of Electric field (b) Electro motive force

(c) Potential difference (d) Kilowatt hour (e) Electric resistance

^^vFkok (OR)**

fuEufyf[kr dk ifjHkkf"kr dhft, &

¼v½ vke ¼c½ okYV ¼l½ ,Eih;j ¼n½ dyke

¼b½ fo|r jks/kdrk;fud rY;kd

Define Following :-

(a) Ohm (b) Volt (c) Ampere (d) Coulom

(e) Electro-chemical equivalance

i'u 16& 'khj l vYdkgy cuku dh fof/k dk foLrkj iod le>kb; A

Explain formation of Alcohol from Malasses, in detail.

^^vFkok^^ (OR)

LVkp l vYdkgy fuek.k dh fof/k dk o.ku fuEu 'kh"kdk e dhft, & ¼5½

¼v½ 'kdjhdj.k] ¼c½ fd.Mou] ¼l½ ifj'kk/ku

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

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

i'u 17& fuEufyf[kr lkj.kh l ekud fopyu Kkr dhft, & ¼5½

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

Find the standard deviation from the following table-

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

^^vFkok^^ (OR)

fuEufyf[kr lkj.kh l ek/; fopyu Kkr dhft, &

Find the mean deviation from the following table -

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

i'u 18& lkyuslh dy dk fuEu 'kh"kdk e o.ku dhft, & (1½x4)

¼v½ dy d fo'k"V y{k.k ¼pkj½

¼c½ vkfFkd egRo ¼4 ik/kk d okuLifrd uke½

¼l½ i"i l= ¼n½ i"i 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)

ekyolh dy dk o.ku fuEu 'kh"kdk e dhft, &

¼v½ dy d fo'k"V y{k.k ¼pkj½

¼c½ vkfFkd egRo ¼4 ik/kk d okuLifrd uke½

¼l½ i"i l= ¼n½ 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.

i'u 19& j'ke dhV dh fofHkUu voLFkkvk dk lfp= o.ku djr g, j'ke d pkj mi;kx fyf[k, & ¼4$2½

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

^^vFkok (OR)**

e/keD[kh d thou pØ dh fofHkUu voLFkkvk dk lfp= o.ku djr g, pkj itkfr;k d oKkfud uke fyf[k, A ¼4$2½

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

&&00&&

d{kk 12oh

fo"k;& Ñf"k foKku d rRo ,o xf.kr

^^lEiy mRrj**

mRrj 1&¼v½ **oLrfu"V i'u** (1x5)

(i) & v

(ii) & v

(iii) & l

(iv) & l

(v) & c

¼c½ **fjDr LFkku** (1x5)

(i) mRifjoru

(ii) ,fyy

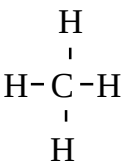
(iii) irhi ldj.k

(iv) gk;eukIVjk

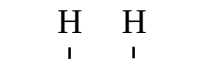
(v) *ckEcDl ekjh*

mRrj 2& pUnxg.k iMrk g] ;g xg.k ge'kk i.kekIh d fnu gkrk g A ¼1$1½

mRrj 3& eFku



(CH_4)



(C_2H_4)

,lFkhyhu

mRrj 4&¼1½ lekrj ek/; dh x.kuk ljy g A ¼1$1½

¼2½ vkdMk dk Øec) djuk vko';d ugh g A

¼3½ leLr eY;k ij vk/kkfjr g A

mRrj 5& ekyolh dy dk i"i l= & ½2½

$Br, Brl, \oplus, \male\!\!\!\!\female, \text{Epi k}_{3-7}, K_{(5)}, \overline{C}_5.A_{(\infty)}G_{(5-\infty)}$

mRrj 6& vkFkkIVjk d y{k.k & (½x4)

¼1½ vxi[k piV ,o dM A

¼2½ i'p i[k eyk;e A

¼3½ e[kkx dkVu ,o pcku oky A

¼4½ xnk ye v[k.Mh; gkr g A

mRrj 7& tc dkb idk'k dh fdj.k ,d lxkeh ek/;e l pydj fdlh pednkj i"B ij vkifrr gkrh g] rk ogh pednkj i"B l Vdjkdj mlh ek/;e e ykV tkrh g rk bl idk'k dk ijkoru dgr g A

ijkoru dh fu;e & ¼1$2½

¼1½ vkiru dk.k vkj ijkoru dk.k lno cjkcj gkr g A

¼2½ vkifrr fdj.k] ijkofrr fdj.k vkj vkiru fcUn rFkk vfHkyEc ge'kk ,d gh ry e gkr g A

mRrj 8& ,fFky vYdkgy d mi;kx & ¼dkb rhu½ (½x3)

¼1½ efnjk rFkk vU; i; cuku e A

¼2½ nokvk d fuek.k e A

¼3½ foyk;d d :i e A

¼4½ dkcfud ;kfxdk&bFkj] DykjkQke] ,lhfVd vEy] vk;kMkQke vkfn d fuek.k e A

¼5½ b/ku d :i e A

¼6½ dhVk.kuk'kd d :i e A

mRrj 9&

ox dk {k=Qy ¾ ¼Hkt k½²

ox dk fod.k ¾ ox dh Hkt k × $\sqrt{2}$

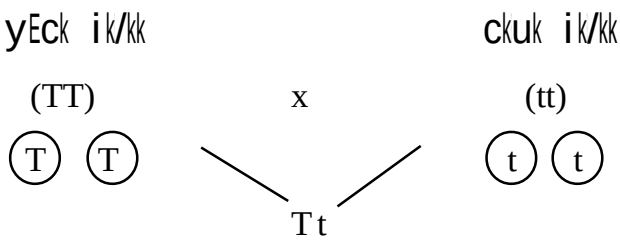
$$\text{ox dh Hkt k} = \frac{\text{ox dk fod.k}}{\sqrt{2}}$$

$$= \frac{20\sqrt{2}}{\sqrt{2}} = 20 \text{ l-eh-}$$

{k=Qy ¾ ¼20½² ¾ 400 ox l-eh-

(1½+1½)

mRrj 10& e.My dk iHkkfork dk fu;e & fu;ekulkj tc ,d tkMk foijhr y{k.kk dk vkil e ØkI djk;k tkrk g rk F_1 ih<h e doy ,dy {k.k idV gkrk g ftl iHkkoh y{k.k dgr g A v0;Dr y{k.k dk viHkkoh y{k.k dgr g A



F_1 yEck ik/kk ¼1$2½

mRrj 11& tc 'or idk'k fdj.kk dk fiTe e l xtkjk tkrk g rk idk'k lkr jxk e cV tkrk g] bl idkj ikIr jxk d leg dk o.kØe dgr g A ¼1$2½

	okLrfod o.kØe		vkHkkl h o.kØe
1-	bl in ij ikIr fd;k tk ldrk g A	1-	bl in ij ikIr ugh fd;k tk ldrk A
2-	ble cxuh fiTe d vk/kkj dh vkj rFkk yky jx Åij dh vkj gkrk g A	2-	ble cxuh jx Åij dh vkj rFkk yky jx vk/kkj dh vkj gkrk g A
3-	jxk dk Øe l h/kk gkrk g A	3-	jxk dk Øe mYVk gkrk g A

^^vFkok

	iVky btu		Mh ty btu
1-	bldh n{krk Mh ty btu l de gkrh g A	1-	bldh n{krk iVky btu l vf/kd gkrh g A
2-	bl btu e iVky dh ok"i rFkk ok; dk;dkjh inkFk gkrk g A	2-	ble Mh ty b/ku rFkk ok; dk;dkjh inkFk gkrk g A
3-	ble foLQkV gku dk Mj gkrk g A	3-	foLQkV gku dk Mj ugh gkrk g A
4-	Likd lyx gkrk g A	4-	ble vk;y iEi gkrk g A

mRrj 12& eykuikrh l= Kkr djuk &

gy& ;kfxd e C = 48.66%, H = 8.11%

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

O = 43.23%

rRo	ifr'krrk	ijek.k Hkkj	vkif{kd l[;k	ijek.kvk dk ljyre vuikr
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% ;kfxd dk eykuikrh l= ¾ $C_3H_6O_2$ g A ¼4½

^^vFkok

C = 65.73, H = 15.6, N = 19.21

rRo	ijek.k Hkkj	ifr'kr ek=k	vkif{kd l[;k	ijek.kvk dk ljyre vuikr
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% ;kfxd dk eykuikrh l= ¾ $C_4H_{11}N$ g A ¼4½

mRrj 13&

vk; o"kk e	jkfx;k dh l[;k F	e/; eY; 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

lekrj ek/; ¾ $\frac{E \times F}{EF}$ ¼1$2$1½

$= \frac{995}{25}$

lekrj ek/; = 39-8 jkxh

^^vFkok**

cgyd Kkr dhft, & ¼1$2$1½

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

vf/kdre vkofÙk 20 g blfy, cgyd ox = 20&30

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

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

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

cgyd = 24-21 vd

mRrj 14& **dkjd&** (1x4)

¼1½ idk'k & idk'k dh vf/kd rhork e idk'k l'y"k.k dh nj de gk tkrh g] ifrfnu 10&12 ?k.V idk'k i;kIr gkrk g] DykfQy lcl vf/kd uhy rFkk yky rjx n/;k dk vo'kkf"kr djrk g A

¼2½ CO_2 dh lkUnrk& lkeU; rk CO_2 dh ek=k c<kb tkrh g rk idk'k l'y"k.k dh nj ck< tkfr g A

¼3½ rkiØe& vf/kdk'kr ik/kk e rkiØe] yxHkx 35°C rFkk vf/kdre 45°C ij

idk'k l'y"k.k lpk: gkrk g A

¼4½ ty& ;g idk'k l'y"k.k ij ijk{k iHkko Mkyrk g] ty dh deh gku ij ik/kk e idk'k l'y"k.k dh xfr de gk tkrh g A

^^vFkok**

vidkf'k; vfHkfØ;k & (1x4)

;g vfHkfØ;k v/kdkj e gkrh g] LVkek e gkrh g] ble CO_2, ATP dh lgk;rk l $NADPH_2$ d }kjk vipf;r gkdj 'kdjk] LVkp vkfn cur g A

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

mRrj 15& **ifjHkk"kk,¡ &** (1x5)

¼v½ **fo|r {k= dh rhork&** fo|r {k= d fdlh fcUn ij o-{k- dh rhork ml fcUn ij j[k x; ,dkd /ku vko'k ij yxu oky cy d cjkcj gkrh g A

¼c½ **fo|r okgd cy&** tc ly [ky ifjiFk e gkrh g rk mld /kok d e/; vf/kdre foHkokUrj dk ly dk fo|r okgd cy dgr g A

¼l½ **foHkokUrj**& fo|r ifjiFk e fdUgh nk fcUnvk d chp foHko d vrj dk] foHkokurj dgr g A

¼n½ **fdykokV ?k.Vk&** ,d fdykokV ?k.Vk] fo|r Åtk dh og ek=k g tk ,d fdykokV dh fo|r 'kfDr oky ifjiFk e ,d ?k.V e 0;; gkrh g A

¼b½ **ifrjks/k&** ;g fdlh pkyd dk og x.k g tk fo|r /kkjk d iokg e :dkoV mRiUu djrk g A

^^vFkok**

¼v½ **vke&** ;g ifrjks/k dk ek=d g] ;fn pkyd e flVk ij 1 okYV dk foHkokUrj yxku ij mle iokfgr gku okyh /kkjk 1 ,fEi;j gk rk pkyd dk ifrjks/k 1 vke gkxk A

¼c½ **okYV&** ;fn fdlh fo|r ifjiFk e 1 dyke vko'k dk pyku e 1 ty Åtk 0;; gkrh g rk ml ly dk fo|r okgd cy 1 okYV gkrk g A

¼l½ **,Eih;j&** ;g fo|r /kkjk dh bdkb g A fdlh i fjiFk e 1 ld.M e iokfgr gku oky vko'k dh ek=k 1 dyke gk rk fo|r /kkjk 1 ,fEi;j gkxh A

¼n½ **dyke&** ;g vko'k dk ek=d g] 1 dyke og vko'k g tk fuokr@ok; e 1 ehVj nj j[k viu gh leku rFkk cjkcj vko'k dk $9x10^9$ U;Vu d cy l ifrdf"kr djrk g A

¼b½ **fo|r jlk;fud rY;kd&** fdlh inkFk dk o|r jklk;fud rY;kd mldk og n0;eku g tk ml inkFk d fdlh fo|r vi?kVl e 1 dyke vko'k iokfgr dju ij eDr gkrk g A

mRrj 16& **'kh| l vYdkgy fuek.k &** ¼5½

¼1½ **rudj.k&** 'kh| e ty feykdj 'kdjk dk rudj.k fd;k tkrk g ftll lknrk 8&10 ifr'kr jg tk, A bl foy;u e FkkMk ru H_2SO_4] vekfu;e lYQV] ;hLV feykdj foy;u dk 20^0C-30^0C rki ij Vfd;k e Hkj nr g A

¼2½ **fd.ou&** bUoVt ,Utkbe lØkt dk Xydkt ,o ÝDVkt e cny nrk g ,o tkbet Xydkt] ÝDVkt dk ,fFky vYdkgy e ijfofrr dj nrk 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 lknrk okyk vYdkgy ikIr gkrk g] ftl ok'k dgr gA

¼3½ **vklou&** dkQ HkHkd }kjk vklou djr g ble nk Hkkx fo'y"kd ,o ifj'kk/kd gkr g A bl fØ;k l 90 ifr'kr ,fFky ,Ydkgy ikIr gkrk g A

¼4½ **ifj'kk/ku&** iHkkth vklou d }kjk fd;k tkrk g A

^^vFkok**

LVkp l vYdkgy fuek.k& (1x5)

¼v½ **'kdjhdj.k&** LVkp dk ekYVkt e ifjoru] vdfjr tk dk ihl fy;k tkrk g] Nkudj ekYV fu"d"k ikIr gkrk g bl ekYV fu"d"k dgr g ble Mk;LVl fodj gkrk g A e'k ikIr dju d fy, vky] eDdk vkfn inkFk dk dpydj vfrrIr Hkki e mckyr g A yb tlk e'k e ekYV fu"d"k feydkj 53^0c rki ij j[k nr g Mk;LVl fodl LFkp dk ekYVkt e ifjofrr dj nr g A ikIr no dk okV dgr g A

$$2(C_6H_{10}O_5)_n + nH_2O \longrightarrow nC_{12}H_{22}O_{11}$$

LVkp Mk;LVt ekYVkt

¼c½ **fd.ou&** okV e [kehj feykdj 25^0c-37^0c rki ij j[k nr g ekYVt fodj ekYVkt dk Xydkt e cny nrk g A rFkk tkbet Xydkt dk vYdkgy e cny nrk g &

ekYV t

$$C_{12}H_{22}O_{11} + H_2O \longrightarrow 2C_6H_{12}O_6$$

tkbe t

$$C_6H_{12}O_6 \longrightarrow 2C_2H_5OH + 2CO_2$$

mRrj 17& **ekud fopyu &**

ox vrjky	vkofÜk	e/; eY; 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

¼2½

lekrj ek/; $m = \frac{615}{25}$

$m = 24.6$ ¼1½

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

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

$= \sqrt{123.84}$ ¼1½

vr% ekud fopyu ¾ 11-12 ¼1½

^^vFkok**

ek/; fopyu & ¼5½

ox	vkofÜk F	e/; eY; 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

¼2½

lekUrj ek/; $m = \frac{145}{5}$ ¼1½

$\therefore m = 29$

ekud fopyu $= \sqrt{\frac{\sum Fd^2}{\sum F}}$ ¼1½

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

$= \sqrt{117}$ ¼1½

mRrj 18& **lkyulh dy &** ¼2$2$1$1½

¼v½ fof'k"V y{k.k&

¼1½ ikp idlj ny yXu

½2½ vMik dh frjNh fLFkfr

½3½ vud o cM pedhy chtkM Qy g, chtkMklu ij fLFkr

¼4½ chtk.MU;kl LrEHkh;

¼c½ vkfFkd egRo&

¼1½ vky ¼lkyul V;cjkle½

½2½ cxu ¼lkyul eykUtuk½

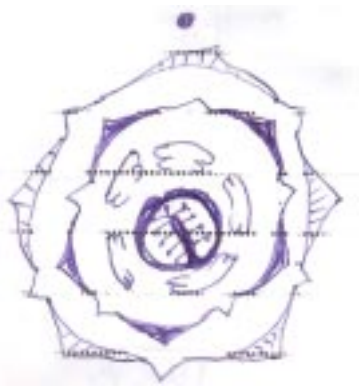
½3½ fep ¼dfllde ,ue½

¼4½ rEck[k ¼fudkfV;kuk gcde½

¼l½ i"il= &

EBr, $\oplus \, ♂ \, K_{(5)} \, C_{(5)} \, A_5 \, G_{(2)}$

¼n½ i"ifp=



^^vFkok**

ekyoh dy& ¼2$2$1$1½

¼v½ of'k"V y{k.k &

¼1½ ik/k 'kkdh;] >kMh ;k o{k

¼2½ ifÙk;k ljy] vuif=d] ,dkrj

¼3½ idlj vl[;] ,dl?kh;] irUr] vkil e feydj idljh uky cukr g A

¼4½ tk;kx ip v.Mih] l;Dr mÙkjorh vMk'k;] v{korh chtk.MU;kl A

¼c½ vkfFkd egRo &

¼1½ xMgy ¼fgfcLdj jktk lkbufUl½

¼2½ fHkUMh ¼fgfcldl ,lD;yVl½

¼3½ dikl ¼xkflfi;e Lihlht½

¼4½ gkyhgkd ¼vfYFk;k jkft ;k½

¼l½ i"il= &

$$\mathrm{Br\,Brl} \oplus \male \ \mathrm{Epi\,K_{3\text{-}7}\,K_{(5)}}\ \mathrm{C_2 A_\infty\, G_{(5)}}$$

¼n½ i"i fp= &

पुष्प चित्र

अण्डाशय का अनुप्रस्थ काट

mRrj 19& **j'ke dhV dh voLFkk,&** ¼4$2½

¼1½ v.Mk& eknk ifÙk;k ij 300&400 v.M nrh g v.Mk piVk] iryk] ihyk] xkykdkj gkrk g] xfe;k e v.M 10&12 fnu rFkk 'khr e 30 fnuk e v.M QVr g A NkVh bYyh fudyrh g A

¼2½ bYyh& bYyh dh yEckb 3 fe-eh- o jx lQn gkrk g] o{k e rhu tkMh rFkk mnj e ikp tkMh Vkx gkrh g] bYyh 'kh?k gh ifÙk;k [kkuk ikjHk dj nrh g

rFkk 4 l 5 fnu ckn iFke fuekpu djrh g pkFk fuekpu d ckn ;g vkdkj c<kdj viuh yEckb 8 l-eh- rd dj yrh g A thou dk 30&35 fnu A

¼3½ dkdu& ifjiDo bYyh [kkuk cn dj nrh g rFkk bld e[k mikx j'ke cuku oky ykj xfFk;k e fodflr gk tkr g A ;gh ykj j'ke inku djrh g] ; j'ke d /kkx bYyh d 'kjhj d pkjk vkj fpiddj j'ke lr dk fuek.k dj dkdu dk fuek.k djr g A dkdu 38 fe-eh- yEck rFkk 19 fe-eh- pkMk v.Mkdj lQn ihy jx dk gkrk g A

¼4½ l;ik& yxHkx 15 fnu e bYyh dkdu e vnj ifjo/ku dj l;ik e cny tkrk g A

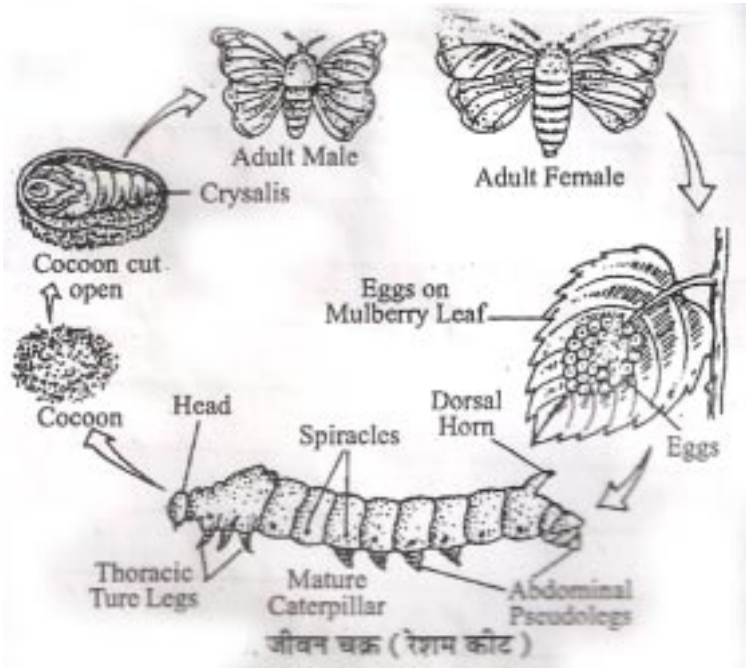
mi;kx &

¼1½ oL= cuku e A

½2½ ijk'kV cuku e A

¼3½ dk;k l ry fudkyk tkrk g ftldk mi;kx vk"kf/k;k e gkrk g A

¼4½ ikphu dky e phu e lku d lkFk oLr fofue; d :i e j'ke dk mi;kx gkrk Fkk A



&&00&&

Set - B

gk;j ld.Mjh Ldy lVhfQdV ijh{kk

Higher Secondary School Certificate Examination

lEiy&i'u i=

SAMPLE PAPER

fo"k; ¼& (Subject) - Ñf"k foKku d rRo ,o xf.kr

le; 3 ?k.Vk (Time- 3 Hrs)

d{kk ¼& (Class) - ckjgoh ¼12oh½ **i.kkd 75 (M.M.)**

(Instruction) & ¼fun'k½

1- lHkh i'u gy djuk vfuok;g A
Attempt all the Question

2- i'u Øekd 01 e 10 vd fu/kkfjr g A nk dky[k.M g A [k.M ^^v** e 05 cgfodYih; i'u rFkk [k.M ^^c** e 05 fjDr LFkkuk dh ifr vFkok mfpr lc/k tkfM, A iR;d i'u d fy, 1 vd vkcfVr g A
Q. No. 01 Carries 10 Marks. There are two sub-section, Section A is Multiple choice carries 05 marks and section B is fill in the blanks or match the column carries 05 marks.

3- i'u Øekd 02 l i'u Øekd 06 rd vfr y?kmRrjh; i'u g A iR;d i'u ij 02 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 30 'kCn A
Q. No. 02 to 06 are very short answer type question & carries 02 marks each. Word limit is maximum 30.

4- i'u Øekd 07 l i'u Øekd 10 rd y?kmRrjh; i'u g A iR;d i'u ij 03 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 50 'kCn A
Q. No. 07 to 10 are short answer type question & carries 03 marks each. Word limit is maximum 50.

5- i'u Øekd 11 l i'u Øekd 14 rd y?kmRrjh; i'u g A iR;d i'u e vkrfjd fodYi g vkj iR;d i'u ij 04 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 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- i'u Øekd 15 l i'u Øekd 17 rd nh?kmRrjh; i'u g A iR;d i'u e vkrfjd fodYi g vkj iR;d i'u ij 05 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 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- i'u Øekd 18 l i'u Øekd 19 rd nh?kmRrjh; i'u g A iR;d i'u e vkrfjd fodYi g vkj iR;d i'u ij 06 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 150 'kCn A

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

d{kk 12oh

fo"k;& Ñf"k foKku d rRo ,o xf.kr

^lEiy i'u**

i'u 1& **[k.M ¼v½ lgh fodYi pudj fyf[k; &**

Section (A) Choose correct answer- (1x5=5)

(i) fo|r /kkjk dk ek=d g &

¼v½ vke ¼c½ ty

¼l½ okYV ¼n½ ,fEi;j

The unit of Electric current is -

(a) Ohm (b) Jule

(c) Volt (d) Ampere

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

¼v½ ikikbu ¼c½ ,Fkuky

¼l½ ,Fkhu ¼n½ ,Fkkbu

The IUPAC name of Ethyl Alchohol is-

(a) Propyne (b) Ethanol

(c) Ethene (d) Ethyne

(iii) l[;k, 1] 2] 9] 11] 6 dk lkekU rj ek/; g&

¼v½ 4-8] ¼c½ 5-8 ¼l½ 5-9 ¼n½ 6-8

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

(a) 4.8 (b) 5.8 (c) 5.9 (d) 6.8

(iv) lkyue eykU tuk dk lc/k g &

¼v½ dy& ØlhQjh l ¼c½ dy& yX;feukslh l

¼l½ dy& lkyulh l ¼n½ dy& ekyolh l

Solanum Melongena is related to family-

(a) Crucifereae (b) Legnuminoceae

(c) Solanaceae (d) Malvaceae

(v) e.My dk iFke fu;e g &

¼v½ iFkDdj.k dk fu;e ¼c½ Lor= vi0;gu dk fu;e

¼l½ iHkkfork dk fu;e ¼n½ viHkkfork dk fu;e

The first Low of Mendel is-

(a) Law of segregation (b) Law of Independent assortment

(c) Law of dominance (d) Law of Indominance

[k.M ¼c½ fjDr LFkkuk dh ifr dhft;s & ¼1x5)

Section (B) Fill in the blanks -

(i) VkVhikVUlh dk lc/k ---------- l g A

Totepotency is related to ..... .

(ii) thok e x.kl=k d lVk dh l[;k e ifjoru dk ---------- dgr g A

The number of chromosomes set is changed which is called ..... .

(iii) i"ik e l idlj ;k ijkxdk"kk dk gVkuk dgykrk g A

Removel of stamen from flower is known as ..... .

(iv) ,.Vkekykth d vrxr ---------- dk v/;;u fd;k tkrk g A

..... are studies under entomology.

(v) yk[k dhV dk oKkfud uke ---------- g A

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

i'u 2& tc l;s vkj iFoh d chp pUnek ,d lh/k e vk tkrk g rk dku lh ?kVuk gkrh g A ¼2½

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

i'u 3& ,Fku vkj ,lhfVyhu dk ljpuk l= fyf[k, A ¼2½

Write Structural formula of Ethane and Acetylene.

i'u 4& ekf/;dk d nk x.k fyf[k, A ¼2½

Write any two properties of Median.

i'u 5& lkyulh dy dk i"i l= nhft;s A ¼2½

Write Floral Formula of family Solanaceae.

i'u 6& x.k&fMIVjk d pkj y{k.k fyf[k, A ¼2½

Write four characters of order Diptera.

i'u 7& vko/ku {kerk dk ifjHkkf"kr dj] ljy l{en'kh dh vko/ku {kerk dk l= fyf[k, A ¼1$2½

Define magnifying power and give formula of magnifying power for simple microscope.

i'u 8& xkcj xl d mi;kx fyf[k, A ¼3½

Write uses of Gobar-Gas.

i'u 9& ,d ox dh Hkt k 32 l-eh- g] ox dk {k=Qy ,o fod.k dh yEckb Kkr dhft , A ¼3½

The side of a square is 32 centimeter, find the area and digonal of square.

i'u 10& e.My d iFddj.k d fu;e dk lknkgj.k le>kb; A ¼3½

Explain Mendel's Law of segregation with example.

i'u 11& o.k Øe dk vk'k; Li"V djr g,] okLrfod ,o vkHkkl h o.kØe e vrj fyf[k,A ¼1$3½

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

^^vFkok (OR)**

Mh ty ,o iVky b tu e vrj fyf[k, A (1x4)

Write difference between Petrol and Diesel engine.

i'u 12& ,d dkcfud ;kfxd e dkcu 48-66% rFkk gkbMk tu 8-11% g rk] ;kfxd dk eykuikrh l= Kkr dhft , & ¼4½

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

^^vFkok (OR)**

,d dkcfud ;kfxd d dkcu 65-73%, gkbMk tu 15-6% rFkk ukbVk tu 19-21% g rk ;kfxd dk eykuikrh l= Kkr dhft , A ¼4½

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

i'u 13& ,d lo{k.k e fuEufyf[kr vkdM ikIr g, & ¼4½

vk;q o"kZ e %	10&20]	20&30]	30&40]	40&50]	50&60]	60&70
jksfx;ksa dh l[;k%	3	2	5	11	3	1

vkdMksa d lekUrj ek/; dh x.kuk dhft ; A

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.

^^vFkok (OR)**

fuEu lkj.kh e dN Nk=ksa d ikIrkdksa dk fooj.k fn;k x;k g] vdksa dk cgyd Kkr dhft , & ¼4½

vdksa	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 sstudents, calculate the mode-

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

i'u 14& idk'k l'y"k.k ij iHkko Mkyus oky dkjdksa dk l{ki e fyf[k, A ¼4½

Write factors affecting Photo Synthesis, in brief.

^^vFkok (OR)**

idk'k l'y"k.k dh vidkf'kd vfHkfØ;k dk l{ki e o.ku dhft , A ¼4½

Describe in brif Dark reaction of Photo-Synthesis

i'u 15& fuEufyf[kr dk ifjHkkf"kr dhft , & ¼5½ (1x5)

¼v½ fo|qr {ks= dh rhozrk] ¼c½ fo?kVr okgd cy ¼l½ foHkokarj

¼n½ fdykokV ?k.Vk ¼b½ fo|qr ifrjks/k

Define Following -

(a) Intensity of Electric field (b) Electro motive force

(c) Potential difference (d) Kilowatt hour (e) Electric resistance

^^vFkok (OR)**

fuEufyf[kr dk ifjHkkf"kr dhft, &

¼v½ vke ¼c½ okYV ¼l½ ,Eih;j ¼n½ dyke

¼b½ fo|r jklk;fud rY;kd

Difine following:-

(a) Ohm (b) Volt (c) Ampere (d) Coulom

(e) Electro-Chemical equivalance..

i'u 16& 'khj l vYdkgy cuku dh fof/k dk foLrkj iod le>kb; A

Explain formation of Alcohol from Malasses, in detail.

^^vFkok (OR)**

LVkp l vYdkgy fuek.k dh fof/k dk o.ku fuEu 'kh"kdk e dhft, & ¼5½

¼v½ 'kdjhdj.k] ¼c½ fd.Mou] ¼l½ ifj'kk/ku

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

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

i'u 17& fuEufyf[kr lkj.kh l ekud fopyu Kkr dhft, & ¼5½

ox 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 intervel:	0&10	10&20	20&30	30&40	40&50
Frequency:	3	5	9	6	2

^^vFkok (OR)**

fuEufyf[kr lkj.kh l ek/; fopyu Kkr dhft, &

Find the mean deviation from the following data -

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

i'u 18& lkyulh dy dk fuEu 'kh"kdk e o.ku dhft, & (1½x4)

¼v½ dy d fo'k"V y{k.k ¼pkj½

¼c½ vkfFkd egRo ¼4 ik/kk d okuLifrd uke½

¼l½ i"i l= ¼n½ i"i 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)**

ekyoh dy dk o.ku fuEu 'kh"kdk e dhft, &

¼v½ dy d fo'k"V y{k.k ¼pkj½

¼c½ vkfFkd egRo ¼4 ik/kk d okuLifrd uke½

¼l½ i"i l= ¼n½ 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.

i'u 19& j'ke dhV dh fofHkUu voLFkkvk dk lfp= o.ku djr g, j'ke d pkj mi;kx fyf[k, & ¼4$2½

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

^^vFkok (OR)**

e/keD[kh d thou pØ dh fofHkUu voLFkkvk dk lfp= o.ku djr g, pkj itkfr;k d oKkfud uke fyf[k, A ¼4$2½

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

&&00&&

d{kk 12oh

fo"k;& Ñf"k foKku d rRo ,o xf.kr

^^lEiy mRrj**

mRrj 1&¼v½ **oLrfu"V i'u** (1x5)

(i) & n

(ii) & c

(iii) & c

(iv) & l

(v) & l

¼c½ **fjDr LFkku** (1x5)

(i) fV'kdYpj

(ii) cgxf.krk

(iii) foilu

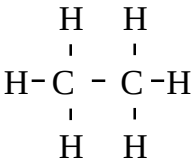
(iv) dhVk

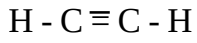
(v) *ylhQj yDdk*

mRrj 2& l;xg.k iMrk gA vekoL;k d fnu l;xg.k iMrk gA ¼1$1½

l; &&&& pUnek && iFoh

mRrj 3& ,Fku C_2H_6 ,lhfVyhu C_2H_2 ¼1$1½





mRrj 4&¼1½ ;g cM ink ij iHkkfor ugh gkrh gA ¼1$1½

¼2½ bldk ifjdyu ljy gA

mRrj 5& Ebr $\oplus$ $\mathrm{K}_{(5)}$ C_5A_5 $\mathrm{G}_{(2)}$ (2)

mRrj 6&¼1½ ;g jkf=pj rFkk fnupj g A (½x4)

¼2½ e[kkx pHkkku vkj p"ku oky g A

¼3½ mnj e 4 l 9 rd gh [k.M A

¼4½ ek= ,d tkMh ¼nk½ i[k gkr g A f>Yyhnkj ,o ikjn'kd e/; o{k e A

mRrj 7& vko/ku {kerk & ifrfcc }kjk fufer n'ku&dk.k vkj Li"V nf"V dh U;ure njh ij j[kh oLr }kjk fufer n'ku dk.k d vuikr dk l{en'kh dh vko/ku {kerk dgr g A ¼1$2½

$$\text{vko/ku {kerk} = \frac{\text{ifrfcc }\}kjk\ fufer\ n'ku\ dk.k}{\text{Li"V nf"V dh U;ure njh ij fLFkr oLr }\}kjk\ fufer\ n'ku\ dk.k}}$$

mRrj 8&¼1½ ;g xl [kkuk cuku d fy, b/ku d :i e A (1x3)

¼2½ jk'kuh dju fctyh ink dju A

¼3½ Mhty btu pyku d fy, A

¼4½ mRre [kkn d :i e A

mRrj 9& ox dh Hktk = 32 leh (1½+1½)

vr% ox dk {k=Qy = Hktk^2

= 32^2 ox leh = 1024 ox leh

rFkk ox d fod.k dh yckb = ox dh Hktk $\times\sqrt{2}$

= $32\sqrt{2}$ leh-

mRrj 10& bl fu;e d vulkj tc ,d tkMk foijhr y{k.kk dk /;ku e j[kdj Økl djk;k tkrk g rk ldj F_1 ih<h e nkuk y{k.k fo|eku gkr g A ; y{k.k F_2 ih<h e iFkd gk tkr g A ;gh iFkddj.k dk fu;e dgykrk g A ¼1$2½

¼'k) yck½ TTxtt ¼'k) ckuk½

↓

→ F_1 T t ¼v'k) yck½

Tt x Tt → Loijkx.k

F_2 →	T	t
T	TT ¼'k) yck½	Tt ¼v'k) yck½
t	Tt ¼v'k) yck½	tt ¼'k) ckuk½

mRrj 11& tc 'or idk'k fdj.kk dk fiTe e l xtkjk tkrk g rk idk'k lkr jxk e cV tkrk g] bl idkj ikIr jxk d leg dk o.kØe dgr g A ¼1$2½

okLrfod o.kØe	vkHkkl h o.kØe
1- bl in ij ikIr fd;k tk l drk g A	1- bl in ij ikIr ugh fd;k tk l drkA
2- ble cxuh fiTe d vk/kkj dh vkj rFkk yky jx Åij dh vkj gkrk g A	2- ble cxuh jx Åij dh vkj rFkk yky jx vk/kkj dh vkj gkrk g A
3- jxk dk Øe l h/kk gkrk g A	3- jxk dk Øe mYVk gkrk g A

^^vFkok**

iVky btu	Mh ty btu
1- bldh n{krk Mh ty btu l de gkrh g A	1- bldh n{krk iVky btu l vf/kd gkrh g A
2- bl btu e iVky dh ok"i rFkk ok; dk;dkjh inkFk gkrk g A	2- ble Mh ty b/ku rFkk ok; dk;dkjh inkFk gkrk g A
3- ble foLQkV gku dk Mj gkrk g A	3- foLQkV gku dk Mj ugh gkrk g A
4- Likd lyx gkrk g A	4- ble vk;y iEi gkrk g A

mRrj 12& eykuikrh l= Kkr djuk & ¼4½

gy& ;kfxd e C = 48.66%, H = 8.11%

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

O = 43.23%

rRo	ifr'krrk	ijek.k Hkkj	vkif{kd l[;k	ijek.kvk dk ljyre vuikr
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% ;kfxd dk eykuikrh l= ¾ $C_3H_6O_2$ g A

^^vFkok^^

C = 65.73, H = 15.6, N = 19.21

rRo	ijek.k Hkkj	ifr'kr ek=k	vkif{kd l[;k	ijek.kvk dk ljyre vuikr
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% ;kfxd dk eykuikrh l= ¾ $C_4H_{11}N$ g A

mRrj 13& ½2$1$1½

vk; o"kk e	jkfx;k dh l[;k F	e/; eY; 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

lekrj ek/; ¾ $\frac{E \times F}{EF}$

¾ $\frac{995}{25}$

lekrj ek/; ¾ 39-8

^^vFkok^^

cgyd Kkr dhft, & ½2$1$1½

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

vf/kdre vkofÙk 20 g blfy, cgyd ox ¾ 20&30

cgyd ¾ $L_1+\frac{F-F_1}{2F-F_1-F_2}(L_2-L_1)$

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

$$Mo=20+\frac{20-12}{2\times20-12-9}(30-20)$$
$$=20+\frac{8}{40-21}(10)$$
$$=20+\frac{80}{19}$$
$$=20+4.21$$

cgyd ¾ 24-21

mRrj 14& **dkjd&** (1x4)

¼1½ idk'k & idk'k dh vf/kd rhork e idk'k l'y"k.k dh nj de gk tkrh g] ifrfnu 10&12 ?k.V idk'k i;kIr gkrk g] DykfQy lcl vf/kd uhy rFkk yky rjx n/;k dk vo'kkf"kr djrk g A

¼2½ CO_2 dh lkUnrk& lkeU;rk CO_2 dh ek=k c<kb tkrh g rk idk'k l'y"k.k dh nj ck< tkfr g A

¼3½ rkiØe& vf/kdk'krh ik/kk e rkiØe] yxHkx 35°C rFkk vf/kdre 45°C ij idk'k l'y"k.k lpk: gkrk g A

¼4½ ty& ;g idk'k l'y"k.k ij ijk{k iHkko Mkyrk g] ty dh deh gku ij ik/kk e idk'k l'y"k.k dh xfr de gk tkrh g A

^^vFkok

vidkf'k; vfHkfØ;k &

;g vfHkfØ;k v/kdkj e gkrh g] LVkek e gkrh g] ble CO_2, ATP dh lgk;rk l $NADPH_2$ d }kjk vipf;r gkdj 'kdjk] LVkp vkfn cur g A

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

mRrj 15& **ifjHkk"kk,¡ &** (1x5)

¼v½ **fo|r {k= dh rhork&** fo|r {k= d fdlh fcUn ij o-{k- dh rhork ml fcUn ij j[k x; ,dkd /ku vko'k ij yxu oky cy d cjkcj gkrh g A

¼c½ **fo|r okgd cy&** tc ly [ky ifjiFk e gkrh g rk mld /kok d e/; vf/kdre foHkokUrj dk ly dk fo|r okgd cy dgr g A

¼l½ **foHkokUrj**& fo|r ifjiFk e fdUgh nk fcUnvk d chp foHko d vrj dk] foHkokurj dgr g A

¼n½ **fdykokV ?k.Vk&** ,d fdykokV ?k.Vk] fo|r Åtk dh og ek=k g tk ,d fdykokV dh fo|r 'kfDr oky ifjiFk e ,d ?k.V e 0;; gkrh g A

¼b½ **ifrjk/k&** ;g fdlh pkyd dk og x.k g tk fo|r /kkjk d iokg e :dkoV mRiUu djrk g A

^^vFkok**

¼v½ **vke&** ;g ifrjk/k dk ek=d g] ;fn pkyd e flVk ij 1 okYV dk foHkokUrj yxku ij mle iokfgr gku okyh /kkjk 1 ,fEi;j gk rk pkyd dk ifrjk/k 1 vke gkxk A

¼c½ **okYV&** ;fn fdlh fo|r ifjiFk e 1 dyke vko'k dk pyku e 1 ty Åtk 0;; gkrh g rk ml ly dk fo|r okgd cy 1 okYV gkrk g A

¼l½ **,Eih;j&** ;g fo|r /kkjk dh bdkb g A fdlh i fjiFk e 1 ld.M e iokfgr gku oky vko'k dh ek=k 1 dyke gk rk fo|r /kkjk 1 ,fEi;j gkxh A

¼n½ **dyke&** ;g vko'k dk ek=d g] 1 dyke og vko'k g tk fuokr@ok; e 1 ehVj nj j[k viu gh leku rFkk cjkcj vko'k dk $9x10^9$ U;Vu d cy l ifrdf"kr djrk g A

¼b½ **fo|r jlk;fud rY;kd&** fdlh inkFk dk o|r jklk;fud rY;kd mldk og n0;eku g tk ml inkFk d fdlh fo|r vi?kVl e 1 dyke vko'k iokfgr dju ij eDr gkrk g A

mRrj 16& **'khj l vYdkgy fuek.k &** ¼5½

¼1½ **rudj.k&** 'khj e ty feykdj 'kdjk dk rudj.k fd;k tkrk g ftl lknrk 8&10 ifr'kr jg tk, A bl foy;u e FkkMk ru H_2SO_4] vkfu;e lYQV] ;hLV feykdj foy;u dk 20^0C-30^0C rki ij Vfd;k e Hkj nr g A

¼2½ **fd.ou&** bUoVt ,Utkbe lØkt dk Xydkt ,o ÝDVkt e cny nrk g ,o tkbet Xydkt] ÝDVkt dk ,fFky vYdkgy e ijfofrr dj nrk 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 lknrk okyk vYdkgy ikIr gkrk g] ftl ok'k dgr gA

¼3½ **vklou&** dkQ HkHkd }kjk vklou djr g ble nk Hkkx fo'y"kd ,o ifj'kk/kd gkr g A bl fØ;k l 90 ifr'kr ,fFky ,Ydkgy ikIr gkrk g A

¼4½ **ifj'k/ku&** iHkkth vklou d }kjk fd;k tkrk g A

^^vFkok**

LVkp l vYdkgy fuek.k& ¼5½

¼v½ **'kdjhdj.k&** LVkp dk ekYVkt e ifjoru] vdfjr tk dk ihl fy;k tkrk g] Nkudj ekYV fu"d"k ikIr gkrk g bl ekYV fu"d"k dgr g ble Mk;LVl fodj gkrk g A e'k ikIr dju d fy, vky] eDdk vkfn inkFk dk dpydj vfrrIr Hkki e mckyr g A yb tl k e'k e ekYV fu"d"k feydkj 53^0c rki ij j[k nr g Mk;LVl fodl LFkp dk ekYVkt e ifjofrr dj nr g A ikIr no dk okV dgr g A

$$2(C_6H_{10}O_5)_n + nH_2O \longrightarrow nC_{12}H_{22}O_{11}$$

LVkp Mk;LVt ekYVkt

¼c½ **fd.ou&** okV e [kehj feykdj 25^0c-37^0c rki ij j[k nr g ekYVt fodj ekYVkt dk Xydkt e cny nrk g A rFkk tkbet Xydkt dk vYdkgy e cny nrk g &

ekYVt

$$C_{12}H_{22}O_{11} + H_2O \longrightarrow 2C_6H_{12}O_6$$

tkbet

$$C_6H_{12}O_6 \longrightarrow 2C_2H_5OH + 2CO_2$$

mRrj 17& **ekud fopyu &** ¼2$1$1$1½

ox vrjky	vkofÛk	e/; eY; 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

lekrj ek/; $m = \frac{615}{25}$

$m = 24.6$

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 & ¼2$1$1$1½

ox	vkofÛk F	e/; eY; 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

lekUrj ek/; $m = \frac{145}{5}$

$\therefore m = 29$

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

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

$= \sqrt{117}$

mRrj 18& **lkyulh dy &** ¼2$2$1$1½

¼v½ fof'k"V y{k.k&

¼1½ ikp idlj ny yXu

½2½ vMik dh frjNh fLFkfr

¼3½ vud o cM pedhy chtkM Qy g, chtkMklu ij fLFkr

¼4½ chtk.MU;kl LrEHkh;

¼c½ vkfFkd egRo&

¼1½ vky ¼lkyue V;cjkle½

½2½ cxu ¼lkyue eykU tuk½

¼3½ fep ¼dfllde ,ue½

¼4½ rEck[k ¼fudkfV;kuk Vcde½

¼l½ i"il= &

EBr, ⊕ ♂ $K_{(5)}$ $C_{(5)}$ A_5 $G_{(2)}$

¼n½ i"ifp=

^^vFkok**

ekyolh dy& ½2$2$1$1½

¼v½ of'k"V y{k.k &

¼1½ ik/k 'kkdh;] >kMh ;k o{k

½2½ ifÙk;k ljy] vuif=d] ,dkrj

½3½ idlj vl[;] ,dl?kh;] irUr] vkil e feydj idljh uky cukr g A

¼4½ tk;kx ip v.Mih] l;Dr mÙkjorh vMk'k;] v{korh chtk.MU;kl A

¼c½ vkfFkd egRo &

¼1½ xMgy ¼fgfcLdl jktk lkbufUll½

½2½ fHkUMh ¼fgfcldl ,lD;yVl½

½3½ dikl ¼xkflfi;e Lihlht½

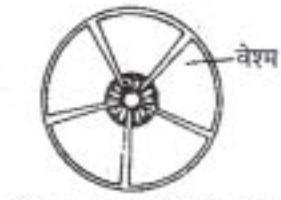
¼4½ gkyhgkd ¼vfYFk;k jkft ;k½

¼l½ i"il= &

$$\mathrm{Br\,Brl} \oplus \male \ \mathrm{Epi\,K_{3\text{-}7}\,K_{(5)}}\ \mathrm{C_2 A_\infty\ G_{(5)}}$$

¼n½ i"i fp= &

पुष्प चित्र



अण्डाशय का अनुप्रस्थ काट

mRrj 19& **j'ke dhV dh voLFkk,&** ¼4$2½

¼1½ v.Mk& eknk ifÙk;k ij 300&400 v.M nrh g v.Mk piVk] iryk] ihyk] xkykdkj gkrk g] xfe;k e v.M 10&12 fnu rFkk 'khr e 30 fnuk e v.M QVr g A NkVh bYyh fudyrh g A

½2½ bYyh& bYyh dh yEckb 3 fe-eh- o jx lQn gkrk g] o{k e rhu tkMh rFkk mnj e ikp tkMh Vkx gkrh g] bYyh 'kh?k gh ifÙk;k [kkuk ikjHk dj nrh g rFkk 4 l 5 fnu ckn iFke fuekpu djrh g pkFk fuekpu d ckn ;g vkdkj c<kdj viuh yEckb 8 l-eh- rd dj yrh g A thou dk 30&35 fnu A

¼3½ dkdu& ifjiDo bYyh [kkuk cn dj nrh g rFkk bld e[k mikx j'ke cuku oky ykj xfFk;k e fodflr gk tkr g A ;gh ykj j'ke inku djrh g] ; j'ke d /kkx bYyh d 'kjhj d pkjk vkj fpiddj j'ke lr dk fuek.k dj dkdu dk fuek.k djr g A dkdu 38 fe-eh- yEck rFkk 19 fe-eh- pkMk v.Mkdj lQn ihy jx dk gkrk g A

¼4½ l;ik& yxHkx 15 fnu e bYyh dkdu e vnj ifjo/ku dj l;ik e cny tkrk g A

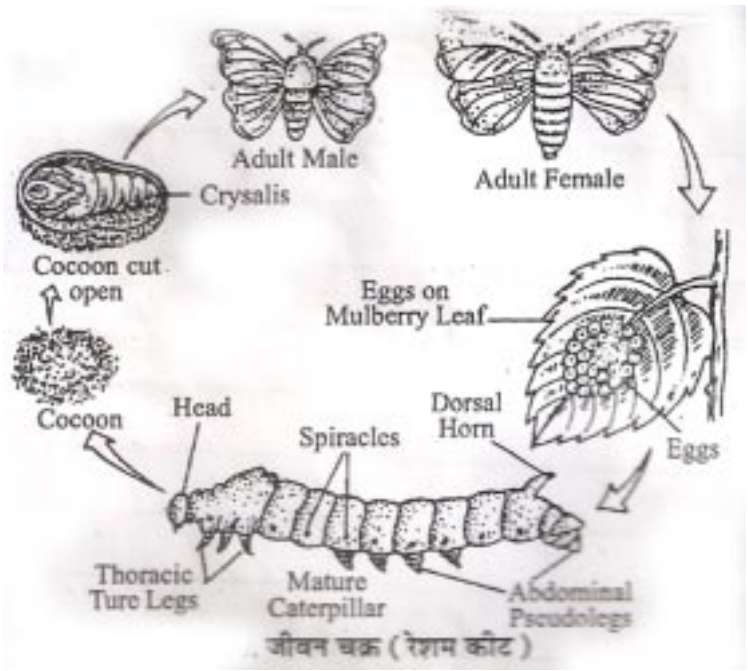
mi;kx &

¼1½ oL= cuku e A

½2½ ijk'kV cuku e A

¼3½ dk;k l ry fudkyk tkrk g ftldk mi;kx vk"kf/k;k e gkrk g A

¼4½ ikphu dky e phu e lku d lkFk oLr fofue; d :i e j'ke dk mi;kx gkrk Fkk A



&&00&&

Set - C

gk;j ld.Mjh Ldy lVhfQdV ijh{kk

Higher Secondary School Certificate Examination

lEiy&i'u i=

SAMPLE PAPER

fo"k; ¼& (Subject) - Ñf"k foKku d rRo ,o xf.kr

le; 3 ?k.Vk (Time- 3 Hrs)

d{kk ¼& (Class) - ckjgoh ¼12oh½ **i.kkd 75 (M.M.)**

(Instruction) & ¼fun'k½

1- lHkh i'u gy djuk vfuok;g A
Attempt all the Question

2- i'u Øekd 01 e 10 vd fu/kkfjr g A nk dky[k.M g A [k.M ^^v** e 05 cgfodYih; i'u rFkk [k.M ^^c** e 05 fjDr LFkkuk dh ifr vFkok mfpr lc/k tkfM, A iR;d i'u d fy, 1 vd vkcfVr g A
Q. No. 01 Carries 10 Marks. There are two sub-section, Section A is Multiple choice carries 05 marks and section B is fill in the blanks or match the column carries 05 marks.

3- i'u Øekd 02 l i'u Øekd 06 rd vfr y?kmRrjh; i'u g A iR;d i'u ij 02 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 30 'kCn A
Q. No. 02 to 06 are very short answer type question & carries 02 marks each. Word limit is maximum 30.

4- i'u Øekd 07 l i'u Øekd 10 rd y?kmRrjh; i'u g A iR;d i'u ij 03 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 50 'kCn A
Q. No. 07 to 10 are short answer type question & carries 03 marks each. Word limit is maximum 50.

5- i'u Øekd 11 l i'u Øekd 14 rd y?kmRrjh; i'u g A iR;d i'u e vkrfjd fodYi g vkj iR;d i'u ij 04 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 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- i'u Øekd 15 l i'u Øekd 17 rd nh?kmRrjh; i'u g A iR;d i'u e vkrfjd fodYi g vkj iR;d i'u ij 05 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 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- i'u Øekd 18 l i'u Øekd 19 rd nh?kmRrjh; i'u g A iR;d i'u e vkrfjd fodYi g vkj iR;d i'u ij 06 vd vkcfVr g A mRrj dh vf/kdre 'kCn lhek 150 'kCn A

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

d{kk 12oh

fo"k;& Ñf"k foKku d rRo ,o xf.kr

^^lEiw.kZ i'u**

i'u 1& [k.M ¼v½ lgh fodYi pqudj fyf[k;s &

Section (A) Choose correct alternative- (1x5)

(i) fo|qr 'kfDr dh bdkbZ gS &

¼v½ ty ¼c½ okYV

¼l½ vke ¼n½ ,fEi;j

The unit of Electric Power is -

(a) Ohm (b) Ampere

(c) Jule (d) Volt

(ii) ,fFkyhu dk IUPAC uke gS &

¼v½ ,Fkuky ¼c½ ,Fkhu

¼l½ ,Fkkbu ¼n½ ikikbu

The IUPAC name of Acetylene is-

(a) Ethenol (b) Ethene

(c) Ethyne (d) Propyne

(iii) lR;k, 2] 3] 4] 5] 4] 5] 4] 7 dk cgqyd gksxk&

¼v½ 3] ¼c½ 4 ¼l½ 5 ¼n½ 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 lVkbol* dk lEc/k gS &

¼v½ yX;feukl h ¼c½ lkyuslh

¼l½ ekyoslh ¼n½ ØlhQjsh

Raphanus sativus is related to family-

(a) Legnuminoceae (b) Solanaceae

(c) Malvaceae (d) Crucifereae

(v) tho/kkjh d tks y{k.k iR;{k fn[kkbZ iMrs gSa o dgykrs gS &

¼v½ thu] ¼c½ ftukVkbi]

¼l½ fQukVkbi ¼n½ vkVkVkbi

The visual symptom of living being is called-

(a) Gene (b) Genotype

(c) Phenotype (d) Autotype

[k.M ¼c½ fjDr LFkkuk dh ifr dhft;s & ¼1x5)

Section (B) Fill in the blanks -

(i) idk'k l'y"k.k dh fØ;k e ---------- xl eDr gkrh g &

..... Gas is released in the process of Photosynthesis

(ii) Xyk;dkfyfll d vr e ---------- d nk v.k cur g A

Two molecules of ..... are formed in the end of Glycolysis.

(iii) ,Fkkby vYdkgy ---------- 'olu e curk g A

Ethyle Alchohol is formed in ..... respiration.

(iv) j'ke mRiknu d v/;;u dk ---------- dgr g A

The study of silk production is called ..... .

(v) lokf/kd ijkx.k ---------- dhV d }kjk gkrk g A

Most of pollination is performed by ..... Insect.

i'u 2& tc 'or idk'k dh fdj.kk dk fiTe e l xtkjk tkrk g rk dku lh ?kVuk gkrh g A Li"V dhft, A ¼2½

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

i'u 3& vfFky vYdkgy ,o cthu dk ljpuk l= fyf[k, A ¼1$1½

Write structrual formula of Ethyl Alchohol and Bengene.

i'u 4& cgyd d nk x.k fyf[k, A ¼1$1½

Write any two properties of Mode.

i'u 5& ØlhQjh dy dk i"i l= fyf[k, A ¼2½

Write Floral Formula of Crucifereae.

i'u 6& x.k&dkfyvkIVjk d pkj y{k.k fyf[k, A ¼2½

Write any four charaters of order-Coleoptera.

i'u 7& ifjHkk"kk fyf[k, & ¼1x3½

¼v½ yl dh Qkdl njh] ¼c½ e[; Qkdl]

¼l½ idk'k dUn

Define Following -

(a) Focal length of lens (b) Main focus of lens,

(c) Optical center of lens

i'u 8& ,Fkhyhu d mi;kx fyf[k, A ¼1x3½

Write uses of ethelene.

i'u 9& ,d ox dk {k=Qy 225 ox l-eh- g rk ox dk ifjeki Kkr dhft, A ¼3½

The area of a square is 225 square centimeter find its peripheri.

i'u 10& VLV Økl ,o cd Økl dk mnkgj.k }kjk Li"V dhft, A ¼1½+1½½

Clarify Test cross and Back cross by suitable examples.

i'u 11& o.k Øe dk vk'k; Li"V djr g,] okLrfod ,o vkHkklh o.kØe e vrj fyf[k,A ¼1$3½

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

^^vFkok^^ (OR)

Mhty ,o iVky btu e vrj fyf[k, A (1x4)

Write difference between Petrol and Diesel engine.

i'u 12& ,d dkcfud ;kfxd e dkcu 48-66% rFkk gkbMkt tu 8-11% g rk] ;kfxd dk eykuikrh l= Kkr dhft, & ¼4½

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

^^vFkok^^ (OR)

,d dkcfud ;kfxd d dkcu 65-73%, gkbMkt tu 15-6% rFkk ukbVkt tu 19-21% g rk ;kfxd dk eykuikrh l= Kkr dhft, A ¼4½

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

i'u 13& ,d lo{k.k e fuEufyf[kr vkdM ikIr g, & ¼4½

vk;q o"kZ e	10&20]	20&30]	30&40]	40&50]	50&60]	60&70
jksfx;ksa dh l[;k	3	2	5	11	3	1

vkdMksa d lekUrj ek/; dh x.kuk dhft ; A

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.

^^vFkok (OR)**

fuEu lkj.kh e dN Nk=ksa d ikIrkadksa dk fooj.k fn;k x;k g] vdksa dk cgyd Kkr dhft , & ¼4½

vad	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

i'u 14& idk'k l'y"k.k ij iHkko Mkyus oky dkjdksa dk l{ksi e fyf[k, A ¼4½

Write factors affecting Photo Synthesis, in brief.

^^vFkok (OR)**

idk'k l'y"k.k dh vidkf'kd vfHkfØ;k dk l{ksi e o.kZu dhft , A ¼4½

Describe in brif Dark reaction of Photo-Synthesis

i'u 15& fuEufyf[kr dk ifjHkkf"kr dhft , & ¼5½ (1x5)

¼v½ fo|qr {ks= dh rhozrk] ¼c½ fo?kVr okgd cy ¼l½ foHkokarj

¼n½ fdyksokV ?k.Vk ¼b½ fo|qr ifrjks/k

Define Following -

(a) Intensity of Electric field (b) Electro motive force

(c) Potential difference (d) Kilowatt hour (e) Electric resistance

^^vFkok (OR)**

fuEufyf[kr dk ifjHkkf"kr dhft, &

¼v½ vke ¼c½ okYV ¼l½ ,Eih;j ¼n½ dyke

¼b½ fo|r jklk;fud rY;kd

Difene following:-

(a) Ohm (b) Volt (c) Ampere (d) Coulom

(e) Electro-Chemical equivalance.

i'u 16& 'khj l vYdkgy cuku dh fof/k dk foLrkj iod le>kb; A

Explain formation of Alcohol from Malasses, in detail.

^^vFkok (OR)**

LVkp l vYdkgy fuek.k dh fof/k dk o.ku fuEu 'kh"kdk e dhft, & ¼5½

¼v½ 'kdjhdj.k] ¼c½ fd.Mou] ¼l½ ifj'kk/ku

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

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

i'u 17& fuEufyf[kr lkj.kh l ekud fopyu Kkr dhft, & ¼5½

ox 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 intervel:	0&10	10&20	20&30	30&40	40&50
Frequency:	3	5	9	6	2

^^vFkok (OR)**

fuEufyf[kr lkj.kh l ek/; fopyu Kkr dhft, &

Find the mean deviation from the following data -

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

i'u 18& lkyulh dy dk fuEu 'kh"kdk e o.ku dhft, & (1x4)

¼v½ dy d fo'k"V y{k.k ¼pkj½

¼c½ vkfFkd egRo ¼4 ik/kk d okuLifrd uke½

¼l½ i"i l= ¼n½ i"i fp=

Describe the family Solanaceae in following points-

(a) Distinguish characteristics (Four)

(b) Economic importance (Botanical name of any four plants)

(c) Floral formula (d) Floral diagram.

^^vFkok^^ (OR)

ekyolh dy dk o.ku fuEu 'kh"kdk e dhft, &

¼v½ dy d fo'k"V y{k.k ¼pkj½

¼c½ vkfFkd egRo ¼4 ik/kk d okuLifrd uke½

¼l½ i"i l= ¼n½ i"i 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.

i'u 19& j'ke dhV dh fofHkUu voLFkkvk dk lfp= o.ku djr g, j'ke d pkj mi;kx fyf[k, & ¼4$2½

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

^^vFkok^^ (OR)

e/keD[kh d thou pØ dh fofHkUu voLFkkvk dk lfp= o.ku djr g, pkj itkfr;k d oKkfud uke fyf[k, A ¼4$2½

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

&&00&&

d{kk 12oh

fo"k;& Ñf"k foKku d rRo ,o xf.kr

^^lEiy mRrj**

mRrj 1&¼v½ **oLrfu"V i'u** (1x5)

(i) & c

(ii) & c

(iii) & c

(iv) & n

(v) & l

¼c½ **fjDr LFkku** (1x5)

(i) vkDlhtu

(ii) ik;:fod vEy

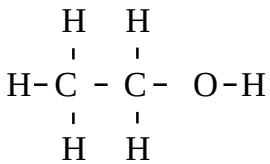
(iii) vukDlh 'olu

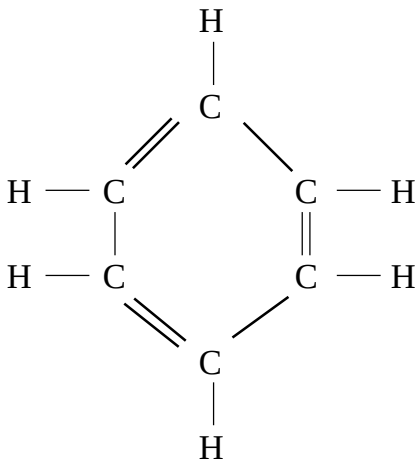
(iv) ljhdYpj

(v) e/keD[kh

mRrj 2& tc 'or idk'k fdlh fiTe e l xtjrk g rk ;g fiTe d vk/kkj dh vkj >du d lkFk&lkFk lkr jxk d idk'k e cV tkrk g A bl idkj ikIr jxk d leg dk o.kØe rFkk 'or idk'k d viu vo;oh jxk e foHkDr gku dh fØ;k dk ^^o.k fo{ki.k** dgr g ½2½

mRrj 3& ,fFky vYdkgy cthu ¼1$1½





mRrj 4&¼1½ bl le>uk ,o x.kuk ljy g A ¼1$1½

½2½ ik;k fujh{k.k ek= l gh Kkr fd;k tk ldrk g A

mRrj 5& Ebr ⊕ ♂ $K_{Z+2}\ C_{x\,4}\ A_{Z+4}\ G_{(2)}$ (2)

mRrj 6&¼1½ ok;oh; rFkk Hkfexr gkr g A (½x4)

½2½ 'kjhj D;Vhdy d ekV vkoj.k l <dk jgrk g A

¼3½ e[kkx pHkkku oky gkr g A

¼4½ dN i[kjfgr rk dN e dM i[k gkr g A fiNyh tkMh i[k gh dM gkr g A

mRrj 7&¼v½ idk'k dUn vkj f}rh; e[; Qkdl d chp dh njh dk gh yUl dh Qkdl njh dgr g A (1x3)

¼c½ yUl d e[; v{k ij fLFkr og fcn ft l ij fLFkr e[; v{k d lekUrj idk'k fdj.k yl l vioru d i'pkr ,df=r gkrh g ;k ,df=r gkrh gb irhr gkrh g ^e[; Qkdl** ;k f}rh; Qkdl dgykrk g A

¼l½ idk'k dUn & yl d vnj og fcn ft ll gkdj tku okyh idk'k dh fdj.k fcuk viu ekx l fopfyr g, lh/kh pyh tkrh g] idk'k dUn dgykrk g A

mRrj 8&¼1½ eLVM xl cuku e A (1x3)

½2½ lykfLVd m|kx e A

¼3½ fu'prd d :i e A

mRrj 9& ,d ox dh Hkktk x leh g rc ¼3½

ox dk {k=Qy ¾ Hkktk² & x² ox leh

ox dk {k=Qy ¾ 225 ox leh x²¾ 225

$x - \sqrt{225} = 15$

ox dh Hkktk ¾ x leh ¾ 15 leh

ox dk ifjeki ¾ 4 x ox dh Hkktk

¾ 4 x 15 leh ¾ 60 leh A

mRrj 10& **Test Cross** & viHkkoh tud d lkFk cd Økl ft ll ;g irk yxrk g fd vKkr vkuof'kd tho le;Xeth ;k fo"k; ;Xeth] dk ijh{k.k ldj.k (Test cross) dgr g A (1½+1½)

T T x t t

F_1 T t

T t x t t

T t : t t in ratio of 1 : 1

Back Cross & tc fdlh ldj ;k fdlh Hkh tud l ldjhdj.k djk;k tk; rk cd Økl dgr g A

T T x t t

T t F_1 ¼ldj½

T t x T T - tud

;k T t x t t - tud

mRrj 11& tc 'or idk'k fdj.kk dk fiTe e l xtkjk tkrk g rk idk'k lkr jxk e cV tkrk g] bl idkj ikIr jxk d leg dk o.kØe dgr g A ¼1$2½

	okLrfod o.kØe		vkHkklh o.kØe
1-	bl in ij ikIr fd;k tk ldrk g A	1-	bl in ij ikIr ugh fd;k tk ldrk A
2-	ble cxuh fiTe d vk/kkj dh vkj rFkk yky jx Åij dh vkj gkrk g A	2-	ble cxuh jx Åij dh vkj rFkk yky jx vk/kkj dh vkj gkrk g A
3-	jxk dk Øe lh/kk gkrk g A	3-	jxk dk Øe mYVk gkrk g A

^^vFkok**

	iVky btu		Mhty btu
1-	bldh n{krk Mhty btu l de gkrh g A	1-	bldh n{krk iVky btu l vf/kd gkrh g A
2-	bl btu e iVky dh ok"i rFkk ok; dk;dkjh inkFk gkrk g A	2-	ble Mhty b/ku rFkk ok; dk;dkjh inkFk gkrk g A
3-	ble foLQkV gku dk Mj gkrk g A	3-	foLQkV gku dk Mj ugh gkrk g A

4- Likd lyx gkrk g A 4- ble vk;y iEi gkrk g A

mRrj 12& eykuikrh l= Kkr djuk & ¼4½

gy& ;kfxd e C = 48.66%, H = 8.11%

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

O = 43.23%

rRo	ifr'krrk	ijek.k Hkkj	vkif{kd l[;k	ijek.kvk dk ljyre vuikr
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% ;kfxd dk eykuikrh l= ¾ $C_3H_6O_2$ g A

^^vFkok

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

rRo	ijek.k Hkkj	ifr'kr ek=k	vkif{kd l[;k	ijek.kvk dk ljyre vuikr
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% ;kfxd dk eykuikrh l= ¾ $C_4H_{11}N$ g A

mRrj 13& ¼2$1$1½

vk; o"kk e	jkfx;k dh l[;k F	e/; eY; 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

lekrj ek/; ¾ $\frac{E \times F}{EF}$

¾ $\frac{995}{25}$

lekrj ek/; ¾ 39-8

^^vFkok**

cgyd Kkr dhft, & ½2$1$1½

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

vf/kdre vkofÙk 20 g blfy, cgyd ox ¾ 20&30

cgyd ¾ $L_1 + \frac{F - F_1}{2F - F_1 - F_2}(L_2 - L_1)$

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

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

cgyd ¾ 24-21

mRrj 14& **dkjd&** (1x4)

½1½ idk'k & idk'k dh vf/kd rhork e idk'k l'y"k.k dh nj de gk tkrh g] ifrfnu 10&12 ?k.V idk'k i;kIr gkrk g] DykfQy lcl vf/kd uhy rFkk yky rjx n/;k dk vo'kkf"kr djrk g A

½2½ CO_2 dh lknrk& lkeU; rk CO_2 dh ek=k c<kb tkrh g rk idk'k l'y"k.k dh nj ck< tkfr g A

½3½ rkiØe& vf/kdk'kr% ik/kk e rkiØe] yxHkx 35°C rFkk vf/kdre 45°C ij idk'k l'y"k.k lpk: gkrk g A

½4½ ty& ;g idk'k l'y"k.k ij ijk{k iHkko Mkyrk g] ty dh deh gku ij ik/kk e idk'k l'y"k.k dh xfr de gk tkrh g A

^^vFkok**

vidkf'k; vfHkfØ;k &

;g vfHkfØ;k v/kdkj e gkrh g] LVkek e gkrh g] ble CO_2, ATP dh lgk;rk l $NADPH_2$ d }kjk vipf;r gkdj 'kdjk] LVkp vkfn cur g A

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

mRrj 15& **ifjHkk"kk,¡ &** (1x5)

¼v½ fo|r {k= dh rhork& fo|r {k= d fdlh fcUn ij o-{k- dh rhork ml fcUn ij j[k x; ,dkd /ku vko'k ij yxu oky cy d cjkcj gkrh g A

¼c½ fo|r okgd cy& tc ly [ky ifjiFk e gkrh g rk mld /kok d e/; vf/kdre foHkokUrj dk ly dk fo|r okgd cy dgr g A

¼l½ foHkokUrj& fo|r ifjiFk e fdUgh nk fcUnvk d chp foHko d vrj dk] foHkokurj dgr g A

¼n½ fdykokV ?k.Vk& ,d fdykokV ?k.Vk] fo|r Åtk dh og ek=k g tk ,d fdykokV dh fo|r 'kfDr oky ifjiFk e ,d ?k.V e 0;; gkrh g A

¼b½ ifrjk/k& ;g fdlh pkyd dk og x.k g tk fo|r /kkjk d iokg e :dkoV mRiUu djrk g A

^^vFkok**

¼v½ vke& ;g ifrjk/k dk ek=d g] ;fn pkyd e flVk ij 1 okYV dk foHkokUrj yxku ij mle iokfgr gku okyh /kkjk 1 ,fEi;j gk rk pkyd dk ifrjk/k 1 vke gkxk A

¼c½ okYV& ;fn fdlh fo|r ifjiFk e 1 dyke vko'k dk pyku e 1 ty Åtk 0;; gkrh g rk ml ly dk fo|r okgd cy 1 okYV gkrk g A

¼l½ ,Eih;j& ;g fo|r /kkjk dh bdkb g A fdlh i fjiFk e 1 ld.M e iokfgr

gku oky vko'k dh ek=k 1 dyke gk rk fo|r /kkjk 1 ,fEi;j gkxh A

¼n½ **dyke&** ;g vko'k dk ek=d g] 1 dyke og vko'k g tk fuokr@ok;e 1 ehVj nj j[k viu gh leku rFkk cjkcj vko'k dk $9x10^9$ U;Vu d cy l ifrdf"kr djrk g A

¼b½ **fo|r jlk;fud rY;kd&** fdlh inkFk dk o|r jklk;fud rY;kd mldk og n0;eku g tk ml inkFk d fdlh fo|r vi?kVl e 1 dyke vko'k iokfgr dju ij eDr gkrk g A

mRrj 16& **'kkj l vYdkgy fuek.k &** ¼5½

¼1½ **rudj.k&** 'kkj e ty feykdj 'kdjk dk rudj.k fd;k tkrk g ftll lknrk 8&10 ifr'kr jg tk, A bl foy;u e FkkMk ru H_2SO_4] vekfu;e lYQV] ;kLV feykdj foy;u dk 20^0C-30^0C rki ij Vfd;k e Hkj nr g A

¼2½ **fd.ou&** bUoVt ,Utkbe lØkt dk Xydkt ,o ÝDVkt e cny nrk g ,o tkbet Xydkt] ÝDVkt dk ,fFky vYdkgy e ijfofrr dj nrk 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 lknrk okyk vYdkgy ikIr gkrk g] ftl ok'k dgr gA

¼3½ **vklou&** dkQ HkHkd }kjk vklou djr g ble nk Hkkx fo'y"kd ,o ifj'kk/kd gkr g A bl fØ;k l 90 ifr'kr ,fFky ,Ydkgy ikIr gkrk g A

¼4½ **ifj'k/ku&** iHkkth vklou d }kjk fd;k tkrk g A

^^vFkok**

LVkp l vYdkgy fuek.k& ¼5½

¼v½ **'kdjhdj.k&** LVkp dk ekYVkt e ifjoru] vdfjr tk dk ihl fy;k tkrk g] Nkudj ekYV fu"d"kk ikIr gkrk g bl ekYV fu"d"k dgr g ble Mk;LVl fodj gkrk g A e'k ikIr dju d fy, vky] eDdk vkfn inkFk dk dpydj vfrrlr Hkki e mckyr g A yb tlk e'k e ekYV fu"d"k feydkj 53^0c rki ij j[k nr g Mk;LVl fodl LFkp dk ekYVkt e ifjofrr dj nr g A ikIr no dk okV dgr g A

$$2(C_6H_{10}O_5)_n + nH_2O \longrightarrow nC_{12}H_{22}O_{11}$$

LVkp Mk;LVt ekYVkt

¼c½ **fd.ou&** okV e [kehj feykdj 25^0c-37^0c rki ij j[k nr g ekYVt fodj ekYVkt dk Xydkt e cny nrk g A rFkk tkbet Xydkt dk vYdkgy e cny nrk g &

ekYVt

$$C_{12}H_{22}O_{11} + H_2O \longrightarrow 2C_6H_{12}O_6$$

tkbet

$$C_6H_{12}O_6 \longrightarrow 2C_2H_5OH + 2CO_2$$

mRrj 17& **ekud fopyu &** ¼2$1$1$1½

ox vrjky	vkofÙk	e/; eY; 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

lekrj ek/; $m = \frac{615}{25}$

$$m = 24.6$$

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 & ¼2$1$1$1½

ox	vkofUk F	e/; eY; 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

lekUrj ek/; $m = \frac{145}{5}$

$\therefore m = 29$

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

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

$= \sqrt{117}$

mRrj 18& **lkyulh dy &** ¼2$2$1$1½

¼v½ fof'k"V y{k.k&

¼1½ ikp idlj ny yXu

¼2½ vMik dh frjNh fLFkfr

¼3½ vud o cM pedhy chtkM Qy g, chtkMklu ij fLFkr

¼4½ chtk.MU;kl LrEHkh;

¼c½ vkfFkd egRo&

¼1½ vky ¼lkyue V;cjkle½

¼2½ cxu ¼lkyue eykUtuk½

¼3½ fep ¼dfllde ,ue½

¼4½ rEck[k ¼fudkfV;kuk Vcde½

¼l½ i"il= &

EBr, ⊕ ♂ $K_{(5)}$ $C_{(5)}$ A_5 $G_{(2)}$

¼n½ i"ifp=

^^vFkok**

ekyoh dy& ½2$2$1$1½

¼v½ of'k"V y{k.k &

¼1½ ik/k 'kkdh;] >kMh ;k o{k

½2½ ifÙk;k ljy] vuif=d] ,dkrj

½3½ idlj vl[;] ,dl?kh;] irUr] vkil e feydj idljh uky cukr g A

¼4½ tk;kx ip v.Mih] l;Dr mÙkjorh vMk'k;] v{korh chtk.MU;kl A

¼c½ vkfFkd egRo &

¼1½ xMgy ¼fgfcLdl jktk lkbufUl l½

½2½ fHkUMh ¼fgfcldl ,lD;yVl½

¼3½ dikl ¼xkflfi;e Lihlht½

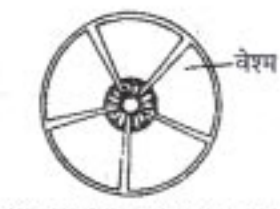
¼4½ gkyhgkd ¼vfYFk;k jkft ;k½

¼l½ i"il= &

$$\text{Br Brl} \oplus \varphi \text{ Epi } K_{3\text{-}7}\, K_{(5)}\, \mathcal{C}_2 A_\infty\, G_{(5)}$$

¼n½ i"i fp= &

पुष्प चित्र



अण्डाशय का अनुप्रस्थ काट

mRrj 19& **j'ke dhV dh voLFkk,&**

¼1½ v.Mk& eknk ifÙk;k ij 300&400 v.M nrh g v.Mk piVk] iryk] ihyk] xkykdkj gkrk g] xfe;k e v.M 10&12 fnu rFkk 'khr e 30 fnuk e v.M QVr g A NkVh bYyh fudyrh g A

¼2½ bYyh& bYyh dh yEckb 3 fe-eh- o jx lQn gkrk g] o{k e rhu tkMh rFkk mnj e ikp tkMh Vkx gkrh g] bYyh 'kh?k gh ifÙk;k [kkuk ikjHk dj nrh g rFkk 4 l 5 fnu ckn iFke fuekpu djrh g pkFk fuekpu d ckn ;g vkdkj c<kdj viuh yEckb 8 l-eh- rd dj yrh g A thou dk 30&35 fnu A

¼3½ dkdu& ifjiDo bYyh [kkuk cn dj nrh g rFkk bld e[k mikx j'ke cuku oky ykj xfFk;k e fodflr gk tkr g A ;gh ykj j'ke inku djrh g] ; j'ke d /kkx bYyh d 'kjhj d pkjk vkj fpiddj j'ke lr dk fuek.k dj dkdu dk fuek.k djr g A dkdu 38 fe-eh- yEck rFkk 19 fe-eh- pkMk v.Mkdj lQn ihy jx dk gkrk g A

¼4½ l;ik& yxHkx 15 fnu e bYyh dkdu e vnj ifjo/ku dj l;ik e cny tkrk g A

mi;kx &

¼1½ oL= cuku e A

¼2½ ijk'kV cuku e A

¼3½ dk;k l ry fudkyk tkrk g ftldk mi;kx vk"kf/k;k e gkrk g A

¼4½ ikphu dky e phu e lku d lkFk oLr fofue; d :i e j'ke dk mi;kx gkrk Fkk A