M.B. Patel Science College
Internal Test 2011

S.Y.BSc. Biotechnology
US03 C BT 01

Date:19/09/11 Time:2.00-5.00 pm Total Marks: 60

Q-1 Multiple Choice Question [12M]

(Note: Each question carries one mark. Attempt any 12)

1. The diameter or width of the helix in B form is _____
   a. 2.37 nm
   b. 2.55nm
   c. 1.84nm
   d. 3.17nm

2. DNA polymerase enzyme only act on _____ of deoxyribonucleotide.
   a. Monophosphate
   b. Diphosphate
   c. Triphosphate
   d. Tetraphosphate

3. 5' region of the mRNA molecule modified guanosine by
   a. 7-methyl guanosine
   b. 5-methyl guanosine
   c. 7-methyl adenosine
   d. 5-methyl adenosine

4. Integrative plasmids are also called as _____
   a. Chromosomes
   b. Epitopes
   c. Ribosomes
   d. Episomes

5. What is the size of RP4 plasmid
   a. 54mb
   b. 95mb
   c. 54kb
   d. 95kb

6. After the infection of agrobacterium tumefacians part of the Ti plasmid is integrated in plant chromosome is called as
   a. I DNA
   b. Transfer DNA
   c. T DNA
   d. All of the above

7. _____immunity is seen only in vertebrates
   a. Innate
   b. Adaptive
   c. Both
   d. none

8. The secretion of antibodies , its distribution in tissues and body fluid and manifestation of its effect of its effect is described in
   a. afferent limb
   b. central function
   c. efferent limb
   d. all of the above

9. _____immunity is not applicable for immunodeficiency
   a. innate
   b. passive
   c. native
   d. active

10. Which of the following scientists proved with their experiment that replication is by semi-discontinuous method
    a. Meselson-Stahl
    b. Avery-Mc Cleod
    c. Griffith
    d. Watson- Crick

11. The primers in the replication process of E.Coli provide
    a. 3'-OH
    b. 5'-OH
    c. Both of the above
    d. None of the above

12. The DNA synthesis always proceed in
    a. 3'-5' direction
    b. 5'-3' direction
    c. Any direction
    d. Can't say.

13. Which of the following protein is used as DNA unwinding protein
    a. Dna A
    b. Dna B
    c. Dna C
    d. Dna D

14. Which of the following sequence is the consensus sequence recognized by the Dna A protein in the Ori C
    a. TT(A/T)TNCCCC
    b. UU(A/T)UNCACC
    c. TT(A/T)TNCACC
    d. All of the above

15. Which of the following helps in relaxing the strain during the replication process
    a. Helicase
    b. Endonuclases
    c. Ligases
    d. Gyrases

Q-II Short questions [12M]

(Note: Each question carries TWO marks. Attempt any 06)

1. Draw the basic structure of nucleotide and nitrogen bases
2. Describe sn RNA
3. 'Plasmid is a best vector' justify the statement.
4. Define natural and artificial plasmids
5. What do you understand by microbial antognism
6. List the function of antibody mediated immunity
7. What are Okazaki fragments?
8. What are SSb's and what is its function.
9. What is the function of helicases
10. Characteristics of DNA pol I

Q- long questions [36M]

Note: Each question carries NINE marks. Attempt any 04)

Q3. a. Describe the Watson-Crick model of DNA
b. Write note on Avery,Mc Leod and Mc Carty experiment and what is the final outcome of the experiment.

(or)

a. Write a note on mRNA

b. Write a note on r-RNA

Q4.

a. Write a note on classification of plasmid.

b. Write a note on colE1

(or)

a. Describe Ti Plasmid

b. Give a brief account on compatibility and conjugation

Q5.

a. Compare and contrast

1. Active and Passive immunity
2. Humoral and CMI

(or)

a. Innate immunity is the first line of defence. Explain

Q6

a. Describe in detail the elongation of DNA replication in E.Coli

(or)

a. Describe the initiation of DNA replication in E.Coli

Q7.

a. Enumerate all the enzymes and their functions used in the prokaryotic replication

(or)

a. Describe in detail the rolling circle model of replication.

ALL THE BEST

M. B. Patel Science College

Internal Exam

Biotechnology

Course: US03CBT-02

Date: 20/09/2011 **Time: 2:00 PM – 5:00 PM** **Total Marks: 60**

Note:

1. Numbers to the right of the question indicating the maximum marks for the respective question.
2. Total Number of printed pages:- **03**

Que:-1 **Select the correct option for the following MCQ. (Any 12 only)** **12 X 1=12**

1 Who is considered as the "Father of Plant Tissue Culture"?

A. Murashige **B.** Skoog
C. Haberlandt **D.** White

2 Low auxin to cytokinin ratio will induce…

A. Shoot formation **B.** Root formation
C. Leaf formation **D.** All of the above

3 In the name Bt cotton, 'Bt' stands for…

A. *Bacillus thuringiensis* **B.** Bio -Technology
C. Bio-Transformation **D.** None of the above

4 Indirect embryogenesis includes…

A. Callus formation **B.** No callus formation
C. Direct organogenesis **D.** All of the above

5 pH of the MS medium is adjusted to…

A. 5.7 **B.** 7.2
C. 6.8 **D.** 4.0

6 The site of nitrogen fixation in *Cyanobacteria* is…

A. Thylakoids **B.** Heterocysts
C. Root nodules **D.** Plastids

7 Who coined the term "Totopotency"?

A. Murashige **B.** White
C. Morgan **D.** Haberlandt

8 The process of covering the compost bed with a layer of soil like material is...

A. Curing **B.** Composting
C. Spawning **D.** Casing

9 Clear zone formation around the colony of PSM in the medium is due to..

A. $CaCO_3$ Solubilization **B.** $CaCl_2$ Solubilization
C. $Ca_3(PO_4)_2$ Solubilization **D.** None of the above

10 The basic substrate used for the production of algal SCP is...

A. Sunlight & Methanol **B.** Sunlight & CO_2
C. Sunlight & n-Alkenes **D.** Sunlight & Starch

11 Cry Proteins have insecticidal Properties towards the insects...

A. *Lepidoptera* **B.** *Coleoptera*
C. *Deptera* **D.** All of the above

12 Parasitization of one fungus by another fungus is known as...

A. Nematophagy **B.** Mycophagy
C. Mycoparasitism **D.** Autophagy

13 In the retroviral infection method to produce transgenic animal, which kind of genetic material should be modified?

A. DNA **B.** RNA
C. c-DNA **D.** None of all

14 Which gene is first transferred in mice to produce transgenic mice?

A. Growth hormone **B.** Metallothionein
C. B-Galactosidase **D.** Both A & B

15 To produce transgenic fish, in which part of cell, DNA can be injected by microinjection?

A. Female pronucleus **B.** Male pronucleus
C. Cytoplasm **D.** Embryo

Que:-2 Short Answer Questions. (Any 6 only) **6 X 2= 12**

1 Just draw the figure with proper nomenclature for "Schematic representation of the sequential stages of somatic embryo development".
2 Define Totipotency. Who coined the term Totipotency 1st time?
3 Define: Plant Tissue Culture.
4 Give the names of the scientists who have developed haploid culture 1st time. Where they carried out this work?
5 What are the advantages of using Biofertilizers over chemical fertilizers?
6 Write the importance of composting in mushroom cultivation.
7 What are the advantages of producing SCP?

8 Role of Siderophores as Biocontrol Agent.

9 Write the difference of the term 'Biotransformation' between Animals & Plants.

10 "Transgenic animals are often called bioreactors"-Justify the statement.

Attempt any 4 (Four) questions from Que-3 to Que-7
Give Descriptive Answers For Following Questions.

Que:-3 **A.** Summarize the History of Plant Tissue Culture with the milestones achieved by scientists. **05**

B. Explain the procedure of Explant Sterilization. **04**

OR

Que:-3 **A.** Explain MS Medium as a nutrition source for *in vitro* regeneration of plant. Give three names of other PTC media. **09**

Que:-4 **A.** Write a brief note on 'Continuous Culture System'. **05**

B. Explain about 'Indirect Somatic Embryogenesis'. **04**

OR

Que:-4 **A.** Explain production Bt Cotton along with its importance & environmental impact as insect resistant plant. Explain the mode of action of δ-endotoxin to kill the insects. **09**

Que:-5 **A.** Give a detailed account on the process of mushroom cultivation. **09**

OR

Que:-5 **A.** Write Short Notes on following:

1. Mycorrhiza **04**
2. Rhizobial inoculants as Biofertilizers **05**

Que:-6 **A.** Give a detailed account on SCP production. **09**

OR

Que:-6 **A.** Write Short Notes on following:

1. Bt toxin **04**
2. Modes of Biocontrol **05**

Que:-7 **A.** In which method gene is inserted in to male nuclei for production of transgenic animal? Why? Describe the method. **05**

B. Give an account on Transgenic Mice. **04**

OR

Que:-7 **A.** In which method virions are transferred to 4-16 celled embryos? Why? Describe the method. **04**

B. Give an account on Transgenic Fish. **05**

☺ ~~~ALL THE BEST~~~ ☺

M.B.PATEL SCIENCE COLLEGE, ANAND
Biotechnology Department
S.Y.B.Sc. 3RD SEM US03BC01 Internal Exam

Date- 21/09/2011 **Marks- 60**
Time— 2.0 TO 5.0 PM

Q1 **Multiple choice questions: every question carries 1 mark. (Attempt any 12)** **(1X12=12)**

1 ---------- is known as invert sugar.
A) Glucose B) Fructose C) Sucrose D) starch

2 The number of isomers of glucose -------
A) 16 B) 2 C) 6 D) 12

3 Sugar containing amino groups are called as----------
A) Fruit sugar B) Amino sugar C) Invert sugar D)None of the above.

4 The equation $\Delta G = \Delta H - T\Delta S$ depends upon -----
A) Constant temperature and volume B) Constant pressure and volume
C) Constant pressure and temperature D) All of the above.

5 Regulation of metabolites is necessary to achieve ---------- and ----------
A) Entropy , enthalpy B) Energy , balance
B) Economy , energy D) Economy , balance

6 In spontaneous reaction total entropy of a system must---------
A) Remains constant B) decreases C) increases D) none of the above

7 At Isoelectric pH, net mobility of an amino acids is
A) Towards Cathode B) Towards Anode
C)Zero D) None of above

8 ----------is a derivative of alanine with a phenyl substituent on ß carbon
A) Tyrosine B) Proline
B) Histidine D)Phenyl alanine

9 Which of the following is an imino acid?
A) Histidine B) Glycine
B) Cysteine D) Proline

10 The number of residue per turn in the helix of DNA is
A) 10 B) 2
B) 3.4 D) 34

11 Monomer units of nucleic acid are
A) Nucleoside B) Nucleotide
C) Purines D) Pyrimidines

12 Nucleic acid absorb at 260nm due to the presence of

A) Phosphate B) Sugar

D) Purines and Pyrimidines D)Oxygen

13 Which one is the example of a trace element.

A) Sodium B) Magenese

C)Magnesium D) Chlorine

14 Na pump is involved in the transportation of how many Na+ ions outside the cell

A) 1 Na+ B) 2 Na+

C)3 Na+ D) 4 Na+

15 Goitre results from the deficiency of which mineral element?

A) Calcium B) Iron

C) Iodine D) Sodium

Q2 **Short questions. Attempt any 6 out of 10. Each question carries 2 marks** **(2x6=12)**

1 Give reason glucose and fructose gives same osazone.

2 Draw the structure of α-D-Glucopyranosyl (1,4)α-D- glucopyranoside.

3 Give first and second law of thermodynamics and define Gibb's free energy.

4 Give only chart for overview of amino acid metabolism.

5 Write down the dietary sources and RDA values of Iron.

6 Write down the biochemical functions of Iron.

7 Define : Isoelectric pH

8 Define : Zwitter ion

9 Define: Phosphodiester bond.

10 Define: Nucleotide.

Long questions. Attempt any 4 out of 5. Each question carries 9 marks. **(9X4=36)**

Q3 **A** Write a note on osazone formation. **(5)**

B Differentiate: Amylose and Amylopectin. **(4)**

OR

Q3 **A** Give the biological functions of carbohydrates (at least 8 points) **(4)**

B Write a note on derived sugar. With examples. **(5)**

Q4 Explain: metabolic activities are independent and interconnected. Along with chart. **(9)**

OR

Q4 **A** Give overview of carbohydrate metabolism. **(5)**

B How ATP is involved in metabolism. Explain. **(4)**

Q5	A	Write a note on: titration curve of Glycine.	(5)
	B	Write a note on: Sanger's reaction.	(4)
		OR	
Q5	A	Give an account on classification of amino acid based on their polarity	(5)
	B	Write a note on essential amino acid & give their importance.	(4)
Q6	A	Write a note on Watson and crick model of DNA	(5)
	B	Draw the structure of ATP, TMP	(4)
		OR	
Q6	A	Write a note on Tm & its relation with GC content & COT value	(5)
	B	Give comparative account on A,B and Z forms of DNA	(4)
Q7		Give the detailed account on the RDA value, dietary sources, biochemical functions and clinical importance of Sodium.	(9)
		OR	
Q7		Write a note on	
		a. Classification of minerals	(5)
		b. Chemical functions of calcium	(4)

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M.B.PATEL SCIENCE COLLEGE

First Internal Examination

S.Y.B.Sc.[BIOTECHNOLOGY]

US03CBC02

Date: 22/09/2011 **TOTAL MARKS:60**

Time: 2:00 to 5:00 pm

Q-1. Write the answer of MCQ on your answer sheet. (ANY TWELVE) **[12×1=12]**

1. The bond angle between H & O atom in structure of water is
   a. 104.5^0 b. 109.5^0
   c. 100^0 d. None of above
2. The membrane between ICF & Tissue fluid is called as
   a. Rapid b. Slow
   c. Impermeable d. All of above
3. What is the boiling temperature of water?
   a. 4^0C b. 100^0C
   c. -4^0C d. 37^0C
4. The process of separation of crystalloids from colloids is...
   a. Sensitization b. Protection
   c. Dialysis d. Ageing
5. In plants opening and closing of stomata is regulated by
   a. Diffusion b. Osmosis
   c. Light d. All of the above
6. In various diseases of blood the viscosity or the blood
   a. Increases b. Decreases
   c. Remains constant d. None of the above
7. Biological oxygen demand is a measure of _____ from microbes in oxidizing the organic matter in the waste water.
   a. O_2 b. H_2
   c. CO_2 d. CH_3
8. I-R analysis measures _____ gas product during oxidation of total organic carbon compound.
   a. CO_2 b. H_2
   c. CH_3 d. CH_3
9. _____ is the filtration technique used during Secondary (biological) treatment.
   a. Activated sludge b. Lagoons
   c. Trickling filter d. None of the above
10. Isopycnic centrifugation works at _____and for _____
    a. Low speed, short time b. High speed, short time
    c. Low speed, long time d. High speed, long time
11. In swinging bucket rotor, solution in the tube reorients to lie _____to the axis of rotation and _____ to the centrifugal field.
    a. Parallel, perpendicular b. Parallel, parallel
    c. Perpendicular, parallel d. None of the above

[P.T.O]

12. High speed centrifuge can provide about ---------- centrifugal force in the process
    a. 25,000 g
    b. 75,000 g
    c. 30,000 g
    d. 90,000 g
13. _____ Lamp is the most commonly used source for visible radiation.
    a. Tungsten filament
    b. Hydrogen
    c. Xenon
    d. Globar
14. Photomultiplier tubes are used only for _____ light intensities.
    a. High
    b. medium
    c. High and medium
    d. None of the above
15. _____ is the equation for Beer's –Lambert's low for absorption.
    a. RCF= ωr/980
    b. $log10\ \frac{Io}{I} = abc$
    c. $\log 10\ \frac{I}{Io} = abc$
    d. $log10\frac{Io}{I} = bc$

Q-2. Define followings: (ANY SIX) **[6×2=12]**

a. Hydrogen Bond
b. Starling law of hypothesis
c. Colloids
d. Diffusion
e. Biological oxygen demand
f. Total organic carbon
g. Write about high speed centrifuge
h. Give basic components for centrifuge along with their uses
i. Write about prism as a wavelength resolving device.
j. Differentiate : UV spectrophotometer and Visible colorimeter (4 points)

Descriptive type questions **[ANY FOUR from Q-3 to Q-7]**

Q-3. **a.** Give an account on abnormal water & electrolyte metabolism. **[05]**
b. Write a note on distribution of water. **[04]**

OR

Q-3. **a.** Give the electrolyte constituent of ECF. **[05]**
b. Write a note on structure of water. **[04]**

Q-4. **a.** Give an account on properties of colloids. **[05]**
b. Define viscosity and explain biological significance of it. **[04]**

OR

Q-4. **a.** Write an account on classification of colloids **[05]**
b. Define and give biological significance of osmosis. **[04]**

Q-5. **a.** Write a note on Total organic compounds **[04]**
b. Give a account on Trickling filter **[05]**

OR

Q-5. **a.** Describe the various methods used for solid processing during waste water treatment. **[05]**
b. Write note on Composting and Lagoons. **[04]**

Q-6. **a.** Differentiate between Rate Zonal and Isopycnic centrifugation **[05]**
b. Explain: fixed angle rotor **[04]**

OR

Q-6. **a.** Name the types of preparative centrifugation. Explain the method which uses homogenous medium for separation. **[09]**

[P.T.O]

Q-7. a. Write a detail note on: Detection devices of UV and Visible spectrophotometer. [09]

OR

Q-7. a. Give the Laws of absorption and derive the equation for Beer's-Lambert's law. [06]

b. Give the block diagram for optical arrangement of a double beam instruments. [03]

☺ BEST OF LUCK ☺

M.B. Patel Science College

Internal Test 2011

S.Y.BSc. Biotechnology

US03 E MIC-01

Date:24/9/2011 **Time:** 2.00-5.00 pm **Total Marks:** 60

No of pages: 03

Q-1 Multiple Choice Question 12

(Note: Each question carries one mark. Attempt any 12)

A. _____ was the first person t report the accurate observation of microorganisms
   a. Joseph Lister
   b. Paul Erlich
   c. Antony von Leeuwenhook
   d. Louis Pasteur

B. _____ discovered vaccination for smallpox using cowpox vaccine
   a. Louis Pasteur
   b. Edward jenner
   c. Fransisco redi
   d. Joseph Lister

C. At _____°c temperature the process of fpasterutization works
   a. 52.8°c
   b. 62.8°c
   c. 72.6°c
   d. 62.6°c

D. Bacterial flagella are composed of _____
   a. Protein
   b. Lipid
   c. Carbohydrate
   d. Fat

E. Rabbies disease is transmitted to people by bites of _____ animals
   a. Horse
   b. Dog
   c. Rabbit
   d. Mice

F. Teichoic acids binds _____ ions to protect and stabilize the cytoplasmic membrane of bacteria
   a. Mg
   b. Na
   c. K
   d. Ca

G. Prokaryotes contain _____ S unit of ribosomes
   a. 70s
   b. 60s
   c. 75s
   d. 80s

H. Bacterial cell wall are composed of _____
   a. Cellulose
   b. peptidoglycan
   c. Chitin
   d. All of above

I. What dye can be used to stain nucleus of acidic cell
   a. Acidic
   b. None of above
   c. basic
   d. Neutral

J. Which oil gives best resolution in compound microscope
   a. Cederwood oil
   b. Ceder oil
   c. Balsam oil
   d. Paraffin oil

K. What acts as a mordant in gram's staining
   a. Alcohol
   b. Crystal violet
   c. Gram's iodine
   d. Saffranin

L. What stain is commonly used for simple staining

a. Alcohol c. Crystal violet
b. Methylene blue d. Saffranin

M. What is used as solidifying agent in preparation of nutrient agar

a. Agar agar powder **c.** Gelatin
b. Jelly **d.** All of above

N. What can be an example of selective media

a. Nutrient agar c. Eosin methylene blue agar
b. Mac conkey agar d. None of above

O. In what phase of growth curve cells are seen in dividing stage

a. Lag c. Log
b. Exponential d. Decline

P. Organisms that use light as their sole source of energy are called

a. Autotroph c. Phototroph
b. Hetrotroph d. Lithotroph

Q-2 Short question Answer 12

(Note: Each question carries 2 marks and attempt any six)

A. Define Pasteurization
B. Define Phogocytosis
C. Define Pili
D. Define flagella
E. Define chemotaxis
F. Define vaccine
G. Define mordant and give two examples of mordant
H. Give four differences between simple staining and differential staining
I. Define Microscope
J. Define chemolithophs
K. What are auxotroph
L. Why are trace elements required for growth of bacteria

Long Question

(Note: Each question carries 12 marks attempt any 3)

Q-3 (a) Give an account on Koch's postulate 04
(b) Contribution of scientist in development of Medical Microbiology 08

OR

Q-3 (a) Describe germ theory of disease 08
(b) Give an account on agricultural microbiology 04

Q-4 (a)	With neat and labelled diagram discuss process of sporulation	08
(b)	Write an note on cytoplasmic inclusion bodies and vacuoles	04
	OR	
Q-4 (a)	Explain the structural and functional characteristic of capsules	04
(b)	Briefly explain cytoplasmic membrane	04
(c)	Sketch ultra structure of Flagella and give its different forms	04
Q-5 (a)	Explain resolving power of compound microscope	04
Q-5 (b)	Why is staining process necessary	04
(c)	Explain role of fixative in brief	04
	OR	
Q-5 (a)	Draw a neat and labelled diagram of compound microscope and briefly explain parts of microscope	08
Q-5 (b)	Discuss Gram's staining in detail	04
Q-6 (a)	Discuss nutritional types of bacteria	05
Q-6 (b)	Discuss types of media	07
	OR	
Q-6 (a)	Explain growth curve of bacteria	06
Q-6 (b)	Discuss techniques for isolation of pure culture	06

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M.B. Patel Science College

Internal Test 2011

S.Y.BSc. Biotechnology

US03 E BIO 01

Cytogenetics and Plant Biology

Date: 23/09/2011 **Time:** 2.00-5.00 pm **Total Marks:** 60

No of pages: 03

Q-1 Multiple Choice Question 12

(Note: Each question carries one mark. Attempt any 12)

A. Most abandunt chemical substance of middle lamella is
   a. Lignin
   b. Cutin
   c. Suberin
   d. Pectin

B. Fluid mosaic model of cell membrane was proposed by
   a. Robertson
   b. Danielli and Davson
   c. Singer and Nicholson
   d. Watson and Crick

C. Hydrolytic (digestive) enzymes occur in
   a. Ribosome's
   b. Peroxisomes
   c. Lysosomes
   d. Glyoxysomes

D. The cell nucleus is discovered by
   a. Virchow
   b. Robert Brown
   c. Robert hook
   d. De Duve

E. Which plant from following is selected by Mendel for his experiment
   a. Cucumis Melo
   b. Pisum sativum
   c. Cajanus cajan
   d. None of above

F. What is correct ratio of monohybrid cross
   a. 9:3:3:1
   b. 3:1
   c. 12:3:1
   d. 9:7

G. What is the ratio of dominant epistatis
   a. 12:3:1
   b. 9:7
   c. 9:3:4
   d. 9:3:3:1

H. Monohybrid test cross ration is
   a. 1:1
   b. 3:1
   c. 2:1
   d. none of above

I. Which types of inflorescence is found in Lamiaceae family
   a. Verticillaster
   b. Cyathium
   c. Hypathodium
   d. None of above

J. Tetradynamous stamens are present in family
   a. Astraceae
   b. Brassicaceae
   c. Euphorbiaceae
   d. all of the above

K. Bicapellary syncarpous and superior ovaryus found in family
   a. Astraceae
   b. Laminiceae
   c. Bracissiceae
   d. All of above

L. Milky latex is present in family
   a. Euphorbiceae
   b. Asclcpiadaceae
   c. Both of above
   d. None of above

M. Conversion of starch to organic acid is essential for
   a. Stomatal opening
   b. Stomatal imitation
   c. Stomatal closure
   d. Stomatal growth

N. Kranz type of anatomy is found in
   a. Succulents
   b. c4 plants
   c. c3 plants
   d. none of above

O. Temperature of plants regulate by the process of
   a. Guttation
   b. Photosynthesis
   c. Transpiration
   d. All of above

P. A plant cell becomes flaccid when it keeps in
   a. hypotonic solution
   b. hypertonic solution
   c. isotonic solution
   d. all of above

Q-2 Short question Answer

(Note: Each question carries 2 marks and attempt any six)

A. What are the main function of cell wall
B. What are chromosomes
C. Name various enzymes of lysosomes.
D. Why Mendel selected pea plant. Give only two reasons
E. What is test cross
F. Define dominance
G. Give botanical name of two medicinal plants of Euphorbiceae family
H. Write floral formula of Brassicaceae and Laminaceae family
I. What is binomial nomenclature? Who proposed it
J. Describe steps of PS II
K. What is Kranz anatomy
L. Describe PS I

Long Question

(Note: Each question carries 12 marks attempt any 3)

Q-3 (a)	Structure and function of lysosymes	08
(b)	Structure of mitochondria	04
	OR	
Q-3 (a)	Explain function of nucleus	04
(b)	Explain structure and function of ~~nucleus~~ chromosome	08
Q-4 (a)	What is epitasis? Describe dominant and recessive epitasis	12
	OR	
Q-4 (a)	Explain Mendel's law of hereditary	12

Q-5 (a)	Write floral characterise of Euphorbiceae	08
Q-5 (b)	Write economically important plants of Brassicaceae	04
	OR	
Q-5 (a)	Describe floral characteristic of Astraceae	08
Q-5 (b)	Describe economically important plants of Lamiaceae	04
Q-6 (a)	Describe mechanism of stromatal transpiration	06
Q-6 (b)	Describe osmotic regulation in plants	06
	OR	
Q-6 (a)	Explain CAM	06
Q-6 (b)	Explain structure and types of stomata	06

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