

73

MAR THOMA RESIDENTIAL SCHOOL  
SECOND TERMINAL EXAMINATION

STD – XI

BIOLOGY

Time – 3Hrs

Marks - 80

PART I

SECTION A

Question 1

Answer the following questions briefly:

[5x1]

- (i) Which phase of growth curve shows maximum growth?
- (ii) Why is Abscisic Acid called stress hormone ?
- (iii) Give Blackman's Law of Limiting factors.
- (iv) What is pulvinous ?
- (v) Name the cell organelle in which CO<sub>2</sub> is released during photorespiration.

What are the favourable conditions for this process?

SECTION B

Question 2

[2]

Give the most important role / use of the following:

- (a) Auxanometer (b) Ethylene (c) Anabaena (d) Sulphur

Question 3

[2]

Briefly describe the effect of light intensity on the rate of photosynthesis.

Question 4

[2]

If short day plants ( eg. Tobacco) are kept under short day conditions during the summer season when day light is for much more than 12 hours , what would be the effect on the flowering of such plants ? Give a reason.

[2]

**Question 5**

Give a schematic representation of the cyclic photophosphorylation.

**OR**

Give the contributions of Sachs and Engelmann

**SECTION C**

**Question 6**

[3]

Explain the role of auxins in phototropic movements.

**OR**

Explain briefly the role of gibberellins in plants.

**Question 7**

[3]

Mention one significant difference between the following:

- a) Stoma and Stroma
- b) Differentiation and Dedifferentiation
- c) Dormancy and Quiescence

**Question 8**

[3]

Give the causes of seed dormancy .

**Question 9**

[3]

Explain stomatal movement based on  $K^+$  ion transport mechanism.

**SECTION D**

**Question 10**

[5]

Give a graphic outline of Hatch and Slack pathway. Explain why plants following this pathway are very productive.

**OR**

Describe chemiosmotic hypothesis.

**Question 11**

- a) Explain mass flow hypothesis.
- b) Give two points of difference between transpiration and guttation.

[5]

**OR**

- a) Give a graphic outline of nitrogen cycle.
- b) Give two points of difference between photoperiodism and vernalisation.

**TEST BASED ASSESSMENT**

**Question 12**

- a) It is difficult to develop antiviral drugs. Even if developed may not be effective after some time. Explain.
- b) A sick child was brought to the hospital. What can be done to help the doctors identify the virus , quickly and accurately ?

[5]

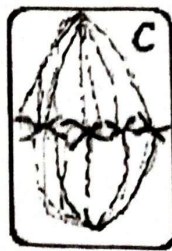
**PART II**  
**SECTION - A**

1. Answer the following questions briefly and to the point.

- (a) The ribosomes in a eukaryotic cell is having two sub-units . They are (1/2)
- (i) 30 s and 50s
  - (ii) 40s and 60s
  - (iii) 30s and 60 s
  - (iv) 20 s and 60s
- (b) The rate of enzyme catalysed reaction becomes stable after some time because of (1/2)
- (i) accumulation of the product
  - (ii) increased pH
  - (iii) increased temprartue
  - (iv) saturation of enzyme
- (c) What do you mean by Cardiac output? What is the cardiac output for a healthy adult man? (1)
- (d) Name an enzyme which need an acidic pH and another enzyme which need a basic pH (1)
- (e) Give the general formulae of an amino acid . (1)
- (f) Represent diagrammatically "an acrocentric chromosome" (1)

**SECTION - B**

2. List out the different valves present in a human heart. Mention the location and function of each one of them (2)
3. "Bile juice contains no digestive enzymes, yet it is important for digestion". Comment on it. (2)
4. Given below is a diagram showing a phase in Mitosis. Identify it and Mention the charactersitic feature unique to this phase. (2)



5. List out the different bonds present in a DNA molecule. Illustrate it diagrammatically (2)

**OR**

What are Mesosomes? Where are they found? Mention any two functions of the same.

**SECTION-C**

6. "Sino atrial node is called the pacemaker of the heart. Why and how? (3)
7. What happens to butter in the intestine? (3)

**OR**

How is protein digested in small intestine?

8. Explain the Mechanism of formation of blood clot? (3)
9. Give any one point of difference between: (3)
- (a) Atrial Systole and Ventricular Systole
  - (b) Vital Capacity and Total lung capacity
  - (c) Lyases and Ligases

**SECTION - D**

10. What are cofactors? Discuss the various factors affecting the rate of enzyme activity (5)

**OR**

Meiosis is known as reduction division, Why? Explain the various events in prophase I with suitable diagrams.

11. Compare open circulation with closed circulation. Explain the process of circulation in human beings. Why is it known as double circulation? (5)

**OR**

Name any one double membrane bound organelle found only in plant cells. What are the characteristics of it? State its functions. Draw a labelled diagram.

**Text Based Assessment**

(5)

- 12.
- a. A Man in India was diagnosed with a viral disease reported in Africa. Explain the different ways in which this could happen.
  - b. Explain some natural defence mechanism of the body against virus.