MAR THOMA RESIDENTIAL SCHOOL

STD – XI

ANNUAL EXAMINATION Time – 3 hrs

BIOLOGY Marks - 80

PART – I

SECTION - A

Question 1

I) Give brief answers: [4]

a)Explain the term perianth. Name an angiospermic family with this structure.

b) Define RQ and give the value for fats.

c) Differentiate between exarch and endarch xylem.

d) If OP of cell A is less than cell B , will water move into or out of cell A.Explain.

ii) Choose the correct answer: [4]

a. The waxy material deposited in the casparian strip of the endodermis is
   1) Pectin
   2) Suberin
   3) Lignin
   4) Hemicellulose

b. In a fish aquarium , green aquatic plants are grown primarily for
   1) Fish food
   2) Decoration
   3) CO_2
   4) O2

c. The number of glucose molecules required to produce 38 ATP molecules under anaerobi condition is
   1) 1
   2) 19
   3) 25
   4) 38

d. In bryophytes
   1) sporophyte in itself completes the life cycle
   2) gametophytes are dependent on sporophytes
   3) sporophytic and gametophytic generations are independent
   4) sporophytes are dependent on gametophytes

iii) Give reasons. (2)

1) At higher temperature, green plants start releasing carbon dioxide instead of oxygen.
2) The age of teak can be calculated by dendrochronology but not of coconut tree.

SECTION B

Question 2 (2)

Through diagrammatic representation show the haplontic and haplo-diplontic lifecycle patterns.

Question 3 (2)

Give definition and importance of

a. Imbibition
b. Vernalisation

Question 4 (2)

Give the criteria of essentiality. Who proposed it?

Question 5 (2)

Draw a diagram showing the T.S of a monocot root (diagrammatic).

OR

Draw a diagram showing the T.S of a dicot root (diagrammatic).

SECTION C

Question 6 (3)

a) Explain the different components of water potential.

b) What is an amphibolic pathway? Name one.

Question 7 (3)

Describe the path of ascent of sap due to transpiration pull.

OR

Describe mass flow hypothesis for translocation of organic solutes.

Question 8 (3)

a) Explain briefly the role of cytokinins and ethylene in plants.

b) Expand: (i) IAA (ii) LDP

Question 9 (3)

Give the function / role of the following

(a) Anabaena (b) Phosphorus (c) Passage cells (d) Bulliform cells

(e) Leghaemoglobin (f) Fusiform initials

SECTION D

Question 10

(5)

a. (i) Floral formula of a family is given. Give the characters based on the formula. Name th family and draw the floral diagram .

$$Br\ \Phi\ ⚥\ K_{(5)}\ C_{1+2+(2)}\ A_{1+(9)}\ \underline{G}_1$$

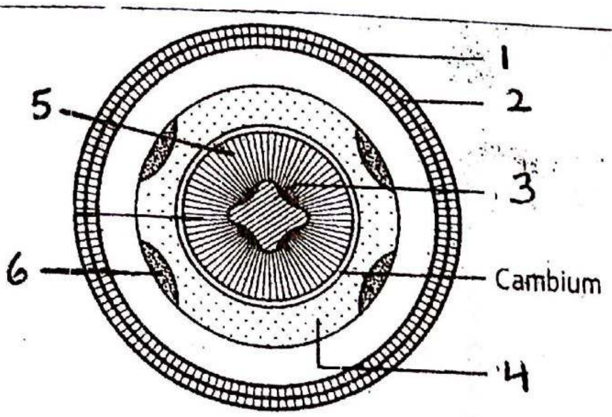
(ii) Give four points of anatomical difference between monocot and dicot stem.

OR

b. (i) Floral formula of a family is given. Give the characters based on the formula. Nam family and draw the floral diagram .

$$Br\ \oplus\ \overline{P_{3+3}\ A_{3+3}}\ \underline{G}_{(3)}$$

2. Observe the given diagram and answer the questions



i. What type of growth is shown?

ii. Label the numbered parts.

Question 11

(5)

a. 1. Give a graphic outline of electron transport system.

2. Describe kranz anatomy

OR

b. 1. Give a graphic outline of Krebs cycle.

2. Give a schematic representation of light reaction involving both the photosystems

PART –II (40 MARKS)

SECTION – A

Question 1

1. **Give brief answers** (4)

a. What do you mean by a plasmid?
b. Compare a protostome with a deuterostome.
c. What is emphysema? Name the part of the body that gets affected by it.
d. Define cardiac output

2. **Choose the correct option** (4)

a. The bacteria that grow best in oxygen but can survive without oxygen also are called

(1) Facultative aerobes
(2) Obligate aerobes
(3) Facultative anaerobes
(4) Obligate anaerobes

b. Left atrium receives oxygenated blood through
(1) Coronary artery
(2) Aorta
(3) Pulmonary vein
(4) Pulmonary artery

c. Which of the following endocrine glands produces hormones that are similar to the chemicals produced by sympathetic nervous system?

(1) Pancreas
(2) Thyroid
(3) Parathyroid
(4) Adrenal Medulla

d. If on one of the helix of a DNA molecule the base sequence is AGCT, then the other strand will have
(1) TCGA
(2) UCGT
(3) AGCT
(4) GATC

3. **Give reasons** (2)

a. "Pancreas is a composite gland"
b. "Golgi apparatus is seen in association with ER"

SECTION - B

Question 2

How is a nucleoside formed? What should you do to make it a nucleotide? (2)

Question 3

Briefly explain the auto regulatory mechanism of JGA (2)

Question 4

What is the cause of erythroblastosis foetalis? How can we prevent it? (2)

Question 5

Mention the catalytic roles played by the enzymes dehydrogenases and lyases (2)

OR

Diffusion of gases occurs only in the alveolar region. Why?

SECTION –C

Question 6

Give a brief description on the structure of actin with the help of a diagram (3)

Question 7

How does a nerve impulse move across a neuron? (3)

Question 8

What are Centrioles? What is its significance? Explain its ultra-structure (3)

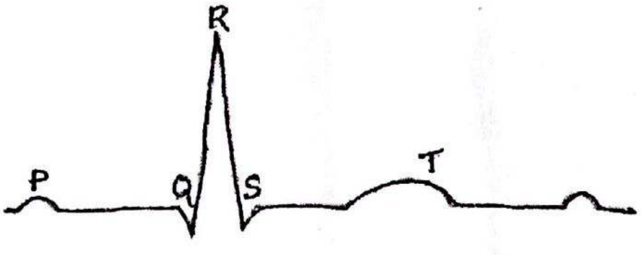
(Or)

Write a comparative account on phylum Platyhelminthes, Aschelminthes and Annelida on the basis of their

(a) Habit
(b) Coelom
(c) Excretory organ

Question 9

The following is a diagrammatic representation of ECG. What is it EGG? What is its clinical significance? What do P, Q, R, S and T represents? (3)



SECTION- D

Question 10 (5)

Draw a well labelled diagram of a nephron. Explain the role of counter current mechanism in renal functioning

OR

What is the significance of meiosis? Why is it known as reduction division? Explain the various events in each sub stages of prophase I in meiosis

Question 11 (5)

Explain the sliding filament theory for muscle contraction

OR

Describe the double helical structure of DNA proposed by Watson and Crick