

Sample paper

SUBJECT: BIOLOGY

PAPER : BOTANY

TIME : 1½ Hours]

[Maximum Marks: 35

General instructions:

- (i) There are four sections in the question paper. All questions are compulsory.
- (ii) Section "A" contains question number 1 & 2, Long answer type questions of five marks each.
- (iii) Section "B" contains question number 3 to 6, Short answer type questions of three marks each.
- (iv) Section "C" contains question number 7 to 10, Very short answer type questions of two marks each.
- (v) Section "D" contains question number 11 with Five Objective type questions of one mark each.
- (vi) There is no overall choice in the question paper, however, an internal choice is provided in Long answer type questions.

(Section "A"- Long Answer Type Questions) 5 Marks each

1. Give the Taxonomic description of Family Fabaceae with respect to Calyx, Corolla, Androecium and Gynoecium. Write its general floral formula.

Or

The arrangement of ovules within the ovary is known as placentation. What does the term placenta refer to? Name and draw various types of placentation in the flower as seen in T.S. or V.S.

2. Explain the major steps of Tricarboxylic acid cycle. Where does this process occur in a cell?

Or

Explain the major steps of Calvin cycle. Where does this process occur in chloroplast?

(Section "B"- Short Answer Type Questions) 3 Marks each

3. What is ICBN? Write the important rules and guide lines for scientific names.
4. Why bryophytes are called amphibians of plant kingdom?
5. Define Meristematic tissue. Classify Meristems on the basis of their position in the plant body.
6. How will you differentiate between cyclic and non-cyclic photophosphorylation?

(Section "C"- Very Short Answer Type Questions) 2 Marks each

7. Mention two traits in which Fungi resemble Animalia.
8. How is Botanical garden useful in conserving biodiversity?
9. Differentiate between:
 - (i) Open and Closed vascular bundle.
 - (ii) Endarch and Exarch vascular bundle.
10. Differentiate between Apoplast and Symplast pathways of transport of water.

(Section "D"- Objective Type Questions)

1 Marks each

11.

- (i) Whittaker's five kingdoms are Monera, Protista, _____, Plantae and Animalia. (Fill in the blank)
- (ii) Name the reserve food material found in the members of red algae.
- (iii) Which of the following exhibits the highest rate of respiration?
 - (a) Growing shoot apex
 - (b) Germinating seed
 - (c) Root tip
 - (d) Leaf bud
- (iv) Growth is rapid in lag phase. (True /False)
- (v) RQ of carbohydrates during aerobic breakdown is :
 - (a) 1
 - (b) Infinity
 - (c) Less than one
 - (d) 0

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(Section "A"- Long Answer Type Questions) 5 Marks each

1. What are biomembranes? Explain the fluid mosaic model of cell membrane.

Or

Give an account of structure and function of mitochondria.

2. Explain the mechanism of breathing with neat and labeled sketches.

Or

What is cardiac cycle? Describe the events that occur during joint diastole and atrial systole.

(Section "B"- Short Answer Type Questions) 3 Marks each

- 3. Name the criteria that are commonly used in the description and classification of animals.
- 4. What structural and functional characteristics do cilia, flagella and centrioles have in common?
- 5. Differentiate between bone and cartilage.
- 6. How is arteriosclerosis different from atherosclerosis?

(Section "C"- Very Short Answer Type Questions) 2 Marks each

- 7. How can animals be classified on the basis of their excretory matter?
- 8. Give one-word scientific term for the following:
 - (i) Blood-filled cavity in arthropodes.
 - (ii) Excretory organs of an annelid.
- 9. Write down the human dental formula. What is meant by diphyodont?
- 10. Differentiate between tendon and ligament

(Section "D"- Objective Type Questions)

1 Marks each

- 11.
- (i) Prototheria don't have:
 - (a) Pinna
 - (b) Mammae
 - (c) Scrotum
 - (d) All of the above

 - (ii) 70 S ribosomes are found in _____ (Fill in the blank)
 - (iii) Meiosis cannot occur in haploid cells. (True/False)
 - (iv) Mark the odd one:
 - (a) Monocytes
 - (b) Lymphocytes
 - (c) Neutrophils
 - (d) Erythrocytes
 - (v) Compound eyes are found in :
 - (a) Frog
 - (b) Earthworm
 - (c) Roundworm
 - (d) Cockroach

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