

Time: 1:30 Hours**Marks: 42****Instructions:**

1. Figure to the right indicate marks.
 2. There are five questions in the question paper.
 3. Answer any three of the following questions.
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Q-1 Answer the following questions as per instruction.**(A) Answer in very short:****04**

1. Dictyosome is absent in which algae?
2. What do you mean by Coenobium?
3. Why *Nostoc* is known as fallen stars?
4. Why Cyanophages are introduced into water?

(B) Answer in brief (any one):**03**

1. Write vegetative reproduction in fallen stars with diagram.
2. Describe Flagella of algal cell

(C) Answer in detail (any one):**07**

1. Explain with diagram sex organs and fertilization in frog spawn algae.
2. Describe filamentous forms of thallus structure in algae.

Q-2 Answer the following questions as per instruction.**(A) Answer in very short:****04**

1. Who first of all studied the ultrastructure of yeast cell?
2. **Fill in the blanks:** Antheridium is completely absent in *Aspergillus*.....
3. **True or False?** Mycelium of *Aspergillus* produces haustoria.
4. Which species of *Aspergillus* is rich source of riboflavin?

(B) Answer in brief (any one):**03**

1. Explain: Industrial application of yeast in Brewing industries.
2. Describe the protoplast of fungal cell.

(C) Answer in detail (any one):**07**

1. Describe asexual reproduction in *Eurotium*.
2. Discuss vegetative structure of yeast cell.

Q-3 Answer the following questions as per instruction.**(A) Answer in very short****04**

1. What is cladia in bryophytes?
2. **True or False?** *Marchantia* is a dioecious plant.
3. Name two growth stages of *Funaria* life cycle.
4. Which cell closed the tip of the neck of archegonia in *Funaria*?

(B) Answer in brief (any one):**03**

1. Give difference between: capsule of *Marchantia* and capsule of *Funaria*.
2. Discuss uses of Bryophytes as rock builders and as a source of food.

(C) Answer in detail (any one):**07**

1. Describe archigonial branch of *Funaria* with diagram.
2. Describe with diagram: Archegoniophore in *Marchantia*.

Q-4 Answer the following questions as per instruction.

(A)Answer in very short:

04

1. Give one word: The basal hemispherical portion of ligule.
2. State the type of sorus in *Adiantum*.
3. Which stage is considered an advance stage of heterospory?
4. Who developed stelar theory?

(B)Answer in brief (any one):

03

1. Explain the importance of heterospory.
2. Explain sex organs of *maiden hair fern*

(C)Answer in detail (any one):

07

1. Discuss spore producing organs of *Selaginella*
2. Describe in detail the elementary processes of telome theory.

Q-5. Answer the following questions as per instruction.

(A)Answer in very short:

04

1. Which plant group is known as Phanerogames without ovary?
2. True or False: Diadelphous stamen, Dorsifixed anther found in Fabaceae.
3. Name subscandent plant species of Combretaceae.
4. Name the family of *Arjun* tree.

(B)Answer in brief (any one):

03

1. Describe the structure of female cone of *Pinus*.
2. Refer the genus to respective family giving reasons: *Putranjiva*

(c) Answer in detail (any one):

07

1. Write floral character and floral formula of *Amaryllidaceae* family.
2. Describe internal structure of *Pinus* needle with diagram.
