



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

SECOND SEMESTER – APRIL 2023

UPB 2501 – ALGAE AND BRYOPHYTES

Date: 29-04-2023

Dept. No.

Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

SECTION A - K1 (CO1)

Answer ALL the Questions

(10 x 1 = 10)

1. Fill in the blanks

- a) The plant body of gametophyte (n) and sporophyte (2n) are morphologically similar with ----- type of life cycle.
- b) Zoospores produced by plurilocular sporangium in *Ectocarpus* is called as -----.
- c) Carrageenan for tooth paste is extracted from the algae -----.
- d) Bryopsida has 3 sub classes namely, Sphagnidae, Androaeidae and -----.
- e) Mucilage cavities of *Anthoceros* contains -----.

2. State whether the following statements are TRUE or FALSE

- a) Life cycle of *Volvox* is haplontic type.
- b) In *Ectocarpus*, spermatozoids are produced in the antheridial filaments.
- c) *Spirulina* belongs to the family chlorophyceae with spiral chloroplast.
- d) Rothmaler classified the Bryophytes into 3 major classes.
- e) Gemma in *Marchantia* is diploid in nature.

SECTION A - K2 (CO1)

Answer ALL the Questions

(10 x 1 = 10)

3. Choose the correct answer

- a) Asexual reproduction by azygospores are found in
a. *Volvox* b. *Chara* c. Diatoms d. *Sargassum*
- b) *Sargassum* thallus attach to the substratum by
a. Creeping filament b. Rhizoids c. Hold fast d. Attaching disc
- c) The algae that contains more proteins with rich vitamins is
a. Diatoms b. *Chara* c. *Gracillaria* d. *Chlorella*
- d) Which one of the following is not related to the economic importance of bryophytes?
a. Peat – fuel b. Pollution indicator c. Acid rain indicator d. Agar-agar
- e) Stegocarpons means dehiscence of spores along the predetermined line is found in
a. *Marchantia* b. *Anthoceros* c. *Funaria* d. *Azolla*

4. Answer the following, each in about 50 words

- a) What are Pyrenoids?
- b) Write note on Plakia stage of *Volvox*.
- c) Mention about the Single cell proteins producing algae.
- d) Relate Amphibious plants.

e)	State about Elators.
SECTION B - K3 (CO2)	
	Answer any TWO of the following in 500 words (2 x 10 = 20) Draw diagrams / flowcharts wherever necessary
5.	Chart out with details on the range of thallus organization found in algae.
6.	Illustrate any 3 types of reproduction found in diatoms.
7.	Narrate the structure of sex organs of <i>Chara</i> .
8.	Discuss the methods involved in sea weed cultivation.
SECTION C – K4 (CO3)	
	Answer any TWO of the following in 500 words (2 x 10 = 20) Draw diagrams / flowcharts wherever necessary
9.	Write details on the structure of capsule in <i>Marchantia</i> .
10.	Bring out the salient features of sex organs of <i>Anthoceros</i> .
11.	Give an account on the morphology and anatomy of <i>Funaria</i> gametophyte.
12.	Enumerate with details on the economic importance of bryophytes.
SECTION D – K5 (CO4)	
	Answer any ONE of the following in 1000 words (1 x 20 = 20) Draw diagrams / flowcharts wherever necessary
13.	Describe the sex organs of <i>Gracillaria</i> . Illustrate the life cycle.
14.	Explain the structure of male and female conceptacles of <i>Sargassum</i> . Sketch out the life cycle.
SECTION E – K6 (CO5)	
	Answer any ONE of the following in 1000 words (1 x 20 = 20) Draw diagrams / flowcharts wherever necessary
15.	Outline the classification of Bryophytes. Enumerate the salient features of major classes.
16.	Elaborate on the structure of sex organs and capsule of <i>Funaria</i> .

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