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M.Sc. (IIIrd Semester) Examination, 2020

BOTANY

(Algae, Environment & Human Welfare)

Time Allowed : Three Hours

Maximum Marks : 70

SECTION - A

Q. 1. Attempt any ten questions. Each question carries
one mark. **10**

(1) All algae have :

- (a) Chlorophyll a and b
- (b) Chlorophyll a and carotenoids
- (c) Chlorophyll b and carotenoids
- (d) Carotenoids and phycobilins

(2)

(2) Which of the following have a prokaryotic cell :

- (a) Chlamydomonas
- (b) Oscillatoria
- (c) Gelidium
- (d) Spirogyra

(3) Diatoms are not destroyed easily like other

algae because :

- (a) of cellulose wall
- (b) of siliceous cell wall
- (c) they are non-living
- (d) they have a covering of mucilage

(4) Iodine is obtained from :

- (a) Laminaria

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(3)

- (b) Chara
- (c) Ulothrix
- (d) Spirogyra
- (5) _____ algae is capable of fixing atmospheric nitrogen.
- (6) Kelps is obtained from _____ (Marine algae/ Aquatic algae).
- (7) Parasitic algae is _____ (Cephaleuros/ Chlamydomonas)
- (8) A motile reproductive unit is called _____.
(Zygote / Zoospore / Alpanospore)
- (9) Algae species _____ can be potential space food for astronauts. (Chlorella / Spirogyra / Nostoc)

(4)

- (10) The algal biomass produced after treatment of industrial effluents can be used for _____ production. (Biogas, Animal feed / Poultry feed)
- (11) When both plus (+) and minus (-) strains are produced by the same parent the condition is called _____ :
- (a) Homothallic or monoecious
- (b) Heterothallic or dioecious
- (c) Isogamy
- (d) None of these
- (12) _____ is a parasitic algae.

SECTION - B

Note : Attempt any five questions. Each question carries 2 marks. **10**

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(5)

Q. 2. Write short notes on the following (any 5) :

- (1) Autotrophic nutrition
- (2) Algal bloom
- (3) Zoospores
- (4) Nitrogen fixation by blue green algae
- (5) Algae as richest source of protein
- (6) Photoreceptor
- (7) Seaweeds

SECTION - C

Note : Attempt any five questions. Each question carries 4 marks. **20**

Q. 3. (1) What are bio-fertilizers ? Explain how algae are used as biofertilizers.

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(6)

- (2) Most of the algae alongwith other submerged plants usually float on water during the day time, while they sink at night, why ? Discuss range of vegetative structure in algae.
- (3) Write a brief about medicinal use of algae.
- (4) Write a short note on cryopreservation.
- (5) Write in brief about harmful effect of algae.
- (6) Algae occur in variety of habitats. Explain.
- (7) Write a short note on bioactive compounds from algae.

SECTION - D

Note : Attempt any three questions. Each question carries 10 marks. **30**

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(7)

- Q. 4.** (1) Discuss the recent developments in algal classification giving special emphasis on emerging trends in molecular phylogeny and inter-relationship of principal groups of algae in detail.
- (2) Write a detailed note on recent developments and future of algal biotechnology.
- (3) World's 90% of photosynthesis takes place in algae. Explain in detail.
- (4) Write a detailed note on industrial phycology.
- (5) Discuss algal biofuels in detail giving suitable examples.