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63/1 (SEM-1) CC1/BOTHC 1016

2024

BOTANY

Paper : BOTHC 1016

(Phycology and Microbiology)

Full Marks : 60

Pass Marks : 24

Time : Three hours

The figures in the margin indicate full marks for the questions.

1. Answer the following questions : **(any five)**
1×5=5

(a) An example of bacterial virus is -

- (i) TMV
- (ii) Influenza virus
- (iii) Corona virus
- (iv) Bacteriophage

Contd.

- (b) Nostoc reproduces asexually by means of -
- (i) Fragmentation
 - (ii) Zoospore
 - (iii) Aplanospore
 - (iv) Endospore
- (c) A Thermophilic bacteria can live in high temperature upto -
- (i) 80°C
 - (ii) 90°C
 - (iii) 100°C
 - (iv) 113°C
- (d) Who discovered the vaccine against the pox disease of human ?
- (i) Ivanovsky
 - (ii) Jenner
 - (iii) Stanley
 - (iv) Momis
- (e) Following which one is a parasitic algae ?
- (i) Anabaena
 - (ii) Euglena

- (iii) Spirogyra
 - (iv) Cephaleuros
- (f) The G+ C content in bacterial DNA ranges from -
- (i) 25/75 percent
 - (ii) 75/25 percent
 - (iii) 25/50 percent
 - (iv) 50/25 percent
- (g) Following which one is a colonial algae -
- (i) Volvox
 - (ii) Chara
 - (iii) Vaucheria
 - (iv) Polysyphonia
- (h) Following which kind of life-cycle is observed in polysyphonia ?
- (i) Haplontic
 - (ii) Haplodiplobiontic
 - (iii) Diplohaplontic
 - (iv) Haplobiontic

(i) In which algae stigma or eye spot is present?

(i) *Nostoc*

(ii) *Vaucheria*

(iii) *Chlamydomonas*

(iv) *Fucus*

(j) Name the plant disease produced by bacteria -

(i) *E. Coli*

(ii) *Streptomyces antibioticus*

(iii) *Bacillus Subtilis*

(iv) *Xanthomonas citri*

2. Answer the following questions : **(any five)**
2×5=10

(a) What is pyrenoid? How is it involved in photosynthesis?

(b) Write the name of *two* N_2 fixing soil bacteria.

(c) Differentiate between viroids and prions.

(d) Write *two* fresh water green algae occurring in the local river.

(e) Define bacterial chromosome or genophore.

(f) Name *two* outbreaks due to zoonotic virus.

(g) In which organism does conjugation take place? What is the end product of conjugation?

3. Answer the following questions : **(any five)**
5×5=25

(a) Write an explanatory note on lytic cycle of a T_2 bacteriophage.

(b) Write an illustrative note on globule of chara.

(c) How many distinct groups of bacteria according to their shape? What are these? Give *one* example of each group.
1+2+2=5

(d) Draw and describe a heterocyst. Mention the function of it. 2+2+1=5

(e) Explain the process of development of plurilocular sporangium and liberation of zoospores in *Ectocarpus* with a suitable diagram.

- (f) Differentiate between haplontic and diplontic life cycle.
- (g) Write *at least five* popular food items which are produced from algae.
- (h) What is dwarf male of oedogonium? Write a note on the development process of dwarf male with a diagram.
1+2+2=5
- (i) Give a list of *five* human diseases and *five* plant diseases caused by virus.

4. Answer the following questions : **(any two)**
10×2=20

- (a) Give an account of volvox. Illustrate in brief its various mode of reproduction with suitable diagrams. 6+4=10
- (b) What is virus? Write the Baltimore system of classification of virus and mention *one* example of each group.
1+5+4=10
- (c) Write an illustrated note on the range of thallus structure in algae.
- (d) With a neat labelled diagram, discuss bacterial transformation and transduction. 4+3+3=10