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3 (Sem-1/CBCS) BOT HC 1

2023

BOTANY

(Honours Core)

Paper : BOT-HC-1016

(Phycology and Microbiology)

Full Marks : 60

Time : Three hours

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

1. Answer the following: 1×7=7

- (a) What is Cyanotoxin ?
- (b) Who discovered viroids ?
- (c) What is PrPSc ?
- (d) Name the chief chemical compound of bacterial cell wall.
- (e) What is Hfr strain of bacteria ?
- (f) Name the pigments found in Xanthophyceae ?

Contd.

- (g) From which algae agar-agar is obtained.
2. Write the difference in between: $2 \times 4 = 8$
- (a) Anabolic and Catabolic reactions
 - (b) Generalized and specialized transduction
 - (c) Archaea and bacteria
 - (d) Unilocular and Plurilocular sporangia
3. Write short noted on the following :
(any three) $5 \times 3 = 15$
- (a) T.M.V.
 - (b) Carposporophyte
 - (c) Transformation in bacteria
 - (d) Algae as food and fodder
 - (e) Application of virus in human welfare
4. Answer the following: (any three) $10 \times 3 = 30$
- (a) What are the nutritional requirements of bacteria? Write briefly about the nutritional groups of bacteria.
 $2 + 8 = 10$
 - (b) Illustrate the evolution of sexual reproduction in algae. 10

- (c) What do you mean by alternation of generations? Explain your answer with reference to the life history of *Polysiphonia*. $2 + 8 = 10$
- (d) What is a bacteriophage? Describe the structure of bacteriophage with neat diagram. Write the difference between T even and T odd bacteriophage.
 $1 + 7 + 2 = 10$
- (e) Write the cell structure and the process of auxospore formation in Bacillariophyceae. $5 + 5 = 10$
- (f) Write in detail how microbes contribute to clean the environment and maintain soil health. $5 + 5 = 10$