

U.G. 1st Semester Examination - 2021**BOTANY****Course Code : BBOTCCHC 101****Course Title: Phycology and Microbiology**

Full Marks : 30

Time : 2 Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*1. Answer any **ten** questions from the following:

1×10=10

- a) What are beta-lactam antibiotics? Cite an example.
- b) What is pantonematic flagellum?
- c) Which type of bacteria is believed to be the ancestor of mitochondria and chloroplast?
- d) What do you mean by fastidious bacteria?
- e) What is cryptophytic alga?
- f) What is cyanobacteria? State its significance.
- g) Define provirus.

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- h) What is Hfr strain?
- i) In what phase, bacterial growth is equal to that of bacterial death?
- j) What do you mean by negative sense RNA virus?
- k) Name the photosynthetic pigments of Rhodophyceae.
- l) What were the criteria of algal classification proposed by R.E.Lee (1999)?
- m) What is episome?
- n) State the evolutionary significance of the Division Glaucophyta.
- o) Distinguish between antiseptic and disinfectant.

2. Answer any **five** questions from the following:

2×5=10

- a) Write any two uses of plasmid.
- b) What do you mean by batch culture? Mention the importance of batch culture in industrial microbiology.
- c) 'Prochloron represent the missing link between prokaryotic algae and chloroplast'— Justify the statement.
- d) Write the contributions of F.E.Fritsch in Phycology.

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- e) Distinguish between generalized and specialized transduction.
- f) What are competent cells? Distinguish between natural competence and artificial competence.
- g) State two differences between eukaryotic and prokaryotic genome.
- h) How do algal blooms related to eutrophication? Name an alga used as a pollution indicator.

3. Answer any **two** questions from the following:

5×2=10

- a) Differentiate between a temperate and virulent phage. Discuss the role of cro-protein in the occurrence of lytic or lysogenic cycle in temperate phage. Define lysogen. 1+3+1
- b) Describe the ultrastructure of flagella of Gram-negative bacteria with suitable illustration.
- c) Describe briefly the life cycle of *Fucus* with suitable diagram.
