B.Sc. 1st Semester (Honours) Examination, 2017 (CBCS)

Subject : Botany

Paper : CC-I (Theory)

Time: 2 Hours **Full Marks: 40**

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.
Answer all questions.

1. Answer *any five* of the following: 2×5=10

(a) Distinguish between murein and pseudomurein.

(b) What are prions? Name one disease caused by prions.

(c) Name one antibiotic producing bacteria and one genus used as biofertilizer other than blue green algae.

(d) Why does photoorganotroph considered as heterotroph?

(e) Distinguish between primary and secondary endosymbiosis.

(f) What is phycobilisome? Give example.

(g) What do you mean by synzoospores? Give example where is it found.

(h) The cell wall of cyanophycean algae is basically the same as that of Gram negative bacteria—explain.

2. Answer *any two* of the following: 5×2=10

(a) Write the basic differences between $F^+ X F^-$ and $HfrX F^-$ conjugation in bacteria. 2½+2½=5

(b) Briefly discuss the structure of Gram (–) bacterial flagella with suitable diagrams. 3+2=5

(c) Describe briefly the structure of male sex organ of *Chara* with suitable sketches. Comment on the systematic position of *Chara*. 3+2=5

(d) Give a brief account of structure and function of Heterocyst. Name a marine non-heterocystous cyanobacteria. 4+1=5

3. Answer *any two* of the following: 10×2=20

(a) How does lytic cycle of bacteriophage differ from lysogenic cycle? Discuss the different stages of lytic cycle of a virulent phage with suitable diagram. 4+(4+2)=10

(b) Give the structure of bacterial endospore with suitable diagram. Why endospore is heat resistant? What is plasmid? What are the different types of plasmid and how does it differ from episome? (4+1)+1+(2+2)=10

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(c) What is a nannandrium? Describe briefly the sexual cycle in macrandrous species of *Oedogonium*. In what way does the sexual reproduction of the macrandrous *Oedogonium* differ from that of the nannandrous species? 2+5+3=10

(d) In what respects do the red algae resemble and differ from the blue green algae? What is triphasic life cycle? Give a diagramatic representation only of post fertilization changes of an alga showing triphasic life cycle. 3+2+5=10