

B.Sc. 1st Semester (Honours) Examination, 2019 (CBCS)**Subject : Botany****Paper : CC-I****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.*

1. Answer *any five* questions from the following: 2×5=10
- (a) Differentiate between gynandrosporous and idioandrosporous species of *Oedogonium*. 2
- (b) Explain the complementary chromatic adaptation in Algae. 2
- (c) Define antibiotic. Name one antibiotic of bacterial origin. 1½+1½=2
- (d) What is pseudomurein? How does it differ from murein. 1+1=2
- (e) Distinguish between fimbriae and pili. 2
- (f) What do you mean by photolithotrophic and chemolithotrophic bacteria? 2
- (g) Distinguish between spermocarp and cystocarp. 2
- (h) What are phycocolloids? Give examples. 2
2. Answer *any two* questions from the following: 5×2=10
- (a) Draw and label the male and female sex organs of *Chara*. 2½+2½=5
- (b) Discuss briefly the triphasic life cycle of polysiphonia with suitable diagram. Mention one similarity between Rhodophyceae and Cyanophyceae. 4+1=5
- (c) Briefly describe the structure of endospore with proper diagram. Comment on the adaptive significance of this structure. 4+1=5
- (d) Define plasmid. Write the types plasmids. Differentiate between plasmid and episome. 1+3+1=5
3. Answer *any two* questions from the following: 10×2=20
- (a) Describe the life cycle of *Vaucheria*. What is Synzoospore? Name one Terrestrial species of *Vaucheria*. 8+1+1=10
- (b) Write the process of $F^+ \times F^-$ and $Hfr \times F^-$ conjugation in bacteria. What is F' (F-Prime)? 4+4+2=10
- (c) Draw and describe the structure of TMV. Describe the different stages of lytic cycle of a virulent phage with suitable diagram. What is prophage? 4+5+1=10
- (d) What is a nannandrium? Describe briefly the sexual cycle in nannandrous species of *Oedogonium*. In what way does the sexual reproduction of the macrandrous species differ from that of the nannandrous species of *Oedogonium*. 2+6+2=10