St. JOSEPH'S COLLEGE (AUTONOMOUS), BANGALORE – 27
MID SEMESTER TEST – AUGUST 2016
M.Sc. MICROBIOLOGY – I SEMESTER
MB 7116 : MICROBIAL DIVERSITY

Time : 1½ hrs **Maximum Marks : 35**

I. Answer any five of the following. **5x2=10**

1. List the distinguishing features of gas vacuoles.
2. What are mesosomes? What are their functions?
3. Explain the theory of endosymbiosis.
4. What would happen if D-Ala is removed from the tetrapeptide attached to NAM?
5. You perform serial dilution and determine that the original number of bacteria in your sample is 12000. How many bacteria will be present in 12hours, if the generation time of the bacteria is 15minutes? (Assume unlimited nutrient supply)
6. What are coprophilous fungi? Give examples.
7. List the adaptations seen in acidophiles.

II. Answer any two of the following. **2x5=10**

8. Give an account of the different types of reproduction seen in algae.
9. Illustrate the concept of substrate succession.
10. Explain how bacteria can be cultured by the continuous method.

III. Answer any one of the following. **1x10=10**

11. *E.coli* is known to be a very motile organism. Explain the structure of the organ and the mechanism responsible for this motility.
12. A suspension of *Bacillus* sp. is exposed to a stream of hot air (temperature around 80^0C) for 2 to 3 days. Would the bacteria survive this treatment? If yes, then explain the mechanism adopted to ensure survival.

IV. Answer the following. **1x5=5**

13. In a typical bacterial cell dividing by binary fission, what would be the outcome of the following events? Justify your answers.

    a. Mre B is mutated to an inactive form. **(1.5)**
    b. Min E is not synthesized in the cell. **(2)**
    c. FtsZ fails to polymerize. **(1.5)**