

**F. Y. B. Sc. (Biotechnology) SEM – II (CBCS - 2015 COURSE) :**  
**WINTER - 2018**

**Subject: Introduction to Microbiology**

Day: Saturday  
Date: 20/10/2018

**W-2018-1170**

Time: 02.00 PM TO 05.00 PM  
Max. Marks: 60

**N.B.:**

- 1) Q1 and Q5 are compulsory.
- 2) Answer ANY TWO questions from Q 2, 3, 4 in Section I.
- 3) Answer ANY TWO questions from Q 6, 7, 8 in Section II.
- 4) Answers to Both the sections to be written in SEPARATE answer books.
- 5) Draw a labeled diagram WHEREVER necessary.

**SECTION - 01**

Q.1) Answer the following: (ANY FIVE) (2 Marks X 5 = 10)

- a) What is pure culture technique?
- b) Mention types of lenses present in compound microscope with their role
- c) Mention two important contributions made by Robert Koch.
- d) What are acidic and basic dyes? Give one example of each
- e) What are different types of flagellar arrangement in bacteria?
- f) Name the unique D-amino acids present in peptidoglycan structure. Mention its role

Q.2) Answer the following: (5 Marks X 2 = 10)

- a) Mention the role of immersion oil in increasing the resolution of microscope
- b) Discuss the principle and working of SEM

Q.3) Explain the following: (5 Marks X 2 = 10)

- a) Explain the principle and working of fluorescence microscopy.
- b) Contributions of Robert Koch

Q.4) Write short notes on the following: (5 Marks X 2 = 10)

- a) Francisco Redi's experiment
- b) Bergey's manual of systematic bacteriology

**SECTION - 02**

Q.5) Answer the following: (ANY FIVE) (2 Marks X 5 = 10)

- a) What is pathovar and phagovar?
- b) What is the role of capsule in bacteria?
- c) Mention phases of growth curve. What is generation time?
- d) What are facultative anaerobic microorganisms?
- e) What are chemoorganotrophs? Give example
- f) Define Stationary phase.

Q.6) Answer the following: (5 Marks X 2 = 10)

- a) Explain the structure of bacterial endospore.
- b) Explain the ultrastructure of flagella.

Q.7) Explain the following: (5 Marks X 2 = 10)

- a) Determination of DNA base composition in identification of bacteria
- b) Explain the process of sterilization with reference to autoclave

Q.8) Write short notes on the following: (5 Marks X 2 = 10)

- a) Nutritional types of bacteria
- b) Use of alcohol and phenolics for control of microorganisms

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