

**M. Sc. (Biotechnology) Sem-I (2012 Course)(Choice Based Credit System) : WINTER - 2018**

**SUBJECT : MICROBIOLOGY BASIC AND APPLIED**

Day : Friday  
Date : 26/10/2018

**W-2018-1206**

Time : 10.00 AM TO 01.00 PM  
Max. Marks : 60

**N. B. :**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in the **SEPARATE** answer books.
- 4) Draw neat and labeled diagram **WHEREVER** necessary.

**SECTION – I**

- Q. 1** Answer **ANY FIVE** of the following: (10)
- a) What is sanitization? Give two examples of sanitizers.
  - b) What are siderophores? Explain its functions.
  - c) What are chemotrophic microorganisms? Give two examples.
  - d) Write the structure of fungal cell wall.
  - e) What are obligate anaerobic bacteria? Give two examples.
  - f) What are phototrophic micro organisms? Give two examples.
- Q. 2** Answer **ANY TWO** of the following: (10)
- a) Explain the different methods used for the cultivation of anaerobic bacteria.
  - b) With the help of diagram, explain the structures and functions of an autoclave.
  - c) Explain the mechanism of passive transport of nutrients in microbes.
- Q. 3** Answer **ANY TWO** of the following: (10)
- a) Explain the ray diagram of TEM. Write its advantages.
  - b) Explain in detail the process involved in bacterial conjugation.
  - c) Explain steps involved in bacterial cell division.

**SECTION – II**

- Q. 4** Answer **ANY FIVE** of the following: (10)
- a) Explain morphology of adenovirus.
  - b) Explain various methods of release during the reproduction of animal virus.
  - c) Explain cultivation of animal virus in cell lines.
  - d) Explain Baltimore classification of virus.
  - e) Explain antigenic shift in influenza.
  - f) Explain structure of pox virus.
- Q. 5** Answer **ANY TWO** of the following: (10)
- a) Explain lytic life cycle of bacteriophage.
  - b) Explain life cycle of influenza virus.
  - c) Explain infection cycle of Polio virus.
- Q. 6** Answer **ANY TWO** of the following: (10)
- a) Explain the steps involved in alcohol fermentation from molasses.
  - b) What are secondary metabolites? Write its applications.
  - c) What is biofertilizer? Explain steps involved in production of biofertilizer.

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