

**MASTER OF SCIENCE (MEDICAL BIOTECHNOLOGY) (CBCS-2018 COURSE)**  
**M.Sc. (Medical Biotechnology) Sem-I : WINTER :- 2021**  
**SUBJECT: MICROBIOLOGY**

**Day : Tuesday**  
**Date 1/2/2022**

**W-20215-2021**

**Time : 02:00 PM-05:00 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 **SEPARATE** answer books.

**SECTION – I**

- Q.1** Attempt any **FIVE** of the following: **(10)**
- a) What is 8 kingdom system of classification of microorganisms?
  - b) Name the antigens associated with capsule and flagella of bacteria.
  - c) What are molecular chaperons?
  - d) What is the cell wall composition of fungi?
  - e) What is cytokinesis?
  - f) Mention various habitats with alkaline pH and give the examples of organisms inhabiting it.
  - g) What is the temperature ranges for psychrophiles, mesophiles and thermophiles?
- Q.2** Attempt any **TWO** of the following: **(10)**
- a) Describe the bacterial endospores with location, chemical composition and function.
  - b) Briefly discuss the biosynthetic pathways in archea.
  - c) Differentiate between archea and other organisms with respect to DNA replication, transcription and translation.
- Q.3** Write short notes on any **TWO** of the following: **(10)**
- a) Methods of cultivation of anaerobes.
  - b) Mechanism of survival of bacteria in low a/w habitat.
  - c) Toxic effects of oxygen on growth of bacteria with reason.

**SECTION – II**

- Q.4** Attempt any **FIVE** of the following: **(10)**
- a) Define the term 'Commensalism'.
  - b) What are lichens?
  - c) Enlist the antibiotics inhibiting proteins synthesis.
  - d) What are the side effects of Quinolones?
  - e) Enlist s:s RNA viral families of eukaryotes.
  - f) Give the classification of s:s RNA (+) plant viruses.
  - g) What is polyphasic taxonomy?
- Q.5** Attempt any **TWO** of the following: **(10)**
- a) Justify 'microbial community in the rumen is extremely dynamic'.
  - b) How are predation and parasitism similar and different?
  - c) Discuss the pathogenicity of subcutaneous mycoses.
- Q.6** Write short notes on any **TWO** of the following: **(10)**
- a) What is the mode of action of anti-viral drugs?
  - b) What are sulpha drugs? Enlist various members of sulpha drugs with their mode of action.
  - c) Enlist the methods of taxonomy with their applications and explain G+C content method of taxonomy.

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