

M. Sc. (Biotechnology) Sem-I / M. Sc. (Medical Biotechnology) Sem- I
(CBCS 2018 Course) : WINTER - 2018

SUBJECT : MICROBIOLOGY

Day : Tuesday
Date : 23/10/2018

W-2018-1220

Time : 10.00 AM TO 12.00 Noon
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 3 domain system of classification of microorganisms?
 - b) What are the functions of capsule of bacteria?
 - c) What is the chemical composition of archeal cell wall?
 - d) Mention the morphological classification of fungi with examples.
 - e) What are replisomes?
 - f) What is a/w? Name the various environments with low a/w.
 - g) Why anaerobes cannot grow in the presence of oxygen?
- Q.2** Attempt any **TWO** of the following: **(10)**
- a) Describe transcription and translation in archea.
 - b) What are cytoplasmic inclusions? Mention their types and functions.
 - c) Draw a neat and well labeled diagram of typical fungal cell and discuss the structures of fungi with their chemical composition and function.
- Q.3** Write short notes on any **TWO** of the following: **(10)**
- a) Mechanisms of survival of bacteria in acidic habitat.
 - b) Mechanism of survival of bacteria in hypotonic and hypertonic environments.
 - c) Metabolic and structural adaptations for extreme temperatures in thermophiles.

SECTION – II

- Q.4** Attempt any **FIVE** of the following: **(10)**
- a) Define the term 'predation' and 'parasitism'.
 - b) What are 'zooxanthallae'?
 - c) Give the examples of antibiotics causing inhibition of nucleic acid synthesis.
 - d) What are the side effects of polymyxin-B?
 - e) Mention the examples of s:s DNA phages of bacteria.
 - f) Give the examples of insect viruses.
 - g) What is the polyphasic taxanomy?
- Q.5** Attempt any **TWO** of the following: **(10)**
- a) Why nitrification is a good example of 'commensalism'?
 - b) Discuss the pathogenicity of intestinal and hemoparasites.
 - c) Justify 'the sphagnum-methanotroph mutualism results in c-cycling'.
- Q.6** Write short notes on any **TWO** of the following: **(10)**
- a) Discuss the ICTB classification of eukaryotic DNA viruses with examples.
 - b) Describe the different capsid morphologies of plant viruses with examples.
 - c) Discuss the methods of genomic finger printing.

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