

Sem IV  
CBSCS

Microbiology

March  
2015

QP Code : 15851

[3 Hours]

[Total Marks: 70]

- N.B. : (1) All questions are compulsory.  
(2) Draw a neat labelled diagram wherever necessary.

1. Answer the following:—

- |                                                                                             |   |
|---------------------------------------------------------------------------------------------|---|
| (a) Name two examples of sporulating bacteria.                                              | 1 |
| (b) Define pasteurization with examples.                                                    | 1 |
| (c) Explain D value with its applications.                                                  | 1 |
| (d) Write the biological indicator for filtration sterilization.                            | 1 |
| (e) Give the importance of positive control used in sterility testing.                      | 1 |
| (f) Name the causative agent for botulism.                                                  | 1 |
| (g) Write the diagnostic test for tuberculosis.                                             | 1 |
| (h) Define differential media with suitable examples.                                       | 2 |
| (i) Name two Rickettsial infections with the causative agents.                              | 2 |
| (j) Write Robert Koch's contribution in the field of Microbiology.                          | 2 |
| (k) Define Resolving power and give its significance.                                       | 2 |
| 2. (a) Discuss in detail phase contrast microscopy with its applications.                   | 4 |
| (b) Discuss dry heat sterilization with respect to method, mode of action and applications. | 4 |
| (c) Write a note on cultivation of anaerobic bacteria.                                      | 3 |
| 3. (a) Discuss in detail phenol coefficient test and its applications.                      | 4 |
| (b) Describe lytic cycle in $T_4$ bacteriophage with suitable diagram.                      | 4 |
| (c) Distinguish between (any one):—                                                         | 3 |
| (i) Bacteria and fungi                                                                      |   |
| (ii) Electron and compound microscope                                                       |   |
| 4. (a) Write a note on fungal infections.                                                   | 4 |
| (b) Explain in brief growth phases of bacteria.                                             | 4 |
| <b>OR</b>                                                                                   |   |
| Write a note on bacterial flagella.                                                         |   |
| (c) Explain the mechanism and applications of gaseous sterilization.                        | 3 |

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5. (a) Describe in detail cultivation of viruses. 4  
(b) Write a note on mode of action and application of hologens as disinfectant. 4  
(c) Describe protozoal infections. 3

OR

Define pure culture and explain any two techniques of isolation of pure culture.

6. (a) Explain identification of bacteria on the basis of morphological and nutritional characters. 4  
(b) Write a principle of spore staining and Capsule staining. 4

OR

Why Gram positive bacteria appear purple and gram negative appear pink in colour explain with suitable theory.

- (c) Explain in brief biological and economic importance of algae. 3