

M.E. First Semester (Civil (Environmental Engg.)) (P.T.) (CGS)

13382 : Environmental Microbiology : 1 SCEE 2

P. Pages : 1

Time : Three Hours



AU - 3212

Max. Marks : 80

- Notes :
1. All question carry equal marks.
 2. Answer **three** question from Section A and **three** question from Section B.
 3. Due credit will be given to neatness and adequate dimensions.
 4. Assume suitable data wherever necessary.

SECTION – A

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|----|------|---|----|
| 1. | a) | Differentiate between Prokaryotic and Eukaryotic cells. | 7 |
| | b) | Discuss the various applications of microbiology. Explain in details the applications in environmental field. | 7 |
| 2. | a) | Write in details about the size, shape and arrangement of bacterial cell. Explain the nutritional requirement for the growth of bacteria. | 7 |
| | b) | What are the major differences between gram positive and gram negative bacteria? | 6 |
| 3. | a) | Describe in details about the sampling procedure to be adopted for collection of water sample from tap and reservoir. | 7 |
| | b) | What is pure culture? Describe any one method of isolation of pure culture. | 6 |
| 4. | a) | What are the six major classes of enzymes. Explain their catalytic reaction. | 6 |
| | b) | Discuss the characteristics of enzymes. Explain on the basis of nomenclature. | 7 |
| 5. | | Explain in brief:- | 13 |
| | i) | Generation time. | |
| | ii) | Anabolism and catabolism. | |
| | iii) | Oxygen Sag curve. | |

SECTION – B

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|-----|----|--|----|
| 6. | a) | What are the various methods of preservation of pure culture? State the advantages and disadvantages. | 7 |
| | b) | Compare the advantages and disadvantages of the various techniques for the isolation of micro- organism in pure culture. | 7 |
| 7. | a) | What is staining? Explain gram staining. | 7 |
| | b) | What are the viral diseases? How viruses can be controlled? | 6 |
| 8. | a) | Describe the role played by micro- organism in waste water treatment. | 7 |
| | b) | Explain the microbial activities that occur in septic tank. | 6 |
| 9. | a) | What are the differences between air borne infection diseases and diseases caused by Air pollution? | 7 |
| | b) | Name air- borne infections, their symptoms and their causative organisms. | 6 |
| 10. | | Write in Details. | 13 |
| | a) | Effect of Temp, pH on growth of bacteria. | |
| | b) | Sampling of air. | |
| | c) | Antagonism and synergism. | |
