

M.E. First Semester (Civil (Environmental Engg.)) (P.T.) (CGS)
13382 : Environmental Microbiology
1 SCEE 2

P. Pages : 2

Time : Three Hours



AW - 3662

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. | 7 |
| | b) | Explain why some species of cocci appears as chain but others appears in cuboidal arrangement. | 7 |
| 2. | a) | Explain the nutritional requirement of the growth of bacteria and write about the size, shape and arrangement of bacterial cell. | 7 |
| | b) | Draw a sketch of a typical bacteria. Explain the inclusions present within in the cell. | 6 |
| 3. | a) | Describe in detail about the sampling procedure to be adopted for collection of water samples from tap and reservoir. | 7 |
| | b) | Explain what is meant by regeneration? Explain in detail the growth pattern of bacteria. | 6 |
| 4. | a) | Discuss the characteristics of enzymes and explain the basis of nomenclature. | 7 |
| | b) | What are the six major classes of enzymes. Explain their catalytic reaction. | 6 |
| 5. | | Explain in brief. | 13 |
| | i) | Lake eutrophication and its application. | |
| | ii) | Limnology. | |
| | iii) | Oxygen concentration. | |

SECTION – B

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| 6. | a) | Distinguish between the meaning of the mixed culture, Pure culture, clone and strain. | 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 coliforms present in water? What are the indicators of pollutions? 6
8. a) Describe the role played by Algae, fungi and protozoa in environmental engineering. 7
- b) Explain the microbial activities that occur in septic tank. 6
9. a) What are the difference between air borne infection diseases and diseases caused by Air pollution? 7
- b) What is nitrification and denitrification? How do microorganisms plays important in this process. 6
10. Write in details. 13
- i) Sampling of air.
- ii) Effect of temperature, pH on growth of bacteria.
- iii) Toxic substances on growth of bacteria.
