FYUGP/Sem-6/BT-CE1

2026

Botany (Core)

Paper Code : BT-CE-6314

Paper Name : Advanced Microbiology

Time : 2 hours ***Full Marks : 50***

The figures in the margin indicate full marks for the questions.

1. Answer the following questions : 1×4=4
   a) What is the single cell protein ?
   b) Write the name of casual microbe of the disease "Rocky Mountain Spotted Fever".
   c) What is antigen-antibody reaction ?
   d) Who proposed the "Germ theory of Diseases".
2. Answer the following questions : 2×3=6
   a) Write differences between Abiogenesis and Biogenesis.
   b) What is Koch's Postulation ?
   c) Which cellular microbes are called as energy parasite and why?
3. Answer the following questions ***(any two)*** : 5×2=10
   a) Discuss the modern branches of Microbiology.
   b) What are Archaebacteria ? Briefly describe the typical characters of Archaebacteria.
   c) Microbial bioremediation of polluted soil - explain briefly.
   d) Write the characteristics used in microbial Taxonomy.

Contd..

4. Answer the following questions ***(any three)*** : 10×3=30

a) Discuss the contribution of Edward Jenner, Joseph Lister and Louis Pasteur in the field of microbiology. 10

b) Describe the bacterial recombination mechanisms of conjugation and transduction with labelled diagram. 10

c) "Nature maintains soil fertility by biogeochemical cycle". Illustrate the statement citing example of N_2 cycle. 10

d) What are the differences between Gram positive and Gram negative bacterial cell wall ? Discuss the molecular composition level of the outer membrane of a Gram negative bacterial cell wall. 4+6=10

e) Describe the detail structure of immunoglobin with labelled diagram. 10

f) Explain various steps of alcohol fermentation and write a note on the microbes involved in the process. 10

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