

2025

M.Sc. 3rd Semester Examination

ZOOLOGY

Paper : ZOO - 305

(Microbiology)

Full Marks : 25

Time : One Hour

The figures in the margin indicate full marks.

Candidates are required to give their answers

in their own words as far as practicable.

Answer any *two* questions : $2 \times 2 = 4$

1. Differentiate simple media from synthetic culture media.
2. What are mesosomes and inclusion granules?
3. What are the unique methods of cell-to-cell communication in bacteria?
4. What is generation time? How is it related to bacterial growth? $1+1$

Answer any *two* questions : $4 \times 2 = 8$

5. Discuss the various planes of division occurring in bacterial cells and the resultant forms with suitable diagrams.

P.T.O.

(2)

6. Elaborate the reasons behind lag phase and stationary phase in the growth curve of typical bacteria. Compare Capnophils and Microaerophils. 2+2
7. Elucidate the role of various microbes in soil environment with suitable diagram.
8. Briefly illustrate the structure of bacterial cell wall.

Answer any *one* question : 8×1=8

9. (i) Illustrate the different colonial patterns observed upon bacterial culture. State the difference between autotrophs and heterotrophs.

(ii) Highlight the reason for high resistance of Spores in Bacteria. Mention the characteristics of Mycoplasma and Actinomycetes. (3+1)+(2+2)
- 10 Write short notes on : 2×4=8
 - (i) Episome and Plasmid
 - (ii) Working principle of Scanning Electron Microscope
 - (iii) Benchtop tests
 - (iv) Host preferences in Viruses

Internal Assessment : 5 marks
