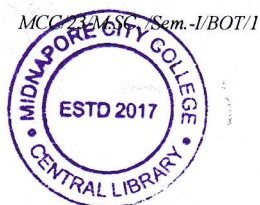


PG CBCS
M.Sc. Semester-I Examination, 2023
BOTANY
PAPER: BOT 101
(MICROBIOLOGY)



Full Marks: 40

Time: 2 Hours

The figures in the right-hand margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

GROUP-A

1. Answer any **FOUR** questions of the following: 4×2=8

- a) What is viroid?
- b) Differentiates polyclonal with monoclonal antibodies.
- c) Name the components of Nitrogenase enzymes
- d) What is aerosol? Name two diseases transmitted by aerosol.
- e) Define NOD factors.
- f) Mention the role of microorganisms in nitrification process.

GROUP-B

2. Answer any **FOUR** questions of the following: 4×4=16

- a) Write a short note on monoclonal antibody production.
- b) What is sexduction? Compare F^- , F^+ , Hfr and F' 1+3
- c) Describe the various types of enzymes involved in gene cloning with their importance.
- d) What is prion? Give example of a disease caused by it? Compare a specialized and generalized transduction. 1+1+2
- e) Discuss Synchronous and continuous cultures of bacteria. 2+2
- f) Mention different ways of activation of oncogenes to cause cancer.

GROUP-C

3. Answer any **TWO** questions of the following: 8×2=16

- a) Briefly describes the production process of Bel. Differentiate homolactic and heterolactic fermentation. Why fermented foods are beneficial for health? 4+2+2
- b) Briefly discuss the significance of different phases of bacterial growth curve with a suitable diagram. Explain the molecular mechanism behind the nitrogen fixation. 4+4

(P.T.O.)



(2)

c) What is Taq polymerase and why is it important? Discuss interrupted experiment for gene mapping in bacteria. Mention the role of DNA ligase in molecular cloning.

2+5+1

d) Write notes on a) Plaque Assay

3+3+2

i. Immunodiffusion

ii. ED pathway (Schematic)
