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B.Sc. (CBCS) (Semester -V)  
EXAMINATION NOVEMBER 2022  
Botany  
Microbiology and Plant Pathology

[Duration: 2 Hours]

[Total Marks: 80]

**Instructions:**

1. All questions are compulsory.
2. Figure to the **right** indicates maximum marks assigned to the question.
3. Draw appropriate labelled diagrams **wherever** necessary.

Q.1 Answer any four of the following: 16

- i) Comment on the disposal of laboratory wastes and cultures.
- ii) Explain the technique of lyophilization.
- iii) What are biodegradable plastics? How are they produced?
- iv) Explain any two induced structural defense mechanisms in plants.
- v) How does water bring about dissemination of plant pathogens?
- vi) Write a brief note on IPM.

Q.2 Answer any four of the following: 16

- a) Classify culture media based on consistency.
- b) Describe any two methods for purification of water.
- c) Explain the process of bread making.
- d) Explain Koch's postulates.
- e) How are trap crops and antagonistic plants used in controlling diseases?
- f) Comment on the role of Plant Disease Clinics in plant pathology.

Q.3 A) What is bioremediation? Explain the role of microorganisms in the process. 6

OR

- A) Write briefly on any four physical methods for sterilization. 6
- B) Explain the role of microorganisms in the production of vinegar. 6

Q.4 A) How do soil microorganisms bring about decomposition of plant residues? 6

OR

- A) Explain the standard multiple tube fermentation technique for determining potability of a given water sample. 6
- B) Describe the hanging drop and stab culture method for checking bacterial motility. 6

Q.5 A) Name any four plant disease symptoms and state the characteristics of each. 6

OR

- A) Explain the stages involved in establishment of disease in plants. 6
- B) Write briefly on monocyclic and polycyclic plant disease epidemics. 6



Q.6

A) Explain the role of virulence and avirulence genes in plant disease development.

6

OR

A) Explain the use of remote sensing and image analysis in plant pathology.

6

B) Explain the various physical methods employed in managing plant diseases.

6