No. of Printed Pages : 3

Roll No. .....

312511

S–220(A)-N

B.Sc. (Second Semester)
NEP Examination, 2024-25
BOTANY
(Microbiology and Plant Pathology)
[SOLS/BOT/MD]

Time : Two Hours] **[Maximum Marks : 70**

Note : (i) Attempt any *five* questions from Section A and any *three* questions from Section B.

(ii) Answer each question of Section A within 50 words.

(iii) Limit your answers within the given answer book. Additional answer book (B-Answer book) should not be provided or used.

(Section–A)

Note : Attempt any *five* questions. Each question carries 5 marks.

1. Write down the contributions of Louis Pasteur in the field of microbiology.

2. What is meant by "Theory of spontaneous generation". Explain, how Francesco Redi and Lazzaro Spallanzani were tried to disprove this theory?

3. Give a general description on different stages of plant virus replication.

4. Explain the role of environment in plant disease development.

5. Give a brief account on the economic importance of Bacteria.

6. Describe the steps involved in Gram's Staining of Bacteria. Furthermore, add a comment on how Gram-Positive and Gram-Negative bacterial samples are identified based on color difference.

7. Write down the causative agent, disease symptoms and control measures of little leaf disease of Brinjal.

8. Describe the simple classification of bacteria based on the cell structure and arrangement.

(Section–B)

ote : Attempt any *three* questions. Each question carries 15 marks.

1. Describe the Lytic and Lysogenic life cycle of T4 Phages with suitable diagrams. Give a labelled diagram of a T4 Phage.

2. Describe the following terms in detail :
   (a) Citrus Canker.
   (b) Mosaic disease in sugarcane.
   (c) Loose smut of Wheat.

3. Give an elaborate account on the structure, protein coding genes, spreading mechanisms and control measures of Tobacco Mosaic Virus (TMV).

4. Discuss in detail about various types of disease resistant mechanisms found in plants.

5. Explain the role of microorganisms in Nitrogen metabolism. Give a brief comment on symbiotic and asymbiotic nitrogen fixing microorganisms.

6. Describe the details of cell structure, reproduction and various types of genetic recombinations found in Bacteria.
