

**G-3/358(A)/22**

Roll No. ....

**III Semester Examination, January 2022**

**M.Sc.**

**BOTANY**

Paper IV

(Molecular Plant Pathology-I)

Time : 3 Hours ]

[ Max. Marks : 80

**Note :** *All questions are compulsory. Question Paper comprises of 3 Sections. Section A is objective type/multiple choice questions with no internal choice. Section B is short answer type with internal choice. Section C is long answer type with internal choice.*

**SECTION A**

**1×8=8**

**(Objective Type/Multiple Choice Questions)**

*Choose the correct answer :*

1. Loose smut of barley is :
  - (a) Seed borne
  - (b) Externally seed borne
  - (c) Internally seed borne
  - (d) All of the above

P.T.O.

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2. Witches broom in different plants is caused by :  
(a) MLO (b) Virus  
(c) Fungi (d) All of these
3. Which of the following is a facultative parasitic fungi ?  
(a) Pythium, phytophthora  
(b) Fusarium  
(c) Armillaria  
(d) All of the above
4. Who did most of his work on rust disease in India ?  
(a) R.S. Singh (b) K.C. Mehta  
(c) B.B. Mundakar (d) E.J. Butler
5. First plant parasitic nematode discovered was :  
(a) Meloidogyne (b) Heterodera  
(c) Anguina (d) Globodera
6. Late blight of potato was caused by :  
(a) Alternaria Solani  
(b) Xanthomonas compestris  
(c) Phytophthora infestens  
(d) Cercospora personata

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7. Enzymes required for pathogenesis are :  
(a) Cutinase (b) Cellulose  
(c) Pectinase (d) All of these
8. Pathogenic bacteria are usually :  
(a) Gram positive (b) Gram negative  
(c) Neutral (d) All of these

**SECTION B**

**4×6=24**

**(Short Answer Type Questions)**

**Note : Answer the following questions in 250 words.**

**Unit-I**

1. Define the following terms :  
(a) Inoculum  
(b) Pathogenesis  
(c) Pathogenesis  
(d) Epidemic and pandemic diseases  
(e) Incubation period  
(f) Virion and viroids  
(g) Disease cycle  
(h) Obligate parasite

*Or*

Write short note on general characteristics of viruses.

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## Unit-II

- 2. Write short note on Koch postulates.**

$$Or$$

Write short note on PDA media.

### Unit-III

- 3. Write short note on rhizosphere and phyllosphere studies.**

*Or*

Write short note on dissemination of plant pathogens.

## Unit-IV

4. Write short note on predisposing factors.

*Or*

Give a brief account of role of toxins in pathogenesis.

## SECTION C

$$4 \times 12 = 48$$

**(Long Answer Type Questions)**

**Note :** Answer the following questions in 500 words.

## Unit-I

1. What do you mean by a disease ? Give a detailed classification of plant diseases.

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*Or*

Give a general account of Mycoplasma.

## Unit-II

- 2. Write an essay on culture technique of studying plant diseases.**

*Or*

Describe various methods used in the study of bacteria.

### Unit-III

- 3. What is Pathogenesis ? Describe the path of infection in plants by pathogens.**

*Or*

Describe the dissemination of plant pathogens.

## Unit-IV

4. Describe the role of enzyme in pathogenesis.

*Or*

What do you mean by physiological specialization ? Explain it with special reference to Rusts.

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