

2022

MICROBIOLOGY — HONOURS

Paper : DSE-A-3

(Plant Pathology)

Full Marks : 50

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Answer **question no. 1** and **any three** questions from the rest.

1. Answer **any ten** questions of the following : 2×10
- (a) Write the contribution of Anton DeBary in the field of plant pathology.
 - (b) Name a plant disease caused by the following organisms :
 - (i) Single-stranded DNA virus
 - (ii) Single-stranded RNA virus.
 - (c) What is chlorosis and necrosis of plant disease?
 - (d) Define the term colonization and dissemination of pathogen.
 - (e) Mention one control method of Wilt of tomato.
 - (f) What is primary inoculum and secondary inoculum?
 - (g) Write the difference between monocyclic and polycyclic plant diseases.
 - (h) Write two symptoms of Ergot of rye.
 - (i) What is plantibodies?
 - (j) What is phytoalexins? Give an example.
 - (k) What do you mean by suppressive soils?
 - (l) How the quarantine method is used to manage plant diseases?
 - (m) What is aflatoxin?
 - (n) Define pathotoxin.
 - (o) What is incubation period?
2. (a) Name the causal agent of Late blight of potato.
(b) Write down the symptoms of the disease.
(c) Describe its disease cycle and control measures. 1+2+(4+3)

Please Turn Over

3. (a) Describe the gene for gene hypothesis.
(b) Briefly describe the concept of horizontal and vertical resistance. 4+(3+3)
4. (a) Explain briefly the effect of pathogens on photosynthesis and on host plant respiration.
(b) Write briefly about True resistance and their types.
(c) State briefly about Systemic Acquired Resistance (SAR). (2½+2½)+3+2
5. Comment on the symptoms, predisposing factors and disease management of the following diseases :
(a) Downy mildew of onion
(b) Red rot of sugarcane
(c) Rice Tungro
(d) Bacterial leaf blight of rice. 2½×4
6. (a) What is crop certification? Explain briefly with example.
(b) How crop rotation is important in Indian agriculture? Explain with example.
(c) What are induced structural defences of plant? Explain with examples. (1+2)+(1+2)+(2+2)
7. Write short notes on **any four** of the following : 2½×4
(a) Disease cycle
(b) Kresek symptom
(c) Urediospores
(d) Use of pathogen-free propagating material
(e) Control through Trap plants.
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