

Enrolment No.....



Faculty of Agriculture

End Sem (Even) Examination May-2022

AG3CO12 Fundamentals of Plant Pathology

Programme: B.Sc. (Hons.) Branch/Specialisation: Agriculture

Duration: 3 Hrs.**Maximum Marks: 50**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. The term phytopathology derives from the combination of three _____ words. **1**
 (a) Greek (b) Latin (c) English (d) Italic
- ii. Plant diseases cause approx. crop loss of- **1**
 (a) 10% (b) 14% (c) 12% (d) 37%
- iii. Nearly 80% of plant diseases are caused by- **1**
 (a) Viruses (b) Fungi (c) Bacteria (d) Algae
- iv. The heteroecious nature of rust fungus was reported by- **1**
 (a) P. A. Micheli (b) Robert Petri
 (c) Anton de Bary (d) E.M. Fries
- v. Most plant pathogenic bacteria are- **1**
 (a) Gram positive (b) Gram negative
 (c) Non flagellable (d) Cell wall lacking
- vi. Protein coat of virus is commonly known as- **1**
 (a) Capsomere (b) Capillatum (c) Capsid (d) None of these
- vii. Some plants synthesize, some antimicrobial compounds known as **1**
 (a) Phytoncide (b) Siderophores
 (c) Elicitors (d) Phytoalexins
- viii. Organisms which derive their nutrition from the dead organic matter is known as- **1**
 (a) Obligate parasite (b) Saprophytes
 (c) Necrotroph (d) All of these
- ix. Hot water treatment for loose smut of wheat; the temperature and time period are- **1**
 (a) 43 °C for 2 min. (b) 80 °C for 5 min.
 (c) 38 °C for 5 min. (d) 52 °C for 11 min.

P.T.O.

- x. Smut of wheat effectively controlled by- **1**
 (a) Vitavax (b) Bavistin (c) Thirum (d) Benlate
- Q.2 i. What do you mean by plant pathology? **1**
 ii. Write the scope and objectives of plant pathology. **2**
 iii. Write the classification of plant diseases on the basis of occurrence and distribution. **5**
- OR iv. Discuss the abiotic plant disease with examples. **5**
- Q.3 Attempt any two:
 i. Write the definition of fungi. Discuss the general characteristics of fungi. **4**
 ii. What do you mean by mycelium? Write the classification of mycelium on according to septation and situation. **4**
 iii. Discuss the sexual reproduction in fungi. **4**
- Q.4 i. Discuss the structure of virus. **2**
 ii. Write the nature of damage caused by 'Heterodera' and 'Anguina'. **2**
 iii. What do you mean by phanerogamic plant parasites? Write the mechanism, dissemination and control of dodder. **4**
- OR iv. Draw the labelled diagram of bacterial cell. **4**
- Q.5 i. Enlist the toxin responsible for disease development and discuss any one in detail. **2**
 ii. Discuss the defence mechanism in plants. **2**
 iii. Discuss the methods of dissemination of Plant diseases with examples. **4**
- OR iv. What do you mean by pathogenesis? Write the process of plant disease development. **4**
- Q.6 Attempt any two:
 i. Enlist the name of biocontrol agents and write the importance of 'Trichoderma' and 'Bacillus' in plant disease management. **4**
 ii. Discuss the cultural methods of plant disease management. **4**
 iii. Write the characters of ideal fungicide. **4**

Marking Scheme

AG3CO12 Fundamentals of Plant Pathology

| | | | |
|-----|-------|---|---------|
| Q.1 | i. | The term phytopathology derives from the combination of three_____ words. | 1 |
| | | (a) Greek | |
| | ii. | Plant diseases cause approx. crop loss of- | 1 |
| | | (b) 14% | |
| | iii. | Nearly 80% of plant diseases are caused by- | 1 |
| | | (b) Fungi | |
| | iv. | The heteroecious nature of rust fungus was reported by- | 1 |
| | | (c) Anton de Bary | |
| | v. | Most plant pathogenic bacteria are- | 1 |
| | | (b) Gram negative | |
| | vi. | Protein coat of virus is commonly known as- | 1 |
| | | (c) Capsid | |
| | vii. | Some plants synthesize, some antimicrobial compounds known as | 1 |
| | | (d) Phytoalexins | |
| | viii. | Organisms which derive their nutrition from the dead organic matter is known as- | 1 |
| | | (b) Saprophytes | |
| | ix. | Hot water treatment for loose smut of wheat; the temperature and time period are- | 1 |
| | | (d) 52 °C for 11 min. | |
| | x. | Smut of wheat effectively controlled by- | 1 |
| | | (a) Vitavax | |
| Q.2 | i. | Plant pathology | 1 |
| | ii. | Scope and objectives of plant pathology. | 2 |
| | iii. | Classification of plant diseases | 5 |
| | | As per the explanation | |
| OR | iv. | Abiotic plant disease with examples. | 5 |
| | | As per the explanation | |
| Q.3 | | Attempt any two: | |
| | i. | Definition of fungi | 1 mark |
| | | General characteristics of fungi | 3 marks |

| | | | | |
|-----|------|---|-----------|---|
| | ii. | Mycelium | 1 mark | 4 |
| | | Classification of mycelium on according to septation | 1.5 marks | |
| | | Classification of mycelium on according to situation | 1.5 marks | |
| | iii. | Sexual reproduction in fungi | | 4 |
| Q.4 | i. | Structure of virus | | 2 |
| | ii. | Nature of damage caused by | | 2 |
| | | Heterodera | 1 mark | |
| | | Anguina | 1 mark | |
| | iii. | Phanerogamic plant parasites | 1 mark | 4 |
| | | Mechanism | 1 mark | |
| | | Dissemination | 1 mark | |
| | | Control of dodder | 1 mark | |
| OR | iv. | Draw the labelled diagram of bacterial cell. | | 4 |
| Q.5 | i. | Toxin responsible for disease development | 1 mark | 2 |
| | | Discuss any one | 1 mark | |
| | ii. | Defence mechanism in plants. | | 2 |
| | iii. | Methods of dissemination of Plant diseases with examples. | | 4 |
| OR | iv. | Pathogenesis | 1 mark | 4 |
| | | Process of plant disease development | 3 marks | |
| Q.6 | | Attempt any two: | | |
| | i. | Enlist the name of biocontrol agents | 1 mark | 4 |
| | | Importance of 'Trichoderma' | 1.5 marks | |
| | | Importance of 'Bacillus' | 1.5 marks | |
| | ii. | Cultural methods of plant disease management | | 4 |
| | | As per the explanation | | |
| | iii. | Characters of ideal fungicide | | 4 |
| | | As per the explanation | | |
