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**M.Sc. (Third Semester)  
EXAMINATION, Dec. - Jan., 2021-22**

**BOTANY**

**(Paper Fourth)**

**(Elective - I)**

**MOLECULAR PLANT PATHOLOGY - I**

*[ Time : Three Hours ]*

*[ Maximum Marks : 80 ]*

**Note: Attempt all Section as directed.**

**(Section-A)**

**(Objective/Multiple Choice Questions)**

**(1 mark each)**

**Note : Attempt all Question:**

**Choose the correct Answer:**

1. The Bordeaux Mixture was first time used for the control of -
  - (A) Downey mildew disease
  - (B) Rust-disease
  - (C) Smut disease
  - (D) Red Rol-disease.

**P.T.O.**

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2. A mature particle of plant virus is generally known as:
  - (A) Virion
  - (B) Capsid
  - (C) Viroid
  - (D) Nucleocapsid
3. Who did most of his work on rust disease in India ?
  - (A) R. Prasad
  - (B) Dr. K.C. Mehta
  - (C) B.B. Muddukar
  - (D) Sporne
4. Race Specific resistance is called -
  - (A) Vertical Resistance
  - (B) Horizontal Resistance
  - (C) Adult Plant Resistance
  - (D) Apparent Resistance
5. Little leaf of Brinjal is caused by -
  - (A) Fungi
  - (B) Bacteria
  - (C) Nematodes
  - (D) Mycoplasma
6. White rust of crucifers is caused by -
  - (A) Ustilago nuda
  - (B) Albugo candida
  - (C) Alternaria Solani
  - (D) Erysiphe Polygoni

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7. Red rust of tea is caused by
- (A) fungi
  - (B) Nematocles
  - (C) Algae
  - (D) Virus
8. What colour is shown by gram negative bacteria after staining?
- (A) Pale reddish colour.
  - (B) Blue
  - (C) Yellow
  - (D) Orange
9. Which type of spores of puccinia graminis infect the Barberry Plant?
- (A) Teleutospores
  - (B) Uredospores
  - (C) Basidiospores
  - (D) Aeciospores
10. Potato famine of Ireland was caused by-
- (A) Rhizoctonia Bataticola
  - (B) Aspergillus niger
  - (C) Erysiphe Polygoni
  - (D) Phytophthora infestans

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11. Solar Heat treatment- is applied in the control of-
- (A) Powdery mildews
  - (B) Smut disease
  - (C) Bunchy top disease
  - (D) Rust disease
12. Damping off fungi includes :
- (A) Sclerospora
  - (B) Fusarium
  - (C) Trichoderma
  - (D) Pythium
13. In certain cases the parts of plants, are being arrested in their growth, This symptom is known as
- (A) Hypertrophy
  - (B) Hyperplasia
  - (C) Atrophy
  - (D) Witches broom
14. Puccinia striformis causes
- (A) Black rust of wheat
  - (B) Yellow / stripe rust of wheat
  - (C) Brown / orange rust of wheat
  - (D) None of the above.

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15. The Fungus causing loose smut of wheat belongs to-
- (A) Basidiomycetes
  - (B) Ascomycetes
  - (C) Deuteromycetes
  - (D) Phycomycetes
16. Who discovered mycoplasma as a disease incitant organism:
- (A) Robert - Brown
  - (B) Rober- koch
  - (C) Antoni van leeuwenhock
  - (D) Nocard & Roux.
17. Who is regarded as the "father of Indian Mycology and Plant Pathology."
- (A) T.S. Sadasivan
  - (B) L.M. Joshi
  - (C) E. J. Buttler
  - (D) G.S. Kulkarni
18. The causal organism of crown gall disease in plants is:
- (A) Virus
  - (B) Bacteria
  - (C) Nema todes
  - (D) Fungi

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19. The causal organism of blast disease of rice is :
- (A) Aspergillus niger
  - (B) Alternaria alternata
  - (C) Fusarium solani
  - (D) Pyricularia oryzae
20. Sclerospora graminicola is the causal organism of:
- (A) Potato blight
  - (B) Green Ear disease of Bajra
  - (C) Tikka disease of Groundnut
  - (D) None of the above.

### Section - B

(Very Short Answer Type Question)

(2 Marks each)

**Attempt all questions:**

**Differentiate between:**

1. Gram positive & gram negative bacteria
2. Symptoms of Rust & Smut disease.
3. Constituents of PDA and NAM media.
4. Early & Late blight of potato.
5. Powdery & Downy mildew disease.

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6. Collateral Host & Alternate Host.
7. Haustorium & Appressorium.
8. Hypertrophy & Hyperplasia.

**Section - C**

**(Short Answer Type Questions)**

**( 3 marks each )**

**Note: Attempt all questions:**

1. What are important characters of mycoplasma?
2. What is the significance of Rhizosphere and phyllosphere study.
3. Write the role of toxins in pathogenesis.
4. What is disease triangle?
5. What are the methods of sterilization in Plant Pathology.
6. Write the important points of Koch's postulates.
7. What are the factors responsible for the establishment of an epidemic?
8. What is the role of toxins in Pathogenesis?

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**Section - D**

**(Long Answer Type Question)**

**( 5 marks each)**

**Note: Attempt all questions:**

1. Give the general characters of fungi along with heterotrophic behaviour with emphasis on parasitism ability and virulence.

OR

Write a note on classification of plant diseases.

2. Write in detail the symptoms of plants diseases caused by fungi.

OR

Describe the different ways of dissemination of plant pathogens.

3. Write a note on Mechanism and physiology of Infection in the disease development of plants.

OR

Describe physiological specialization with special reference to smuts & rusts

4. Write the techniques required for introductory bacteriology.

OR

Write a note on techniques of inoculation and Isolation of pure cultures of plant pathogenic micro organisms.