

**M.Sc. BOTANY**  
**THIRD SEMESTER**  
**PLANT PATHOLOGY & MICROBIOLOGY**  
**MSB-301**

(Use separate answer scripts for Objective & Descriptive)

Duration : 3 hrs.

Full Marks : 70

**( PART-A : Objective )**

Time : 20 min.

Marks : 20

**Choose the correct answer from the following:**

**1x20=20**

1. Alberto Magnus who recognized 'Mistletoe' as the first plant disease was caused by- which of the following?
  - a. A fungus
  - b. A bacterium
  - c. An angiosperm
  - d. A mycoplasma
2. Late blight disease of Potato caused famine in Ireland. What was the pathogen?
  - a. *Helminthosporium oryzaeans*.
  - b. *Puccinia graminis*
  - c. *Peronospora pisi*
  - d. *Phytophthora infestans*
3. Who first reported Nematode as a plant pathogen?
  - a. Needham
  - b. Luis Pasteur
  - c. Tillet brothers
  - d. Beijerinck
4. What is the organism that secretes HV-Toxin?
  - a. *Helminthosporium victoriae*
  - b. *Aspergillus niger*
  - c. *Penicillium notatum*
  - d. None
5. What fungicide was used for the first time to control the powdery mildew disease of grapes caused by *Uncinula necator*?
  - a. An organomercurial compound
  - b. Bavistin
  - c. Bordeaux Mixture
  - d. Benomyl
6. Blast disease of Rice is caused by which of the following?
  - a. *Helminthosporium oryzaeans*
  - b. *Pyricularia oryzae*
  - c. *Fusarium oxysporum*
  - d. *Alternaria alternata*
7. Sir Edward John Butler was a:
  - a. Virologist
  - b. Bacteriologist
  - c. Nematologist
  - d. Mycologist
8. Abnormal enlargement of cells i.e. formation of galls and tumours are due to which of the following reasons ?
  - a. Hypertrophy
  - b. Necrotrophy
  - c. Atrophy
  - d. Stunning of the growth
9. Which of the following group of organism is responsible for vein clearing of 'Bhindi' i.e. *Abelmoschus esculanta*?
  - a. Fungi
  - b. Bacteria
  - c. Phytoplasma
  - d. Virus

10. Damping of Seedling is caused by which of the following organism?  
 a. *Pythium de Baryanum*                      b. *Phytophthora palmivora*  
 c. *Peronospora pisi*                              d. *Phytophthora colocasiae*
11. Use of phenolic solution as disinfectant during surgery was given by:  
 a. Joseph Lister                                      b. John Needham  
 c. Robert Koch                                      d. Antony Von Leeuwenhock
12. Toxins and enzymes which are not produced by *Streptococcus pyrogens*:  
 a. Hyaluronides                                      b. Phosphate  
 c. Hemolysis                                        d. Streptokinase
13. Mordant use in gram staining is:  
 a. Crystal violet                                      b. Iodine  
 c. Safranin                                            d. All of these
14. Lyophilization means:  
 a. Sterilization                                      b. Freeze drying  
 c. Burning to ashes                                      d. Exposure for fermentation
15. Yeast extract is excellent source of:  
 a. A - vitamin                                        b. Proteins  
 c. B - vitamin                                        d. Carbohydrates
16. Which class of antibody mediates the hypersensitivity?  
 a. Ig M                                                b. IgE  
 c. IgA                                                 d. IgG
17. The Chaperone involved in the processing of endogenous antigen:  
 a. ERp 57                                              b. Calnexin  
 c. Tapasin                                              d. All of these
18. Professional antigen presenting cell (APC) is:  
 a. T - cell                                              b. Neuron  
 c. Basophil                                              d. Macrophage
19. How many subunits are produced after digestion of monomeric antibody with Papain enzyme?  
 a. 4                                                      b. 3                                                      c. 6                                                      d. 1
20. HAT media consist of:  
 a. Hypoxanthin, Ampicillin, Thymolopthalin  
 b. Hypoxalamine Ampicillin, Thymolopthalin  
 c. Hydroxalamine Ampicillin, Thymidine  
 d. Hypoxanthine, Aminopterin, Thymidine

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( PART-B : Descriptive )

Time : 2 hrs. 40 min.

Marks : 50

[ Answer question no.1 & any four (4) from the rest ]

1. Define plant disease as put forth by Harsfall and Dimond. What are the stages of development of plant disease? Note down the stages and explain each stage. 2+4+4=10
2. What do you mean by plant disease control? What are its importance and also explain plant disease quarantine. 3+7=10
3. Write briefly the symptoms, causal organisms, disease cycle and control measures of 'Abnormal Leaf Fall of Rubber'. 2+2+3+3=10
4. What is Citrus Canker? Write briefly the symptoms, causal organisms, disease cycle and management of the disease. 1+2+2+2+3=10
5. Write a concise note on Red Rot of Sugarcane. 10
6. Write in detail about the Five Kingdom Classification. 10
7. Write in brief different methods for the isolation of pure culture. 10
8. What is antibody? Write a comparative account on different classes of antibody. 3+7=10

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