

B.Sc. (Honours) Examination, 2019

Semester-II

Botany

Paper: BBC-21

(Mycology and Plant Pathology)

(For Back Candidates)

Time: Three Hours

Full Marks: 40

Questions are of value as indicated in the margin

1. Answer any ***eight*** from the following questions: 1×8=8
 - a) State two unique properties of Mycoplasma
 - b) Name two double stranded RNA virus which are pathogenic to plants
 - c) What is the unique lipid found in the cell membrane of true fungi?
 - d) Why are Oomycetous fungi not considered as true fungi?
 - e) State the composition of Bordeaux mixture
 - f) Why monocots are not infected by *Agrobacterium tumefaciens*?
 - g) In which Phylum do most of the plant pathogenic bacteria belong?
 - h) What is Hartig's net?
 - i) Name the primary and secondary inocula of the late blight of potato pathogen
 - j) Name one antifungal antibiotic that inhibits fungal cell wall biosynthesis
 - k) Name the monomer of chitin
 - l) Distinguish between hypertrophy and hyperplasia
2. Answer ***any two*** of the following:
 - a) Name two edible mushrooms. What is spawn? How is it prepared? Discuss the nutritional value of mushroom. Describe briefly the cultivation process of any mushroom. 1+1+2+2+2=8
 - b) Describe different types of lichens citing examples. Draw a neat sketch of the internal anatomy of a foliose lichen thallus. Discuss the economic importance of lichen. 2+3+3=8
 - c) Describe the role of different enzymes in the entry process by a virulent fungal pathogen into a susceptible host through the cell wall. Distinguish between white- and brown- rot fungi. Name two cell wall proteins of plants. 3+3+1+1=8
3. Answer ***any two*** of the following:
 - a) Answer the following: 4×2=8
 - i) Give a comparative account of the conidial structures of *Alternaria solani*, *Helminthosporium oryzae* and *Fusarium oxysporum*
 - ii) Name two rot causing pathogens of plants and state atleast one characteristic feature of each.

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- iii) Characterize the pathogen of bacterial blight of rice
 - iv) What are different spore forms found in the life cycle of *Puccinia graminis* pv *triticii* and mention their ploidy levels
 - b) Write short notes on: 4×2=8
 - i) Ascus development in *Ascobolus* sp.
 - ii) Role of fungi in production of cholesterol lowering- and immunosuppressive- agents
 - iii) Tab-toxin
 - iv) Types of Aflatoxin
 - c) Write notes on: 4×2=8
 - i) Systemic fungicides
 - ii) Hyperparasites
 - iii) Difference between SAR and ISR
 - iv) Constitutive chemical defence in plants with suitable examples
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