

B.Sc. (Honours) Examination, 2017
Semester-II
Botany
Course: BBA-21 (Allied)
(Microbiology, Mycology & Plant Pathology)

Time: Three Hours

Full Marks: 40

Questions are of value as indicated in the margin.

1. Answer **any eight** of the following questions: 1x8=8
- a) What are capsules made up of?
 - b) What is the difference between an F⁺ and aHfr cell?
 - c) What is the role of calcium chloride in bacterial gene transfer process?
 - d) Name one Gram positive bacterium upto species level?
 - e) What is the basic difference between a viroid and a prion?
 - f) Write the significance of Louis Pasteur's Swan Neck Flask experiment?
 - g) What is the difference between a lytic and a temperate phage?
 - h) Name the causal organism of brown spot of rice.
 - i) What is Bordeaux mixture?
 - j) What is the monomer of chitin?
2. What is meant by an auxotroph and a prototroph? Define the three modes of gene transfer in bacteria and explain Davis's U-tube experiment to differentiate between them. 2+6=8

OR

Describe the process of Gram staining explaining the role of each chemical used in the process. Explain the major differences between the cell wall structure of Gram positive and Gram negative bacteria that lead to this differential staining. 4+4=8

3. With suitable labeled diagram describe the structure of T2 bacteriophage. Describe one step growth curve of the virus. 4+4=8

OR

Write short notes on:

2x4=8

- a) Lag Phase
- b) Transformation
- c) Bacterial flagella
- d) Importance of bacteria in dairy industry

P.T.O.

(2)

4. Why is *Puccinia graministritici* known as heteroecious pathogen? Describe different types of spores which are produced during its life cycle. What are disjunct cells? 2+5+1=8

OR

Write short notes on:

2×4=8

- a) Unique properties of fungi
 - b) Budding and fission
 - c) Economic importance of *Penicillium* sp.
 - d) Delipore septum
5. Name the pathogen causing loose smut of wheat. Describe its symptoms, disease cycle and suitable management strategies. 1+2+3+2=8

OR

What is disease triangle? Briefly describe about necrotic, atrophic and hypertrophic symptoms in plant diseases with suitable examples. 2+6=8
