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Roll No.

BOT-501

Biology and Diversity of Viruses, Bacteria and Fungi

M. Sc. BOTANY (MSCBOT-12/13/16/17)

First Year, Examination, 2018

Time : 3 Hours

Max. Marks : 80

Note : This paper is of **eighty (80)** marks containing **three (03)** Sections A, B and C. Attempt the questions contained in these Sections according to the detailed instructions given therein.

Section-A

(Long Answer Type Questions)

Note : Section 'A' contains four (04) long answer type questions of nineteen (19) marks each. Learners are required to answer *two* (02) questions only.

1. What are Fungi ? Give a detailed account of recent trends in classification of fungi. Write also about the role of fungi in industry, medicine and as food.
2. Give an illustrated account of morphology, ultra-structure and chemical structure of viruses. Also discuss the economic importance of viruses.
3. Write an explanatory account on any *two* of the following :
 - (a) Ultrastructure of bacterial cell and cell wall composition.

(B-1) P. T. O.

- (b) Reproduction in Bacteria
 - (c) Bacterial borne plant—diseases and symptoms
4. Write short notes on the following :
- (a) Mycoplasma
 - (b) Mode of nutrition in fungi
 - (c) Heterothallism
 - (d) Mastigomycotina

Section-B

(Short Answer Type Questions)

Note : Section 'B' contains eight (08) short answer type questions of eight (8) marks each. Learners are required to answer *four* (04) questions only.

1. Discuss the role of bacteria in nitrogen cycle.
2. Write a brief note on flagellation in fungi.
3. Describe nomenclature of viruses.
4. Symptoms of virus infected plant diseases.
5. Bacterial Biofertilizers.
6. General account of basidiomycotina.
7. Differentiate the following :
 - (a) Eubacteria and Archebacteria
 - (b) Ascomycotina and Basidiomycotina
8. Lytic and Lysogenic Cycle.

Section–C**(Objective Type Questions)**

Note : Section ‘C’ contains ten (10) objective type questions of one (01) mark each. All the questions of this Section are compulsory.

Indicate whether the following statements are True *or* False :

1. The protein coat that encloses the viral gene is called a capsid. (True/False)
2. A virus reproduces by using the metabolic machinery of a host cell. (True/False)
3. Mycoplasmas are larger than cyanobacteria. (True/False)
4. Fungi usually store their food in the form of glycogen. (True/False)
5. Bacteria which are capable of synthesizing food from inorganic materials using chemical energy are called photosynthetic bacteria. (True/False)
6. In mushrooms sex organs are complicated structures. (True/False)
7. Transduction in bacteria was studied by Zinder and Lederberg. (True/False)
8. A free living bacterium capable of fixing nitrogen is *Rhizobium*. (True/False)
9. In Ascomycotina ascospores are formed exogenously. (True/False)
10. Most mycoplasmas are non-motile. (True/False)

