

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. Define fungi and mention salient features of major groups. Explain the tendency of sexual reproduction in fungi.
2. Describe the characteristics of viruses. Give an illustrated account of morphology and chemical structure and methods of transmission of viruses.
3. Describe any *two* of the following in detail : 10 each
 - (a) Give salient features of cyanobacteria and archaebacteria

- (b) Ultrastructure of bacterial cell and cell wall composition
 - (c) Nutrition and economic importance of bacteria
4. Write short notes on the following :
- (a) Isolation and purification of viruses
 - (b) Parasexuality
 - (c) Fungi as food
 - (d) Deuteromycotina

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. Describe the nature of viruses. Describe different animal diseases caused by viruses.
2. Differentiate the following :
 - (a) Heterothallism and Heterokaryosis
 - (b) Cleistothecium and Apothecium
3. Describe the process of genetic recombination in bacteria.
4. Write about the nomenclature of viruses.
5. Write a brief note on “flagellation of fungi”.
6. Give general account of Basidiomycotina.
7. What is Bacteriophage ? Describe their structure with suitable diagram.
8. Give a brief account of structure and economic importance of Mycoplasma.

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.

State True/False.

1. In fungi sex organs show evolution from simplicity to complexity.
2. Morchella is an edible fungus belonging to Ascomycotina.
3. Viruses contain both DNA and RNA.
4. Most mycoplasmas are non-motile.
5. Heterothallism in fungi was discovered by Alexander Fleming.
6. Plasmids are extrachromosomal genetic material.
7. Mycoplasma are larger than cyanobacteria.
8. Ascospores are formed endogenously inside the ascus in Ascomycotina.
9. In Basidiomycotina well developed sex organs are present.
10. Hepatitis B virus is usually transmitted via blood transfusion, unsterilized needles etc.

