

BOT–501

Biology and Diversity of Viruses, Bacteria and Fungi

M. Sc. BOTANY (MSCBOT–12/13/16)

First Year, Examination, 2017

Time : 3 Hours

Max. Marks : 80

Note : This paper is of **eighty (80)** marks containing **three (03)** Sections A, B and C. Learners are required to 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. Describe general characteristics of fungi. Explain with suitable diagrams the ultrastructure of the fungal cell and composition of cell wall.
2. What are viruses ? Differentiate between plant and animal viruses. Give a detailed account of classification and replication of viruses.
3. Write explanatory account on any *two* of the following :
 - (a) Bacteria and its classification
 - (b) Reproduction in Bacteria
 - (c) Mycoplasma and mycoplasmal diseases

4. Write short notes on the following :
- Ultrastructure of viruses
 - Heterothallism
 - Use of fungi in industry
 - Zygomycotina

Section-B

(Short Answer Type Questions)

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

- Describe symptoms of virus infection in plants.
- What are bacteriophage ? Describe their structure with suitable diagrams.
- Differentiate between transcription and translation.
- Write about mode of nutrition in fungi.
- Give general account of Ascomycotina.
- Write short notes on the following :
 - Edible fungi
 - Role of fungi in Forestry
- Write a brief note on Deuteromycotina.
- Differentiate between the following :
 - Autotrophic and Heterotrophic fungi
 - Bacteria and Viruses

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 :

- Viruses have protein coat called capsid. (True/False)

[3]

2. Plasmids are a type of Cyanobacteria. (True/False)
3. Mycoplasma are the smallest known aerobic prokaryotes without a cell wall. (True/False)
4. In basidiomycotina, basidiospores are formed endogenously. (True/False)
5. *Agaricus* is an edible fungus belonging to Basidiomycotina. (True/False)
6. Cyanobacteria are chemoautotrophs. (True/False)
7. Transfer of genetic material from one bacterium to another by a virus is known as transduction. (True/False)
8. Deuteromycotina are called as 'fungi imperfectii'. (True/False)
9. *Azobacter* is a heterotrophic nitrogen fixing bacterium. (True/False)
10. Advanced types of Sexual Reproduction is present in Deuteromycotina. (True/False)

