

(i) Printed Pages : 3

Roll No.

(ii) Questions : 9

Sub. Code :

1	1	8	0	3
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Exam. Code :

5	0	1	3
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Bachelor of Science (FYUP) 3rd Semester

(2125)

MICROBIOLOGY

Paper : Bacteriology and Virology

(Common with B.Sc. Biotechnology 3rd Sem NEP)

Time Allowed : 3 Hours]

[Maximum Marks : 67

Note :—Attempt FIVE questions in total. Question No. 1 is compulsory. Attempt ONE question each from Units I–IV.

1. Attempt ALL parts (Compulsory):

- (a) Differentiate between a viroid and a prion.
- (b) Name two diseases caused by *Staphylococcus aureus*.
- (c) What are methanogens? Give one example.
- (d) List the routes of transmission for *Plasmodium falciparum*.
- (e) What is the capsid of a virus?

- (f) Define an oncogene.
- (g) Which group of bacteria does *Halobacterium* belong to?
- (h) Name the virus used in the study of oncogenic RNA viruses.
- 7×1=7

UNIT-I

2. Discuss in detail the structure of a bacterial endospore and describe the various stages of sporulation. 15
3. Write concise notes on the following:
- (a) General characteristics and ecological significance of Euryarchaeota.
- (b) Morphology and economic importance of Alpha proteobacteria. 15

UNIT-II

4. Describe the etiology, pathogenicity, and laboratory diagnosis of a disease caused by *Streptococcus pneumoniae*. 15
5. Compare and contrast the epidemiology, route of transmission, and treatment for diseases caused by *Candida albicans* and *Plasmodium falciparum*. 15

UNIT-III

6. Define viruses. Explain the general concepts of virus structure and classification. 15

7. Describe the mode of replication of the Influenza virus. Also, discuss the prevention and control measures for influenza.

15

UNIT-IV

8. What are oncogenic viruses? Discuss the concepts of oncogenes and proto-oncogenes with suitable examples.

15

9. Write short notes on the following:

(a) Different *in vitro* growth systems for animal viruses.

(b) Types of oncogenic DNA viruses.

$2 \times 7\frac{1}{2} = 15$