

4/BOT-251(Th) Syllabus-2023

2026

(May-June)

FYUP : 4th Semester Examination

BOTANY

(Microbiology)

(BOT-251)

(Theory)

Marks : 56

Time : 3 hours

*The figures in the margin indicate full marks
for the questions.*

Answer Question No. **1** which is compulsory
and **any four** from the rest, selecting **one**
from each Section.

1. Write short notes on the following : $4 \times 4 = 16$

- (a) Cyanobacteria
- (b) Tobacco Mosaic Virus (TMV)
- (c) Food preservation
- (d) Applications of bright field microscopy

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(Turn Over)

(2)

SECTION—I

2. Define conjugation in bacteria. Discuss the role of Hfr in bacterial conjugation. $2+8=10$
3. Describe the ultra-structure of a bacterial cell giving suitable diagram. Give the structural difference between Gram positive and Gram negative cell wall. $5+1+4=10$

SECTION—II

4. Explain in detail the structure and symmetry of viruses with suitable diagrams. Write the economic importance of viruses. $3+5+2=10$
5. Write notes on the following : $5 \times 2 = 10$
 - (a) Bacteriophage T4
 - (b) Lytic cycle of virus replication

SECTION—III

6. Define batch culture. Explain in detail the different phases of a typical bacterial growth curve. Support your answer with a diagram. $2+6+2=10$
7. Discuss the role of microbes in nitrogen fixation citing examples of micro-organisms involved in the process. 10

SECTION—IV

8. Write short notes on the following : $2 \times 5 = 10$

- (a) Mycoplasma
- (b) Lysogeny
- (c) Antibiotics
- (d) Botulism
- (e) Food spoilage

9. Write short notes on the following : $5 \times 2 = 10$

- (a) Baltimore system of classification of viruses
- (b) Chemoautotrophic mode of microbial nutrition
