

2022

M.Sc.

4th Semester Examination

MICROBIOLOGY

PAPER—402

Full Marks : 50

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

UNIT-402.1 NATURAL THERAPEUTICS

Group - A

Answer any two questions. 2×2

1. Define primary and secondary metabolites.

(Turn Over)

2. Why are there very few antifungal antibiotics used systemically?
3. Why is half-life of drugs important for maintenance of systemic drug concentration?
4. Mention the name of two therapeutic enzymes and their mode of action.

Group - B

Answer any *two* questions. 2×4

5. Classify antibiotics on the basis of mode of action.
6. 'Drug modification or inactivation is a principal way for drug resistance' - Justify the statement.
7. Describe the characteristics of a probiotic organism.
8. Why is mushroom designated as a 'nutraceutical rich food resource'?

Group - C

Answer any *one* question. 1×8

9. Describe the production and extraction of penicillin from the culture broth.

10. Discuss critically the pharmacokinetics process.

**UNIT-402.2 ADVANCE BIOPRODUCTS AND
NORMS**

Group - A

Answer any *two* questions. 2×2

1. What is quantum dot?
2. Enumerate two advantages of bioplastics.
3. What is magnetic hyperthermia?
4. What do you mean by Intellectual Property Right?

Group - B

Answer any *two* questions. 2×4

5. What is quality control? What are the roles of a QC officer? 2+2
6. What is the way to reduce the toxicity of nanoparticles?
7. What is nanocrystalline? Mention its properties. 2+2

8. What is trade mark? Write a note on patent. 1+3

Group - C

Answer any *one* question. 1×8

9. Discuss the role of magnetic nanoparticle in labelling and separation of cells. What is DNA nanotechnology? Discuss the applications of DNA nanotechnology. 3+2+3
10. Briefly describe the applications of nanotechnology in agriculture.

[Internal Assessment - 10 Marks]
