

M.Sc. 1st Semester Examination, 2024

BOTANY

PAPER – BOT-101

Full Marks : 50

Time : 2 hours

Answer all questions

The figures in the right hand margin indicate marks

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

GROUP – A

Answer any four questions : 2 × 4

1. What are extremophiles ?
2. What are positive and negative stranded RNA viruses ?

(Turn Over)

3. Mention the site of occurrence of teichoic acid. State its function.
4. What is 'mot' protein ? Mention its function.
5. What are red wine and what are white wine ?
6. What is interferon ?

GROUP – B

Answer any **four** questions : 4 × 4

7. Compare passive immunity with active immunity. Discuss Helmestetter-Cummings's technique for obtaining synchronous growth. 2 + 2
8. What is sexduction ? Compare F⁻, F⁺, F', and Hfr. 2 + 2
9. What is monoclonal antibody ? How is monoclonal antibody produced in laboratory condition ?

10. During Log-phase growth of a bacterial culture, a sample was taken at 9.30 am and found to contain 10,000 cells per milliliter. A second sample was taken at 7.24 pm and found to contain 1,00,00,000 cells per milliliter. What is the generation time of that bacteria in hour? Name one non-leguminous symbiotic nitrogen fixer. 3 + 1
11. Mention different ways of activation of oncogenes to cause cancer. 4
12. Write notes on : 2 + 2
- (a) Divisome
- (b) Viroid.

GROUP – C

Answer any **two** questions : 8 × 2

13. Write an account on morphology and ultra-structure of bacterial cell. Discuss ED pathway. 5 + 3

14. What is oxygen toxicity ? Why obligate anaerobic organisms are unable to survive in oxygenic environment ? Describe different physical and chemical sterilization methods to control bacterial growth. 1 + 2 + 5
15. Mention regulation of lysogenic cycle. Describe the general methods of cultivation of animal viruses. 3 + 5
16. Compare generalized and specialized transduction. Discuss interrupted mating for gene mapping in bacteria. 4 + 4

[Internal Assessment — 10 Marks]
