

**FOURTH SEMESTER M.Sc. DEGREE (REGULAR) EXAMINATION
MARCH 2021**

(CBCSS)

Zoology

ZOL 4C 10—BIOTECHNOLOGY AND MICROBIOLOGY

(2019 Admissions)

Time : Three Hours

Maximum : 30 Weightage

General Instructions

1. *In cases where choices are provided, students can attend all questions in each section.*
2. *The minimum number of questions to be attended from the Section / Part shall remain the same.*
3. *There will be an overall ceiling for each Section / Part that is equivalent to the maximum weightage of the Section / Part.*

Part A

I. Answer any *four* of the following. Each question carries 2 weightage :

- 1 Shuttle vectors.
- 2 Plasmids.
- 3 FISH.
- 4 Inverse PCR.
- 5 Vaccines.
- 6 Continuous culture.
- 7 Microbial bioremediation.

(4 × 2 = 8 weightage)

Part B

II. Answer any *four* of the following. Each question carries 3 weightage :

- 8 Write Bergey's classification with examples.
- 9 Write an account on the methods of control of micro-organisms.

Turn over

- 10 Give an account on the applications of biotechnology in agriculture.
- 11 How molecular markers are important ? Add a note on different markers used.
- 12 Write on transposons used as vectors.
- 13 Explain the steps involved in the cloning of DNA in-vivo.
- 14 Explain in detail the techniques in cell culture.

(4 × 3 = 12 weightage)

Part C

III. Answer any *two* of the following. Each question carries 5 weightage :

- 15 Write an essay on different gene silencing techniques with examples.
- 16 Give an account on the structure of bacterial cell. Write a note on function.
- 17 Write an essay on the ethical issues related to genetic engineering. Add note on its impact on society.
- 18 Write an essay on blotting techniques. Add a note on their applications.

(2 × 5 = 10 weightage)