

S.No. 3805

16 SMBEMB 3

(For candidates admitted from 2016–2021 batch)

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023.

Part III — Microbiology — Major Based Elective

MICROBIAL BIOTECHNOLOGY AND BIOETHICS

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20)

Answer ALL questions.

Define the following

1. Insulin.
2. MAB.
3. VAM.
4. Stock culture.
5. Bio-diesel.
6. β -carotene.
7. Binary vectors.

8. Dolly sheep.
9. IPR.
10. Euthanasia.

SECTION B — (5 × 5 = 25)

Answer ALL questions.

11. (a) Discuss the process of Monoclonal antibodies production.

Or

- (b) Illustrate the microbial insulin production with a neat flowchart.

12. (a) How industrial production of biofertilizers takes place? Explain with one example.

Or

- (b) What is the mode of action of Bt toxin on pests? Discuss.

13. (a) List the applications of spirulina in various fields.

Or

- (b) Outline the bio-ethanol production with a neat flowchart.

14. (a) Differentiate Ex Vivo and In vivo gene therapy.

Or

- (b) Draw and explain the Ti plasmid vector system.

15. (a) Give a brief note on ethical issues for abortion.

Or

- (b) What are the different types of IPR? Explain.

SECTION C — (3 × 10 = 30)

Answer any THREE questions.

16. Elucidate the important milestones in the field of microbial biotechnology.

17. Illustrate the production of bioplastics with two examples.

18. What are the cultivation methods available to grow spirulina? Discuss.

19. Describe the production of transgenic sheep with neat diagram.

20. List the principles of Bioethics and comment about the ethics committee.