S.No. 5689 16 SMBEMB 3

(For candidates admitted from 2016–2017 onwards)

B.Sc. DEGREE EXAMINATION, APRIL 2022.

Part III — Microbiology – Major Based Elective

MICROBIAL BIOTECHNOLOGY AND BIOETHICS

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20)

Answer ALL questions

1. HGPRT
2. *Streptomyces griseus*
3. VAM
4. YEMA
5. SCP
6. *Saccharomyces cerevisiae*
7. Ti plasmid
8. Glyphosate

9. Copyright

10. Principle of non-maleficence

PART B — (5 × 5 = 25)

Answer ALL questions, choosing either (a) or (b).

11. (a) In brief, explain the production of Penicillin.

Or

(b) Describe the production of recombinant Hepatitis B antigen.

12. (a) What are Xenobiotics? Briefly explain their importance and degradation.

Or

(b) Explain the process of producing BT for large-scale applications

13. (a) With examples, list out five pharmaceutically valuable compounds from microalgae.

Or

(b) What are the biotechnological potentials of Spirulina?

14. (a) How are herbicide resistant plants developed?

Or

(b) What do you know about *in vivo* human gene therapy?

15. (a) Write notes on principles of bioethics.

Or

(b) What is Euthanasia? Explain its ethical issues.

PART C — (3 × 10 = 30)

Answer any THREE questions.

16. Give a detailed account on the industrial production of recombinant Insulin.

17. What are Bioplastics? Mention its types. Explain in detail on the production and application of any one type of bioplastic.

18. Elucidate the protocol in generation of transgenic mice.

19. With a neat diagram, explain the structure, function and applications of Ti plasmids.

20. What is IPR? Explain its types and importance.

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