

MAY 2014

**P/ID 40323/PZLE**

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Time : Three hours

Maximum : 100 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

All questions carry equal marks.

Each answer should not exceed 50 words.

1. Define Eukaryotes.
2. What is pasteurization?
3. Mention the ways to preserve microbial culture.
4. Differentiate spore stain from capsule stain.
5. What is biodeterioration?
6. Name any two dairy products.
7. What are cloning vectors?
8. Define bioinformatics.
9. What is the fate of Dolly?
10. What is meant by biomining?

PART B — (5 × 6 = 30 marks)

Answer ALL questions.

All questions carry equal marks.

Each answer should not exceed 250 words.

11. (a) Describe the scope of Microbiology.

Or

(b) Explain the principles behind microbial taxonomy.

12. (a) Write notes on :

(i) Acid fast stain

(ii) Hanging drop method.

Or

(b) What are pathogenic microbes? Mention the viral pathogens and their ill effects.

13. (a) Explain the industrial production of an organic acid and an enzyme by fermentation technique.

Or

(b) What are alcoholic beverages? Mention the popular species involved in alcohol production.

14. (a) Give an account of genomic library and its benefits.

Or

- (b) Describe the cloning vector for *Agrobacterium tumefaciens*.

15. (a) What is protoplast fusion? Why should the genes for disease resistance be promoted?

Or

- (b) Comment briefly on the stages involved in bioprocess technology.

PART C — (5 × 10 = 50 marks)

Answer ALL questions.

All questions carry equal marks.

Each answer should not exceed 500 words.

16. (a) Discuss 'antimicrobial chemotherapy' and 'antimicrobial resistance'.

Or

- (b) Describe the various microbial culture techniques and the methods of culture preservation.

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17. (a) What is a culture medium? Mention the various types of culture media and explain the preparation of any two media.

Or

- (b) Elaborate on aquatic microbes and enumerate their uses in waste treatment.

18. (a) Trace the remarkable achievements of biotechnology in the fields of agriculture and medicine.

Or

- (b) What are 'Molecular Scissors'? Comment on the different enzymes involved as tools in rDNA technology.

19. (a) How would you bring about bioremediation of industrial wastes and heavy metals?

Or

- (b) Present your views on IVF technology and the unscrupulous production of transgenics.

20. (a) Explain the gene transfer technique of particle bombardment and microinjection.

Or

- (b) Discuss the application of transgenic technology for production of nitrogen fixing plants.