E 290

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2003.

Third Semester

Industrial Biotechnology

IB 234 — MICROBIOLOGY

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write about contribution made by Joseph Lister in microbiology.

2. Is it possible to convert a bright field microscope to dark field microscope? If so explain.

3. What are L forms?

4. Differentiate Cyanobacteria from other photosynthetic bacteria.

5. What is chemoheterotroph?

6. What is bacterial endospore? Write about its composition.

7. Differentiate food infection from food intoxication.

8. Describe bio remediation.

9. What are methanogens?

10. What is endotoxin?

PART B — (5 × 16 = 80 marks)

11. (i) Explain the principle behind Electron Microscope. List out the difference between TEM & SEM. (8)

(ii) Discuss differential and special staining methods. (8)

12. (a) (i) Explain the various types of culture media with examples. (8)

(ii) Discuss in detail chemical methods of sterilization. (8)

Or

(b) (i) Explain purification of municipal water supplies. (8)

(ii) How do you enumerate microbes in milk? (8)

13. (a) Discuss lactic acid and mixed acid fermentation pathways occurring in bacteria.

Or

(b) Discuss in detail the causative agents of : $(4 \times 4 = 16)$

(i) Whooping count

(ii) Pneumonia

(iii) Dysentry

(iv) Stomach ulcers.

14. (a) (i) Discuss the mechanism by which beta lactam antibiotics act on bacteria. (8)

(ii) Note on Antifungal agents. (8)

Or

(b) Discuss

(i) Growth curve

(ii) Bioleaching

(iii) Anoxygenic photosynthesis

(iv) Biopesticides. $(4 \times 4 = 16)$

15. Write notes on any TWO : $(2 \times 8 = 16)$

(a) MIC

(b) Cold sterilization

(c) ED pathway

(d) Nitrogen cycle.
