FIRST SEMESTER M.Sc. DEGREE EXAMINATION, FEBRUARY 2003

Microbiology

Paper II—MICROBIAL BIOCHEMISTRY

Maximum : 80 Marks

Time : Three Hours

Part A

Answer any **fifteen** *questions.*
Each question carries 2 *marks.*

1. What is Sangers reaction ? Mention its significance.
2. Define Michaelis-Menten constant. How it is useful in studying enzyme kinetics ?
3. How pH offects the velocity of an enzyme catalysed reaction ?
4. Write the structure of thiamine pyrophosphate. What is the main physiological function of this coenzyme ?
5. Write the basic principle involved in molecular sieving.
6. What are anti ? Write the structure of an antioxidant vitamin.
7. Write down the structure of cellulose.
8. How amylase is useful in industry ?
9. Define Beer Lambert's law.
10. Acetic acid is a weak acid, while HCl is a strong acid. Why
11. Define osmotic pressure. How it is determined ?
12. What are inducible enzymes ? Name any *two.*
13. What is the chemical nature of lignin ? How ligninase is useful in industry ?
14. Distinguish between an allosteric enzyme and covalently modulated enzyme.
15. Distinguish between a holoenzyme and an apoenzyme. How prosthetic group differs from coenzyme ?
16. How liposomes are formed ? Name any *two* emulsifying agents.
17. Write the structures of progesterone and testosterone.
18. Write briefly on optical specificity shown by enzymes.
19. Write briefly on any *two* properties shown by a colloidal solution.
20. What is meant by criteria of purity of an enzyme ?

(15 x 2 = 30 marks)

Turn over

Part B

Answer any **four** *questions.*
Each question carries 5 *marks.*

21. Enzyme inhibition.
22. Rhodopsin cycle.
23. Enzyme-substrate complex.
24. NMR absorption spectrometry.
25. Cyanocobalamine.
26. Nitrosamines.

(4 x 5 = 20 marks)

Part C

Answer any **three** *questions.*
Each question carries 10 marks.

27. Discuss on industrial applications of protease.
28. Separation techniques used in protein purification.
29. Three dimensional conformation of proteins.
30. Enzyme regulation.
31. Heteroslycans.

(3 x 10 = 30 marks)