

**SECOND SEMESTER M.Sc. DEGREE EXAMINATION
JULY 2009**

Microbiology

MB 2 IT – MICROBIAL METABOLISM

(2005 Admissions)

Time : Three Hours

Maximum : 80 Marks

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

1. What is meant by feedback inhibition? Write *one* example.
2. What is meant by **Zymogen** activation? Give examples.
3. What is role of **glutathione** in lipid **peroxidation** effects?
4. Distinguish between **glyoxylate** cycle and **TCA** cycle.
5. What is the principle of ion-exchange chromatography? Name any *two* cation exchange resins.
6. Write about the **microsomal** electron transport.
7. How **alanine** is converted to acetyl **CoA**?
8. What is the role of **pyridoxal** phosphate in **transamination** reactions?
9. Write about uncoupling agents.
10. How glycogen **phosphorylase** is regulated?
11. Distinguish between **TPP** and **FAD**.
12. Write any *three* rare amino acids. Where it occurs? Mention their significance.
13. What are the **relatory** sites of citric acid cycle?
14. Polyunsaturated fatty acids are essential in nature. Explain.
15. What is the Biochemistry of bioluminescence?
16. What is **a-oxidation**? Mention its significance.
17. What is the role of **ADP** sugars in starch metabolism?
18. Define free energy and entropy of a system.
19. How **semisynthetic** penicillin is formed? Mention its significance.
20. Define an **isoenzyme**. Cite one example. Mention its significance.

(15 x 2 = 30 marks)

Turn over

Part B

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

21. Immobilized enzymes.
22. Laws of thermodynamics.
23. Chemiosmotic coupling hypothesis.
24. Salvage of purines.
25. Microbial lipolysis.
26. Steroid transformations.

(4 x 5 = 20 marks)

Part C

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

27. Citric acid cycle.
28. Enzyme classification.
29. Purine biosynthesis and its regulation.
30. Mechanism of oxidative phosphorylation.
31. Bacterial cell polymer synthesis.

(3 x 10 = 30 marks)