

D 2713

(2 pages)

Name

Reg. No.....

FIRST SEMESTER M.Sc. DEGREE EXAMINATION, JANUARY 2005

Microbiology

Paper III – MICROBIAL METABOLISM

Time : Three Hours

Maximum : 80 Marks

Part A

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

1. What **are** high energy compounds ? Name any *two*.
2. Explain the role of thiamine pyrophosphate in alcoholic fermentation.
3. Define **isoenzymes** with suitable examples.
4. What is meant by **isoelectric** focusing ? Mention its significance.
5. How **pyruvate dehydrogenase** complex is regulated ?
6. What are antioxidants ? Name any *two* natural antioxidants.
7. Why gel **filtration** is called molecular exclusion chromatography ? Write any *one* of its application.
8. What is meant by lactic acidosis ? How it can be treated ?
9. Define **anaplerotic** reactions. Write any *two* examples.
10. What is the chemical nature of lignin and **hemi-cellulose** ? Write any *one* **ligninase** enzyme.
11. What is meant by **transamination** reaction ? Explain the role of **pyridoxal** phosphate in this reaction.
12. Define α -oxidation of fatty acids.
13. What is the primary purpose of **glyoxylate** cycle ? Write the two characteristic reactions of **glyoxylate** cycle.
14. What is meant by bioluminescence ? Mention its significance.
15. What is the significance of **microsomal** electrons transport ?
16. Write the reactions catalysed by super oxide **dismutase** and **catalase**.
17. Distinguish between **ionophores** and inhibitors.
18. What are the energy conserving reactions of **glycolysis** ?
19. How **threonine** is converted into acetyl COA ?
20. Write any *two* FAD linked biochemical reactions.

(15 x 2 = 30 marks)

Turn over

.Part B

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

21. Non cyclic photosynthetic electron transport.
22. Salvage pathways of **purine** bases.
23. Microbial metabolism of **xenobiotics**.
24. Nitrogen fixation in microbes.
25. **PHB** synthesis.
- 2G. Mechanism of humus formation.

(4 x 5 = 20 marks)

Part C

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

27. Benson Calvin pathway.
28. Biosynthesis of AMP.
29. Oxidative **phosphorylation**.
30. Degradation of **pyrimidine** nucleotides.
31. **TCA** cycle.

(3 x 10 = 30 marks)