



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – FOOD CHEMISTRY AND FOOD PROCESSING

SECOND SEMESTER – APRIL 2018

FP 2801- NUTRITIONAL BIOCHEMISTRY

Date: 19-04-2018
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

Part A

Answer ALL the questions. Each carries TWO marks

(10 x 2=20) marks

1. Define Electron transport chain.
2. What are uncouplers? Give one example.
3. Mention the role of Insulin and Glucagon in blood glucose regulation.
4. Mention the rate limiting enzymes in fatty acid synthesis.
5. Write the energetics of TCA Cycle.
6. What is the role of ATPase pumps located across biological membranes?
7. Define DNA replication.
8. Mention the key regulatory enzymes involved in Glycolysis.
9. What is Deamination? Give an example.
10. Define decarboxylation reaction of amino acids.

Part B

Answer ANY EIGHT questions. Each carries FIVE marks

(8 x 5 =40) marks

11. Explain aerobic glycolysis process.
12. Write a note on gluconeogenesis.
13. Discuss urea cycle with its regulation.
14. Explain the role of aldosterone and renin-angiotensin system in sodium balance.
15. Write a note on Na- K ATPase pump.
16. Comment on the significance of HMP shunt.
17. Explain the Transcription process.
18. Enumerate the following;
 - i) Role of statins in fat metabolism. (2.5)
 - ii) Conversion of mevalonate to 5- phosphomevalonate (2.5)
19. Discuss oxidative phosphorylation
20. Write a note on β oxidation of fatty acids, with its energetics.
21. Comment on chemiosmotic hypothesis.
22. Discuss the supra molecular architecture of biological membranes.

Part C

Answer ANY FOUR questions. Each carries TEN marks

(4 x 10 = 40) marks

23. Explain TCA cycle and its regulation.
24. Discuss the following
 - i) Transamination in amino acid metabolism
 - ii) Complex IV in electron transport chain
 - iii) Elongation process in DNA replication
25. Discuss Glycogenolysis with its regulation.
26. Explain the possible inborn errors of carbohydrate metabolism.
27. Write a detailed note on the following
 - i) Phenyl ketonuria----- (5)
 - ii) Alkaptonuria----- (5)
28. Write a detailed note on prokaryotic Translation process.

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