



US – 346

VI Semester B.Sc. Examination, May 2017
(CBCS) (Fresh)
(2016 – 17 and Onwards)
Paper – VII : BIOCHEMISTRY

Time : 3 Hours

Max. Marks : 70

- Instructions :** i) This question paper has **two** parts Part – A and Part – B.
ii) Answer **any eight** questions from Part – A.
iii) Answers **any nine** questions from Part – B.

PART – A

Answer **any eight** of the following questions. **Each** question carries **two** marks.
(8×2=16)

1. What are the three phases of metabolism ?
2. Write the reaction catalysed by thiokinase enzyme in β -oxidation of fatty acids.
3. How is L-cysteine synthesised from L-serine ?
4. What is photosynthesis ? Give its overall reaction.
5. How does Lactose enter in to Glycolysis ? Explain.
6. What is meant by Atherosclerosis ?
7. Mention any one source each for carbon and nitrogen required for purine ring synthesis.
8. What is the role of nitrogenase complex in nitrogen fixation ?
9. What is Cori-cycle ? Mention its importance.
10. Explain how fatty acyl CoA is transported into mitochondria during β -Oxidation of fatty acids ?
11. Expand SGOT and SGPT.
12. Mention any two examples of photosynthetic bacteria.



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PART - B

Answer **any nine** of the following questions. **Each** question carries **six** marks.

(9×6=54)

13. a) Explain any two irreversible reactions of Glycolysis.
b) How insulin and Glucagon hormones regulate blood glucose levels? (4+2)
14. a) Calculate the net ATP production from one, molecule of stearic acid through β -oxidation.
b) Mention any two functions of cholesterol. (4+2)
15. a) Define deamination. Explain oxidative deamination with a suitable example.
b) What is AKU? Give one characteristic feature. (4+2)
16. a) Explain how ATP is synthesised during cyclic photophosphorylation?
b) What is Hill reaction? Explain photolysis of water. (4+2)
17. a) Write the biochemical reaction catalysed by Iso-citrate dehydrogenase enzyme in citric acid cycle.
b) Calculate the ATP yield for oxidation of one molecule of Acetyl CoA by TCA cycle. (4+2)
18. a) Describe the structure of fatty acid synthetase enzyme and mention any two functions.
b) Give two differences between fatty acid oxidation and synthesis. (4+2)
19. a) Explain the following conversions during purine bio-synthesis,
i) PRPP to 5-phosphoribosyl - 1 - amine.
ii) 5-phosphoribosyl - 1 - amine to Glycinamide ribonucleotide.
b) What is Gout? How it is caused? (4+2)
20. a) What is Nitrogen cycle? Explain the three steps involved in it.
b) Write a short note on nif-genes. (4+2)



21. a) Define Gluconeogenesis. Mention its significance in carbohydrate metabolism.
- b) Explain one substrate level phosphorylation from TCA cycle. (4+2)
22. Explain the bio-synthesis of cholesterol from Acetyl CoA. 6
23. Schemate Urea cycle with the reactions involved in it. 6
24. a) Explain the bio-synthesis of epinephrine from tyrosine.
- b) Give the biological function of Norepinephrine. (4+2)
25. a) What is trans-aldolation ? Explain with a flow chart indicating reactions during photosynthesis.
- b) Mention any two differences between C_3 and C_4 pathways. (4+2)

