

2019

(October)

BIOCHEMISTRY

(Honours)

(BCHEM-501)

(**Intermediary Metabolism**)

Marks : 56

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

Answer any **four** questions

1. (a) Briefly mention the two phases of glycolysis. How is this pathway regulated? 2+7=9
(b) What is Warburg effect? 5
2. (a) What is fermentation? Discuss alcoholic fermentation in brief. 7
(b) What is the physiological significance of pentose phosphate pathway? 7

3. (a) What are the sources of acetyl-CoA for the biosynthesis of fatty acids? 2
- (b) Describe the steps involved in synthesis of palmitic acid starting from acetyl-CoA. 6
- (c) Point out the significance of citrate, malate and pyruvate shuttle in the biosynthesis of fatty acid. 6
4. (a) Briefly describe the regulation of cholesterol biosynthesis. 7
- (b) Briefly describe the different steps involved in β -oxidation of palmitic acid. 7
5. (a) Discuss glutamine biosynthesis and its regulation. 10
- (b) Explain the importance of transamination reaction in amino acid metabolism. 4
6. Write notes on the following : $7 \times 2 = 14$
- (a) Structure of purine and pyrimidine molecules and sources of origin of the C-atoms in the ring.
- (b) Regulation of purine biosynthesis.
7. Discuss photosynthetic electron-transport chain and briefly mention photo-phosphorylation. $9 + 5 = 14$

★ ★ ★