

Dr. Pitendra

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST 3 EXAMINATION- DECEMBER 2017

B.Tech. III<sup>rd</sup> Semester

COURSE CODE: 10B11BT312

MAX. MARKS: 35

COURSE NAME: BIOCHEMISTRY

COURSE CREDITS: 04

MAX. TIME: 2Hrs

*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

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- Q1.** A genetic defect in an enzyme expressed in liver causes the following symptoms:  
After eating a carbohydrate rich meal, elevated blood levels of glucose, lactate, & lipids.  
During fasting, low blood glucose & high ketone bodies
- a) Which liver enzyme is defective? **(2 marks)**
  - b) Explain, why the above mentioned symptoms appear due to the defect in liver enzyme? **(2marks)**
- Q2. a)** Explain the role of carnitine molecule in fatty acid catabolism. **(2marks)**
- b) Define the beta-oxidation process with reference to palmitic acid oxidation and also explain the amount of ATP synthesis with complete oxidation of palmitic acid. **(3marks)**
- Q3.** Name two major sites of glycogen storage in humans and explain which organ has maximum ability of storage. **(3marks)**
- Q4. a)** Describe the role of biotin, thiamine pyrophosphate (TPP) in metabolism. **(2 marks)**
- b) Explain the fate of pyruvate during aerobic condition and anaerobic conditions. **(3 marks)**
- Q5.** Describe the structural features of glycerol-phospholipids with suitable examples and also mention their significance in biological, gene delivery and drug delivery. **(5 marks)**
- Q6.** Explain the process of synthesis and detoxification of ammonia in humans with role of different enzymes and their location at cellular level **(5marks)**
- Q7.** Explain the following process in brief. **(8marks)**
- a) Amino Acid deamination
  - b) Xanthine oxidase and its role in gout disease