

Total No. of printed pages = 4

BP 203 T

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2022

B.Pharm. 2nd Semester End-Term Examination

BIOCHEMISTRY

(New Regulation)

Full Marks – 75

Time – Three hours

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

1. Answer all questions : (20 × 1 = 20)
- (i) Which type of metabolic fuel is utilized for generating glucose under conditions of severe starvation?
- Glycogen
 - Fats
 - Starch
 - Amino acid
- (ii) Blocking of enzyme action by blocking its active site is
- Allosteric Inhibition
 - Feedback inhibition
 - Competitive inhibition
 - Non-competitive inhibition
- (iii) Osazone formation is shown by
- Reducing sugars
 - Non reducing sugars
 - Both (a) and (b)
 - None of the above

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(iv) Enzymes specialized in cleavage of bond

- (a) Lyases
- (b) Ligases
- (c) Hydrolases
- (d) Isomerases

(v) Following complex of ETC is responsible for ATP synthesis

- (a) Complex II
- (b) Complex III
- (c) Complex IV
- (d) Complex V

(vi) β oxidation of Lipids occur in

- (a) Cell membrane
- (b) Cytosol
- (c) Mitochondria
- (d) Endoplasmic reticulum

(vii) The major site for Cholesterol biosynthesis is

- (a) Brain
- (b) Kidney
- (c) Liver
- (d) Lungs

(viii) Hyperbilirubinaemia is condition with serum Bilirubin level of greater than

- (a) 0.05 mg/dL
- (b) 0.1 mg/dL
- (c) 0.5 mg/dL
- (d) 1 mg/dL

(ix) Which of the following functions as termination codon or stop codon

- (a) AUG
- (b) UGG
- (c) UGA
- (d) UGU

(x) The following is a non-protein amino acid

- (a) Ornithine
- (b) Homocysteine
- (c) Histamine
- (d) All of the above

(xi) Which one of the following is an example of Ketose sugar?

- (a) Glucose
- (b) Fructose
- (c) Mannose
- (d) Galactose

(xii) The coenzyme is

- (a) Often a metal
- (b) Always a protein
- (c) Often a vitamin
- (d) Always an inorganic compound

(xiii) What important reducing agent is an important product of the pentose phosphate pathway?

- (a) NAD⁺
- (b) NADP⁺
- (c) NADH
- (d) NADPH

(xiv) In which organism does glycolysis occur?

- (a) Aerobic organisms only
- (b) Anaerobic organisms only
- (c) Both Aerobic and anaerobic organisms
- (d) None of the above

(xv) Malonyl-CoA, ACP, and NADPH are involved in

- (a) β -oxidation
- (b) Glycolysis
- (c) Gluconeogenesis
- (d) Fatty acid biosynthesis

(xvi) Which of the following is the rate limiting enzyme of Gluconeogenesis?

- (a) Hexokinase
- (b) Phosphofructokinase
- (c) Pyruvate carboxylase
- (d) Pyruvate Kinase

(xvii) Glucose has _____ nos. of isomers

- (a) 6
- (b) 12
- (c) 24
- (d) 16

(xviii) ATP is a

- (a) Nucleoside
- (b) Nucleotide
- (c) Both
- (d) None of the above

(xix) To form the Osazone Glucose reacts with

- (a) Salicylic acid
- (b) Phenyl hydrazine
- (c) Phthalic acid
- (d) None of the above

(xx) Which enzyme is responsible for conversion of Pyruvate to Lactate

- (a) Pyruvate Kinase
- (b) Lactate dehydrogenase
- (c) Enolase
- (d) Hexokinase

2. Long answers (Answer 2 out of 3) (2 × 10 = 20)
- (a) Schematically represent Glycolysis cycle. Write down the energetics involved in Glycolysis and mention its significance. (6+3+1= 10)
 - (b) Write short note on: (5+5=10)
 - (i) Classification of Amino acids
 - (ii) IUB classification of Enzymes
 - (c) Write down the steps involved in β - oxidation of fatty acids and mention its significance.
3. Short answers (Answer 7 out of 9) (7 × 5 = 35)
- (a) What are ketone bodies? Write the Synthesis involved in the formation of ketone bodies. (1+4=5)
 - (b) What is Hexose Monophosphate Shunt? Explain the reactions of HMP shunt. (1+4=5)
 - (c) Schematically represent the TCA cycle.
 - (d) Derive the Michaelis Menten equation for substrate-enzyme concentration.
 - (e) What is oxidative phosphorylation? Explain the different components of Electron Transport chain with ATP generation sites. (1+4=5)
 - (f) Briefly describe the biosynthesis of RNA.
 - (g) Write a short note on Enzyme inhibition.
 - (h) Write a note on Urea cycle and its significance
 - (i) Write short notes on: (2.5+2.5=5)
 - (i) Phenylketonuria
 - (ii) Gluconeogenesis.
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