


Name:	 UPES UNIVERSITY WITH A PURPOSE
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, June 2021

Course: Biochemistry
Program: B. Pharmacy
Course Code: BP 203T

Semester: II
Time : 3 hours
Max. Marks: 75

Instructions:

SECTION A

S. No.	MCQs or Fill in the blanks (1 marks each)	Marks	Chapter
1	What do you mean by substrate level phosphorylation?	1	CO2
2	Which of the following statement about ATP is correct? A. It contains 3 high energy phosphate bonds B. It is needed in the body to drive exergonic reaction C. It functions in the body as a complex with Mg ²⁺ D. It is used as energy store in the body	1	CO1
3	Which of the following is correct about free energy change? A. In an exergonic reaction, ΔG is positive B. In an endergonic reaction, there is loss of free energy C. If a reaction is essentially irreversible, it has a high positive ΔG D. If ΔG is negative, the reaction proceeds spontaneously with a loss of free energy	1	CO1
4	Name any example of glucogenic amino acid.	1	CO1
5	Which of the following is involved in sleep cycle. A. Dopamine B. Melatonin C. Epinephrine D. Insulin	1	CO2
6	Juvenile diabetes is also known as _____	1	CO2
7	Formation of glucose from non carbohydrate source is known as _____	1	CO1
8	Acetoacetate is an example of - a. Carbohydrate b. Amino acid c. Nucleotide d. Ketone body	1	CO1

9	What do you mean by okazaki fragments?	1	C04
10	Which of the following an aromatic amino acid. a. Glycine b. Alanine c. Tyrosine d. Leucine	1	C01
11	Name any one essential amino acid.	1	C01
12	18:2 depicts which fatty acid a) Palmitic b) Oleic c) Stearic d) Linoleic	1	C03
13	Which of the following is true about Michaelis-Menten kinetics? a) K_m , the Michaelis constant, is defined as that concentration of substrate at which enzyme is working at maximum velocity b) It describes single substrate enzymes c) K_m , the Michaelis constant is defined as the dissociation constant of the enzyme-substrate complex d) It assumes covalent binding occurs between enzyme and substrate	1	C05
14	The flow of genetic information from DNA to RNA to protein is known as _____	1	C04
15	Which of the following is not a reducing sugar? A. Erythrose B. Fructose C. Galactose D. Ribose	1	C02
16	Which of the following is not a pentose? A. Ribose B. Xylose C. Fructose D. Ribulose	1	C02
17	High glucose 6-phosphate concentration inhibits _____ a) Hexokinase b) Pyruvate kinase c) Glucokinase d) Phosphofructokinase-1	1	C02
18	Name any amino acid which is involved in the synthesis of purines.	1	C04
19	Number of hydrogen bonds between adenine and thymine are _____	1	C04

20	Write the role of bile salts.	1	CO1
SECTION B			
Q		Marks	CO
1	a. Write steps involved in the metabolism of palmitic acid. (beta oxidation) (8 + 2) b. How many molecules of Acetyl CoA are formed after beta oxidation.	10	CO3
2	What are reversible inhibitors? (2 marks) Name 3 classification of reversible inhibitors. (2 marks) Explain each classification with example. (3 marks) Graphically represent how K_m and V_{max} for each of these classifications will vary in Michaelis Menten plot. (3 marks)	10	CO5
3	What is the significance of cholesterol? Draw structure of cholesterol. (5 marks) Which lipoprotein carries cholesterol from liver to tissues and which carries excess cholesterol from tissues to liver? (2 marks) Name important intermediates of kreb cycle. (3 marks)	10	CO3
SECTION C			
Q	Short Answer Type Question (5 marks each)	Marks	CO
1	Name all classifications of energy compounds. (2 marks) Explain any 3 of them with example. (3 marks)	5	CO1
2	Write the name for: a. Bad cholesterol b. Lipoprotein which transports dietary lipids from intestine to liver c. An ω -3 fatty acid d. Pathway through which nucleotides are recycled e. Pathway in which pentose sugar is synthesized	5	CO1
3	Draw electron transport chain and write its significance	5	CO2
4	Describe allosteric regulation of enzymes with examples.	5	CO5
5	Write 3 differences between enzyme and catalyst. (2.5 marks) Name any five functional classes of enzymes classified by the International Union of Biochemists (I.U.B.) on the Basis of Types of Reactions that they catalyze. (2.5 marks)	5	CO5
6	a. Which acid is increased in Gout disease b. Draw structure of guanine.	5	CO4
7	Explain energetics of glycolysis pathway. (3 marks) Name the 3 regulatory enzymes of glycolysis (2 marks)	5	CO2
8	Write different steps involved in DNA replication	5	CO4

9	<p>Name the disorder related to the variation in following biochemical markers</p> <p>a. Levels of serotonin, norepinephrine and dopamine is decreased in patients suffereing from _____ (1mark)</p> <p>b. HbA1c levels of a person is 11. What do you infer from it. (2 marks)</p> <p>c. Increased levels of cholesterol can result in which disorder. (1 mark)</p> <p>d. SGOT/SGPT levels are increased in _____ (liver/kidney/bones) disorder. (1 mark)</p>	5	CO3
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