[43] SEAT No._____ No. of pages-2

SARDAR PATEL UNIVERSITY
M. Sc (Int.) Biotechnology: Semester II Examination
Wednesday, 20th March, 2019
Time: 10.00 am to 1.00 pm
Sub: PS02CIGB23: Biochemistry

Total Marks: 70

Q-1 Give the answer by choosing appropriate option. [8 X 1]

(1) The Km value of glucokinase is .....
(a) 1mM (b) 10mM (c) 0.1mM (d) None of these

(2) Following enzyme catalyses rate limiting committed step in glycolysis.
(a) Pyruvate kinase (b) Phosphofructokinase (c) Hexokinase (d) None of these

(3) Following is stored in adipose tissue.
(a) Triacylglycerol (b) Glycerol (c) Glycogen (d) Starch

(4) How many cycles of β-oxidation take place for a fatty acid with 18 carbon atoms?
(a) 9 (b) 8 (c) 18 (d) None of these

(5) Which of the following is required as a coenzyme in transamination reaction?
(a) Folic acid (b) Coenzyme A (c) Pyridoxal phosphate (d) Cobalamine

(6) The nitrogen atoms in purine ring are obtained from .....
(a) Glycine (b) Aspartate (c) Glutamine (d) All of them

(7) Urea is synthesized in.....
(a) Mitochondria (b) Cytosol (c) Lysosome (d) Both a and b

(8) Following is the soluble degraded product from pyrimidine metabolism.
(a) β-alanine (b) Urea (c) Allantoic acid (d) None of these

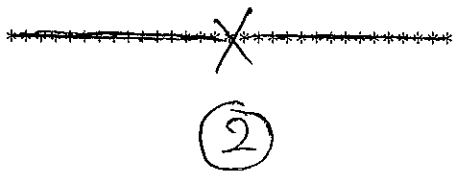
Q-2 Answer the following questions in short. (Any seven) [7 X 2]

(1) Distinguish between hexokinase and glucokinase.
(2) Give stoichiometry (ATP calculation) of complete oxidation of Glucose.
(3) Explain significance of pentose phosphate pathway.
(4) Why should fat be the fuel reserve of the body?
(5) Explain lipolysis of triacylglycerol.
(6) What is the role of glutamate dehydrogenase in deamination reaction?
(7) Give overview of body's amino acid pool.
(8) Explain synthesis of AMP from IMP.
(9) Differentiate between CPS-I and CPS-II.

(P.T.O.)

(1)

Q-3	(a)	Describe the splitting and energy generation phases of glycolysis in detail.	[06]
	(b)	Explain glycogen synthesis from glucose in detail.	[06]
		OR	
	(b)	Draw the steps of TCA with its regulation in brief.	[06]
Q-4	(a)	Describe β-oxidation of even chain fatty acid with one suitable example.	[06]
	(b)	Discuss the synthesis of triacylglycerol and its importance.	[06]
		OR	
	(b)	Write a brief note on ketogenesis and its importance.	[06]
Q-5	(a)	Explain transamination reactions with appropriate example.	[06]
	(b)	Write a brief note on urea cycle.	[06]
		OR	
	(b)	Explain metabolism of glycine in brief.	[06]
Q-6	(a)	Describe the denovo pathway for the synthesis of parent purine nucleotide.	[06]
	(b)	Discuss the mechanism of CTP synthesis in detail.	[06]
		OR	
	(b)	Discuss degradation of purine nucleotides to uric acid.	[06]



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