Exam.Code:0003
Sub. Code: 0259

2122

B.A./B.Sc. (General) Third Semester

Biochemistry

Paper - A: Carbohydrates and Lipid Metabolism

Time allowed: 3 Hours | Max. Marks: 45

***NOTE**: Attempt <u>five</u> questions in all, including Question No. I which is compulsory and selecting one question from each Section.*

x-x-x

I		State whether true or false.	9x1
	i.	Arsenite is the inhibitor of pyruvate dehydrogenase.	
	ii.	Hexokinase has a high affinity for glucose than glucokinase.	
	iii.	Gluconeogenesis is the exact reversal of glycolysis.	
	iv.	Conversion of citrate to isocitrate is catalyzed by aconitase.	
	v.	NAD^+ is used as hydrogen acceptor in HMP shunt.	
		Fill in the blanks	
	vi:	Acetoacetyl CoA is splitted into _____ by enzyme_____.	
	vii.	_____ enzyme is required for conversion of palmitic acid to steric acid.	
	viii.	_____ is a cofactor for acetyl CoA carboxylase.	
	ix.	_____fatty acid acts as precursor for prostaglandins and leukotrienes.	

Section A

II	a.	Discuss the sequence of reactions involved in TCA cycle.	6,3
	b.	What are the possible fates of oxaloacetate?	
III	a.	Describe the different transporters involved in absorption of sugars.	5,4
	b.	Discuss the significance of pentose phosphate pathway.	

Section B

IV	a.	Discuss how the three irreversible steps of glycolysis are bypassed in the process of gluconeogenesis.	6,3
	b.	Write a note on Cori cycle.	
V	a.	Discuss the regulation of glycogen synthesis and degradation by covalent modification.	6,3
	b.	Why glucose is stored as glycogen in liver?	

Section C

VI	a.	Write a note on fatty acid synthase complex.	6,3
	b.	Describe the formation of ketone bodies.	
VII		Write down the reactions involved in breakdown of lauric acid by beta-oxidation pathway. Calculate the number of ATP generated during this process.	9

Section D

VIII	a.	Write down the reactions involved in formation of squalene from acetyl CoA.	5,4
	b.	Write down the synthesis of triglycerides.	
IX	a.	Describe the steps involved in synthesis of gangliosides.	5,4
	b.	Discuss the synthesis and significance of leukotrienes.	

x-x-x