Exam.Code:0003
Sub. Code: 0259

1129

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

Biochemistry

Paper - A: Carbohydrates and Lipid Metabolism

Time allowed: 3 Hours **Max. Marks: 45**

***NOTE**: Attempt five questions in all, including Question No. I which is compulsory and selecting one question from each Unit.*

x-x-x

I. Answer the following:-

a) How hexokinase differs from glucokinase? (1)

b) What do-you mean by arsenic poisoning? (1)

c) Can glycogen synthesis take place de novo? Justify your answer. (1)

d) Write down the source of acetyl CoA, ATP and NADPH required for fatty acid synthesis. (2)

e) Name the hormone classes for which cholesterol serves as a precursor. (2)

f) Name additional enzymes needed for oxidation of unsaturated fatty acids.(2)

UNIT – I

II. a) Giving enzymes and coenzymes, write the various steps of TCA cycle.

b) Write the reactions involved in conversion of Glyceraldehyde 3-Phosphate to pyruvate. (6,3)

III. a) How carbohydrates are digested and absorbed in GIT?

b) Enlist the major differences between glycolysis and pentose phosphate pathway. (5,4)

UNIT – II

IV. a) How glycogenolysis differs from glycogenesis?

b) Describe the regulation of glycogen metabolism. (6,3)

V. a) Define gluconeogenesis. How lactose is utilized for regeneration of glucose in muscle of higher organisms.

b) Elaborate the synthesis of sucrose from glucose and fructose. (6,3)

P.T.O.

UNIT – III

VI. a) Discuss the breakdown of palmitic acid to acetyl CoA.

b) Discuss the biosynthesis of linolenic and arachidonic acid from palmitate in mammals. (5,4)

VII. a) Write down the reactions involved in fatty acid synthesis.

b) How ketone bodies are utilized in the body? (6,3)

UNIT – IV

VIII. a) Discuss the biosynthesis of prostaglandins and their functions.

b) What are chylomicrons?

c) What are the major functions of different types of lipoproteins? (5,2,2)

IX. a) Describe the synthesis of various phospholipids.

b) Write a note on cholesterol linked diseases. (6,3)

x-x-x