Exam.Code:0003
Sub. Code: 0259

1127

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

Bio-Chemistry

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. Name the following:-

a) End products of aerobic and anaerobic glycolysis.

b) Why tumor cells require more glucose than healthy cells.

c) Metabolic importance of pentose-phosphate pathway.

d) Role of dietary fibers.

e) Why is it important that gluconeogenesis is not exact reversal of glycolysis.

f) Role of glycogenin.

g) Why triglycerides are fuel reserves.

h) What happen to fatty acid oxidation in uncontrolled Diabetes Mellitus?

i) Name primary and secondary ketone bodies. (9x1)

UNIT – I

II. Explain:

a) Glucose absorption and role of different glucose transporters.

b) Role of bile salts in lipid digestion and absorption. (5,4)

III. Discuss:

a) Various substrate of gluconeogenesis and their entry into the pathway.

b) Pyruvate dehydrogenase complex and mechanism of its regulation. (5,4)

UNIT – II

IV. Explain:

a) Different types of oxidation of fatty acids and their metabolic importance.

b) Ketogenesis and starvation (4,5)

V. Discuss:

a) Role of various phospholipases.

b) Synthesis of phosphatidyl choline and phosphatidyl serine in mammals.(5,4)

P.T.O.

UNIT – III

VI. Write in detail:-

a) Oxidation in odd chain fatty acid and fate of propionyl CoA

b) Substrates and steps through which carbohydrates are converted into triacyi glycerols and role of various hormones. (5,4)

VII. a) Enzyme and co-enzyme activities of fatty acid synthase multi enzyme complex and its regulation.

b) How desaturation of fatty acids taken place. (6,3)

UNIT – IV

VIII. Discuss:

a) Biosynthesis of ecosanoids.

b) Different types of prostaglandins and their metabolic and pharmacological role. (4,5)

IX. Write in detail cholesterol biosynthesis and specialized products synthesized from cholesterol. (9)

x-x-x