



Paper id: 252274

Printed Page: 1 of 1
Subject Code: BP203T

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BPHARM
(SEM II) THEORY EXAMINATION 2024-25
BIOCHEMISTRY

TIME: 3 HRS**M.MARKS: 75****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief.****10 x 2 = 20**

a.	What are monosaccharides and disaccharides? Give one example of each with structure.
b.	Explain the relationship between free energy, enthalpy and entropy.
c.	What is the role of cyclic AMP in cells?
d.	Define term transamination and ketoacidosis.
e.	What do you understand by β -Oxidation of saturated fatty acid?
f.	Mention the functions of cholesterol in the human body.
g.	What is the net ATP gain from glycolysis process?
h.	Mention biological roles of lipids.
i.	Write the name of two enzymes involved in the urea cycle.
j.	Elaborate the significance of biological substances such as 5-HT, dopamine, noradrenaline and adrenaline.

SECTION B**2. Attempt any two parts of the following:****2 x 10 = 20**

a.	Elaborate the role of cholesterol in the body and its conversion into bile acids, steroid hormones, and vitamin D. Discuss in brief about the Hypercholesterolemia and atherosclerosis.
b.	Explain the citric acid cycle (TCA/Krebs cycle) along with all steps, enzymes, energetics, and their significance.
c.	Discuss in detail about the energy transformations in living systems with suitable examples of endergonic and exergonic reactions.

SECTION C**3. Attempt any five parts of the following:****7 x 5 = 35**

a.	Explain the pentose phosphate pathway (HMP shunt) and its significance.
b.	Describe the symptoms and biochemical defect in phenylketonuria, Alkaptonuria and hyperbilirubinemia.
c.	Describe the pathway of de novo synthesis of fatty acids.
d.	Write a short note on gluconeogenesis and its physiological significance.
e.	Explain how insulin and glucagon regulate blood glucose levels. Describe glycogen storage diseases (GSD) and Diabetes mellitus in detail.
f.	Write a short note on (a) structure and function of nucleic acids (b) synthesis and biological significance of ATP.
g.	Describe the electron transport chain (ETC) and the mechanism of oxidative phosphorylation.