BIOCHEMISTRY

PAPER – II

BIO/D/15/03/II

Time : 3 hours
Max. Marks : 100

Important instructions:

- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

Write short notes on:

1.	a) Classify lipoprotein and state their characteristics. b) List the functions of Poly Unsaturated Fatty Acids (PUFA).		5+5
2.	Describe the role of vitamin K. What are good sources of this vitamin? List deficiency manifestations and explain the biochemical basis for these.		2+2+6
3.	a) Clinical significance of copper. b) Two genetic disorders of copper metabolism in reference to defective genes and copper metabolism.		2+(4+4)
4.	What are different types of Glycogen storage diseases? Explain why a patient with Von-Gierke's disease presents with hyperuricemia.		5+5
5.	a) Explain Folate trap. b) Role of folic acid and vitamin B_{12} in megaloblastic and pernicious anemia, respectively.		4+(3+3)
6.	a) Classify hormones on the basis of their mechanism of action. b) Write about the hormones that are transported by plasma proteins.		4+6
7.	a) Transamination reaction. b) Chemiosmotic theory of oxidative phosphorylation. c) TCA cycle as a metabolic hub.		2+4+4
8.	Write major metabolic fates of pyruvate and acetyl CoA in mammals. Describe various adaptive changes if fasting is prolonged to the state of starvation.		4+6
9.	a) Define reactive oxygen species. b) Role of anti-oxidant vitamins in prevention of oxidative damage.		2+8
10.	What is meant by protein energy malnutrition (PEM)? What are the types of PEM? Briefly describe the clinical and biochemical features of each type.		2+2+6

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