

[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 9201

J

Unique Paper Code : 2493012005

Name of the Paper : Nutritional Biochemistry

Name of the Course : **B.Sc. (Hons.) Biochemistry (NEP)**

Semester : IV

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. There are **six** questions.
3. Attempt any **four** questions.
4. **All** questions carry equal marks.
5. Question No. 1 is compulsory.

1. (a) Define the following terms and their significance (**any five**) :

- (i) PEM
- (ii) RNI
- (iii) RDA
- (iv) EFA
- (v) DRI
- (vi) GTT

- (b) Comment on the following :

- (i) Leafy vegetables inhibit calcium absorption.
- (ii) Eating raw egg can cause biotin deficiency.
- (iii) Dietary fibers reduce blood cholesterol.
- (iv) Copper deficiency leads to hypopigmentation.
- (v) Pregnant women have positive nitrogen balance.

(5,10)

2. (a) What is omega fatty acid? What is the significance of omega 3/omega 6 ratio for human health? Mention their sources and RDA value for adult men and women.

- (b) Explain with the help of suitable example how vitamin can affect the absorption and metabolism of minerals.

- (c) Explain the role of Vitamin B12 and folic acid in Hematopoiesis and Neurology.

P.T.O.

3. Differentiate between the following (**any five**) :
- (a) Glycemic index and Glycemic load
 - (b) Complete protein and incomplete protein
 - (c) Rickets and Osteomalacia
 - (d) Wet Beri-Beri and Dry Beri-Beri
 - (e) MUFA and PUFA
 - (f) Marasmus and Kwashiorkor (5×3=15)
4. (a) Write short notes on the following :
- (i) Gut microbiome in Human health
 - (ii) Nitrogen Balance
 - (iii) Vitamin K in Gamma-carboxylation reactions
- (b) What is NPU? Discuss the factors that affect NPU of protein,
- (c) Explain the Mutual supplementation with example. (9,4,2)
5. Give the biochemical basis for following statements :
- (a) Fluoride prevents dental caries.
 - (b) Calcium promotes Blood clotting.
 - (c) Elevated LDL levels are considered to be atherosclerotic.
 - (c) Vitamin E as an antioxidant.
 - (e) Vitamin A deficiency leads to Xerophthalmia.
 - (f) Niacin deficiency leads to pellagra. (6×2.5=15)
6. (a) What are the three components of total energy expenditure? A food contains 6 grams of carbohydrate, 8 grams of fat and 6 grams of protein. How many calories does this-food provide?
- (b) How do the IRPs regulate the expression of genes associated with iron metabolism?
- (c) Define the Protein sparing effect and mention its significance. (7,6,2)