0512E891   Candidate's Seat No : _____

B.Sc (Hons) FNS Sem.-7 Examination
FNS-411
Advances in Macronutrients

Time : 2-30 Hours]   **December-2024**   [Max. Marks : 70

Instructions: Illustrate your answers with neat diagrams wherever necessary.

Q. 1   Write the following

(i)   Discuss in detail the role of carbohydrates in allergies and mental health disorders. (7 Marks)

(ii) What are the national and international recommendations on carbohydrate   (7 Marks)
      consumption? What suggestions have been put forward for the intake of simple
      sugars, complex carbohydrates, and dietary fiber? Discuss with reasons.

OR

(i)   "The nature of the carbohydrates rather than the amount is the key factor in human (7 Marks)
      health and disease" Explain this statement with suitable examples/ research
      findings.

(ii) Discuss the concept of the Glycemic Index (GI) and its role in managing chronic   (7 Marks)
      diseases.

Q. 2   Write the following

(i)   Describe the process of protein metabolism in the human body, including   (7 Marks)
      digestion, absorption.

(ii) Explain the steps of protein synthesis, highlighting the roles of transcription,   (7 Marks)
      translation.

OR

(i)   Outline the Recommended Dietary Allowances (RDA) for protein across various   (7 Marks)
      age groups and explain factors influencing protein requirements.

(ii) Discuss the methods used to evaluate protein nutritional quality, including   (7 Marks)
      biological value (BV), protein efficiency ratio (PER), and amino acid scoring.

(P.T.O)

Q. 3 **Write the following**

   (i) Explain the functions of lipids in detail.   (7 Marks)

   (ii) Explain lipid metabolism in CVD.   (7 Marks)

OR

   (i) Explain how lipid metabolism is affected in diabetes.   (7 Marks)

   (ii) Explain the changes in lipid metabolism in neurodegenerative diseases.   (7 Marks)

Q. 4 **Write the following**

   (i) Explain seed cycling theory with suitable examples.   (7 Marks)

   (ii) Explain intermittent fasting in detail.   (7 Marks)

OR

   (i) Explain the effect of very low carbohydrate and high protein diet on weight.   (7 Marks)

   (ii) Explain the role of processed meat in metabolic processes.   (7 Marks)

Q 5. Attempt any seven out of twelve   (14 Marks)

(i) How does fiber and complex carbohydrate consumption affect cancer prognosis?

(ii) Define resistant starch.

(iii) What is the leaky gut syndrome?

(iv) List three factors that affect the Glycemic Index of a food and briefly explain how each factor influences it.

(v) How does the method of food preparation affect the Glycemic Index of a carbohydrate-rich food? Provide one example.

(vi) What is the significance of ribosome cell organelle in protein metabolism?

(vii) Define essential amino acids and provide two examples.

(viii) What is the importance of protein intake in aging populations?

(ix) Explain compound lipids.

(x) What is trans fat?

(xi) What is the current carbohydrate requirement?

(xii) Explain the TUL.