

**2020**

**BIOCHEMISTRY — HONOURS**

**Paper : DSE-A-1**

**(Nutritional Biochemistry)**

**Full Marks : 50**

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

1. Answer **any five** questions : 2×5
- (a) Name the enzyme along with its substrate which can digest polysaccharide in the mouth?
  - (b) Define nutrition.
  - (c) 'Deficiency of biotin occur after long term consumption of raw eggs.' Give biochemical reason.
  - (d) Name two fat soluble and two water soluble vitamins.
  - (e) Why Se is termed as essential micronutrient?
  - (f) What do you understand by the term NPU?
  - (g) Why arsenic is toxic to human?
  - (h) Describe the role of essential fatty acids as bactericidal agents.
  - (i) In what form and where is carbohydrate stored in the body?
  - (j) What is nitrogen balance?
2. Answer **any two** questions :
- (a) Why does edema occur in kwashiorkor? Describe the treatment of kwashiorkor. 2+3
  - (b) What is the biological value of a protein? Define protein calorie malnutrition. 3+2
  - (c) Explain the role of calcium in blood clotting. Write the significance of calcium : phosphorous ratio in diet. 3+2
  - (d) Discuss the roles played by Folic acid and its derivative. 3+2
3. Answer **any three** questions :
- (a)
    - (i) Discuss the sources of essential fatty acids.
    - (ii) What is the relationship between fat consumption and health problems such as heart disease and cancer?
    - (iii) How are fats digested in human body? 3+(2+2)+3

**Please Turn Over**

- (b) (i) How are monosaccharides absorbed?  
(ii) What are the dietary requirement of iodine and iron?  
(iii) What is Body Mass Index (BMI)? 3+(2½×2)+2
- (c) (i) Write down the role of Vitamin A in controlling night vision. What will happen in its deficiency?  
(ii) Low omega 3 fatty acid intake can lead to thrombosis. — Explain.  
(iii) Which foods are to be avoided in low cholesterol diet? (4+1)+3+2
- (d) (i) What is nitrogen balance? Explain its significance.  
(ii) Discuss the role of Vitamin E. (2+3)+5
- (e) (i) Cholecalciferol plays a very important role in bone metabolism— comment.  
(ii) Discuss the role of Vitamin C as cofactor in amino acid metabolism. 5+5
- (f) (i) What is dietary fibre? How is it different from crude fibre?  
(ii) What are the factors that determine basal metabolic rate of an individual? (3+2)+5
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