

N.B. : (1) All questions are compulsory.

(2) Use of log table or non programmable calculator permitted.

1. (a) Attempt any two of the following :--- 8
- Explain nutritional significance of fat soluble vitamins.
  - How are acetone bodies in urine estimated ?
  - Describe the functions of WBC in human blood. Discuss clinical significance of WBC count.
  - Give the method for determination of uric acid in blood.
- (b) How is cholesterol estimated in blood? 4
- OR
- (b) Explain the physiological significance of mineral Calcium. 4
2. (a) Attempt any two of the following :--- 8
- Explain the significance of Enzyme Linked Immunosorbant Assay (ELISA)
  - What are amino acids? How are they determined in biological fluids?
  - Discuss any one method for estimation of enzymes.
  - Describe analytical method for the estimation of lipids.
- (b) Explain radioimmunoassay in detail. 4
- OR
- (b) What are carbohydrates? How are they classified? 4
3. (a) Attempt any two of the following :--- 8
- Write note on "pasteurization of milk"
  - What is fuel value of food? Give its significance.
  - Explain in detail the materials used in packaging of liquids.
  - Discuss the need of food legislation.
- (b) Why is biodegradable packaging material necessary? Explain advantages of biodegradable packaging material. 4
- OR
- (b) What is meant by food processing? Discuss various techniques used in food processing. 4

4. (a) Attempt any two of the following :—
- (i) Give the composition of wheat flour. Give the method for the quantitative determination of chalk from wheat flour. 8
  - (ii) How is coloring matter in food sample identified and estimated?
  - (iii) What are the common adulterants in the honey sample? How are they estimated?
  - (iv) How is sodium benzoate estimated from food sample?
- (b) What are constituents of Milk? Describe the method for the estimation of lactose from Milk. 4

OR

- (b) In the determination of calcium from the milk powder complexometrically following results were obtained. 4
- 2.752 gm of milk powder sample was processed and dissolved in 100 cm<sup>3</sup> distilled water. 5.0 cm<sup>3</sup> of the diluted solution required 10.2 cm<sup>3</sup> of 0.01 M EDTA. Calculate the percentage of calcium in milk powder.  
(Atomic weight of calcium is 40.08)

5. Attempt any four of the following :— 12
- (a) Distinguish between serum and plasma
  - (b) Give nutritional significance of phosphorus.
  - (c) Write a note on fluoro immune assay
  - (d) How are carbohydrates estimated from food?
  - (e) What is food deterioration? State its causes.
  - (f) What are the requirements of good packaging materials?
  - (g) Explain the terms with respect to oil:—
    - (1) Iodine Value
    - (2) Peroxide Value
  - (h) Explain in detail the different constituents of Jam.
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