

(2 ½ Hours)

[Total Marks :60

- N.B. : (1) All questions are compulsory.
(2) Use of log table/Non programmable calculator is permitted.

1. (a) Attempt any two of the following:-

- (i) Describe the method for the estimation of creatinine in serum sample.
- (ii) Explain nutritional and physiological significance of vitamin B complex.
- (iii) Give the functions of RBC in human blood. Differentiate between RBC and WBC.
- (iv) Discuss the nutritional significances of the iron and sulphur as minerals.

(b) Write in brief about coagulation of blood sample.

OR

(b) List abnormal constituents of urine. Comment on any one abnormal constituent with reference to diagnosis of disease.

2. (a) Attempt any two of the following:-

- (i) Explain radioimmunoassay in detail.
- (ii) What are carbohydrates? How are they classified?
- (iii) Explain the role of antibodies in immune response. Discuss in detail active and passive immunity.
- (iv) What are essential amino acids? Give any one method for the estimation of amino acids.

(b) Discuss in detail nutritional role of lipids in human physiology.

OR

(b) What is Enzyme-Linked Immuno Sorbent Assay? Explain in detail with applications

3. (a) Attempt any two of the following.

- (i) Give advantages of food preservation. Explain any two physical methods for food preservation.
- (ii) How is fuel value of food determined? Give the need for this determination.
- (iii) What is biodegradable packaging material? Discuss its advantages.
- (iv) List regulatory authorities in India for maintaining the quality of food. Add an informative note on role of FDA in maintaining food quality.

(b) Discuss in detail about the material used for packaging of oil.

OR

(b) How is formaldehyde and boric acid analysed from food sample?

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4. (a) Attempt any two of the following:-

- (i) Give the composition of tea. How is tannin in tea estimated?
- (ii) What are the main constituents of Milk powder? How is iron estimated from milk powder?
- (iii) How is colouring matter extracted and estimated from food sample?
- (iv) State the causes for rancidity oil. Define and explain, "acid value of oil".

(b) Give the composition of wheat flour. How is chalk powder estimated from wheat flour? 4

OR

(b) In an estimation of lactose, in a sample of milk powder by Cole's ferricyanide method, 4

1.520 g of milk powder was processed and the solution was diluted to 250 cm³. 12.9 cm³ of this solution was required for titration of 10.0 cm³ of 0.1N K₃Fe (CN)₆ using methylene blue indicator.

10.0 cm³ of 0.1 N K₃Fe (CN)₆ required 4.5 cm³ of 1% lactose solution
Calculate the percentage of lactose in milk powder

5. Attempt any four of the following:-

- (a) How is cholesterol estimated spectrophotometrically from blood? 12
- (b) Discuss in detail composition of human blood.
- (c) Explain the application of antigen antibody interaction in detection of blood groups.
- (d) How are enzymes estimated spectrophotometrically?
- (e) Discuss the sources of trace elements in canned food.
- (f) Explain any three causes of food deterioration.
- (g) How is chicory in coffee estimated?
- (h) What is the composition of butter? State the preservatives used for butter.

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