

N.B. (i) All questions are compulsory

(ii) Use of log-tables / non programmable calculator permitted.

- Qu.1. a Attempt any two of the following : 8
- (i) What are the components present in urine? How does presence of occult blood in urine lead to diagnosis of diseases?
- (ii) Explain the physiological significance of
(1) Thiamine (Vit B₁) (2) Vitamin E
- (iii) How is cholesterol estimated from blood?
- (iv) Explain the microbiological assay of niacin or niacinamide.
- b Give one method for the estimation of creatinine in serum. 4
- OR**
- b Explain the physiological and nutritional significance of minerals Calcium & Phosphorus. 4
- Qu.2. a Attempt any two of the following : 8
- (i) What is antigen antibody reaction? Explain radioimmunoassay in detail.
- (ii) What are carbohydrates? Discuss any one method for the estimation of carbohydrates.
- (iii) Describe in detail 'agglutination reactions'. What are the uses of these reactions?
- (iv) State the biological importance of essential amino acids. Give any method for the determination of amino acids.
- b Discuss different classes of antibodies. 4
- OR**
- b Describe analytical methods for the estimation of lipids. 4
- Qu.3. a Attempt any two of the following : 8
- (i) Give different types of materials which are used for packaging.
- (ii) What is meant by food processing? Discuss various techniques used in food processing.
- (iii) Describe the importance of food legislation to public health!
- (iv) Discuss 'Cold Preservation' technique used in food industry.

b Explain the main objectives of food packaging. 4

OR

b What are the advantages & disadvantages of food irradiation? 4

Qu.4. a Attempt any two of the following: 8

(i) What are the methods of analysis of following food preservatives

(1) SO₂ (2) Boric acid.

(ii) What are the constituents of milk? How is lactose determined from milk?

(iii) Give the composition of wheat flour. Describe the method for the quantitative determination of chalk from wheat flour.

(iv) Discuss the analytical methods for determination of lead in canned food.

b In determination of I₂ value of an oil 0.085 g of oil required 28.2 cm³ of 0.11 N Na₂S₂O₃. Blank titre value was 32.5 cm³ for same Na₂S₂O₃. Calculate iodine value of oil sample. (Atomic weight of Iodine = 127) 4

OR

b Describe a method for determination of Phosphorous from food sample. 4

Qu.5. Attempt any four of the following: 12

a Suggest a method for the analysis of ketone bodies in blood.

b Give a method for the determination of tannin from tea.

c Discuss the factors to be considered while packaging food.

d Explain the terms inflammatory & immune response.

e Give biological significance of proteins.

f Define acid value, saponification value and ester value of an oil.

g What is the need of pesticide residue analysis?

h How are serum & plasma samples obtained for analysis?
