

Question 1 Write the following

- (i) Discuss the role and importance of food analysis in maintaining food quality (5 Marks) standards.
- (ii) Enumerate and explain different official methods adopted for food analysis (5 Marks)

OR

- (i) Describe Normality, Molarity, and Molality with suitable examples and their (5 Marks) significance in analysis.
- (ii) Describe different types of sampling techniques used in food analysis and (5 Marks) their importance.

Question 2 Write the following

- (i) Explain the dry ashing and wet ashing procedures used in ash content (5 Marks) estimation.
- (ii) Discuss Biuret, Lowry, and UV –visible spectrophotometric methods for (5 Marks) protein estimation.

OR

- (i) Describe different methods used for moisture determination in food samples. (5 Marks)
- (ii) Explain the Kjeldahl and Dumas methods for estimation of protein content (5 Marks) in foods.

Question 3 Write the following

- (i) Explain the principles and methods involved in fat analysis of foods. (5 Marks)
- (ii) Explain the gravimetric methods used for carbohydrate analysis. (5 Marks)

OR

- (i) Differentiate between crude fibre and dietary fibre, and describe their (5 Marks) analytical methods.
- (ii) Discuss the titrimetric method employed for carbohydrate estimation. (5 Marks)

Question 4 Write the following

- (i) Explain the anti-nutritional factor- Phytate, its impact on nutrition, and (5 Marks) analytical approach.

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- (ii) Describe the methods used for estimation of Vitamin A and D in food (5 Marks) samples.

OR

- (i) Discuss the antinutritional factor- Oxalate, its effect, and determination (5 Marks) method.
- (ii) Explain the antinutritional factor – Tannin, its effects, and method of estimation. (5 Marks)

Question 5 Attempt any ten out of fifteen

(10 Marks)

- (i) What are the functions of FDA and AOAC in the field of food analysis?
- (ii) Define and explain the stratified sampling method with an appropriate example.
- (iii) What is a dilution factor? Describe its application in food analysis.
- (iv) Explain the principle and use of a calibration curve in analytical estimations.
- (v) What do you understand by reflux distillation in moisture determination?
- (vi) Explain the role of refractometry in determining moisture content.
- (vii) Describe the volumetric method used for fat estimation.
- (viii) List the food sources of Vitamin C and D.
- (ix) List the dietary sources of Calcium and Phosphorus.
- (x) Mention the deficiency symptoms associated with Iron and Cobalt.
- (xi) Classify anti-nutritional factors (ANFs) based on their effect on nutrition.
- (xii) Discuss the different types of tannins found in foods.
- (xiii) Explain the working principle and application of spectrophotometer.
- (xiv) Describe the kjeldahl method for protein estimation and explain the importance of the conversion factor used.
- (xv) What are chromatographic techniques? Briefly explain how HPLC is used in the estimation of vitamins or amino acids in food samples.

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