



**KERALA AGRICULTURAL UNIVERSITY**  
**B.Tech.(Food Technology)**  
**II Semester Final Re - Examination – August 2025**  
**2023 & Previous admission**

Pafe.1204

**Food Chemistry of Macronutrients (2+1)**

**Marks: 50**  
**Time: 2 hours**

**I Choose the correct answer**

**(10x1=10)**

1. Which are the two types of food Emulsion?
  - a) Oil-in-fat and water-in-oil
  - b) Water-in-water and oil-in-water
  - c) Water-in-fat and water-in-oil
  - d) Oil-in-water and water-in-oil
2. Which one is a solid-in-liquid type dispersed systems?
  - a) Suspension
  - b) Foam
  - c) Aerosol
  - d) Gel
3. Which method involves using a solvent like hexane to extract oil from seeds and nuts?
  - a) Expeller pressing
  - b) Refining
  - c) Solvent extraction
  - d) Hydrogenation
4. During cooking, high temperatures can lead to the formation of ....., which are harmful compounds formed from lipid oxidation.
  - a) Oxisomes
  - b) Lipid peroxides
  - c) Steols
  - d) Phospholipids
5. ....cooking methods typically denatures proteins in food?
  - a) Boiling
  - b) Steaming
  - c) Grilling
  - d) Freezing
6. Which of the following actions can reduce the protein content of food?
  - a) Blanching vegetables
  - b) Adding salt during cooking
  - c) Using acidic marinades
  - d) Stir-frying quickly

**State True or False**

7. Physical processing methods like freezing do not affect the chemical composition of proteins in food.
8. Oxidative damage to proteins during processing can enhance their nutritional quality.
9. Cooking can break down some complex carbohydrates into simpler sugars
10. Frying food decreases the carbohydrate content

**II Write short notes on ANY FIVE of the following**

**(5x2=10)**

1. How moisture content in food influences its functional properties related to water?
2. Define the rheology of diphasic systems.



3. State the enzymatic reactions involved in carbohydrates.
4. Define processing induced physical and chemical changes in food proteins.
5. What is auto oxidation?
6. Define hydrolytic rancidity with suitable example.
7. Name any three essential amino acids and its functions.

**III Answer ANY FIVE of the following (5x4=20)**

1. Brief the role of dietary fibers and their importance in the diet.
2. Discuss the physicochemical aspects of food sols and gels as dispersion systems.
3. Explain the chemical and enzymatic modification of proteins in food processing.
4. What are the chemical changes that occur during the frying of fats and oils?
5. Describe different forms of water present within food matrices.
6. Brief the iodine value and its significance in lipid chemistry.
7. Explain the process and significance of acid hydrolysis of carbohydrates in food chemistry.

**IV Write an essay on ANY ONE of the following (1x10=10)**

1. Elaborate the process of thermal decomposition of lipids and explain its technological applications.
2. Discuss in detail about the importance of proteins in food, highlighting their role in nutrition, texture, and sensory properties.

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