

*Total number of printed pages: 02*

**D/IV/DFET402**

**2024**

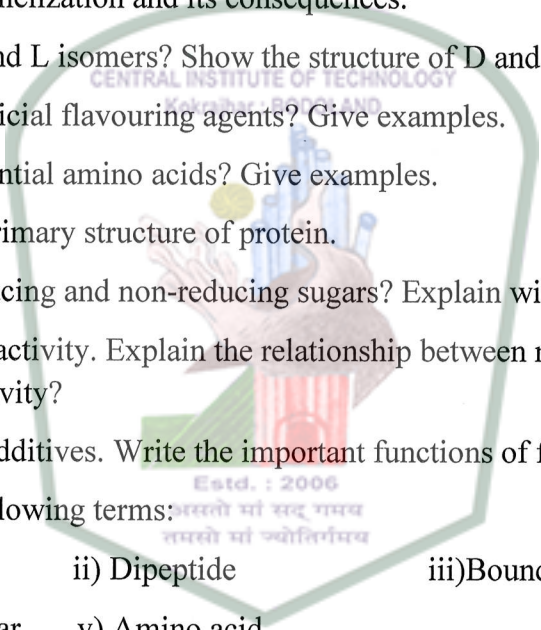
**BASICS OF FOOD CHEMISTRY**

*Full Marks: 100*

Time: Three hours

*The figures in the margin indicate full marks for the questions.*

*Answer any five questions.*

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1. a) Explain Caramelization and its consequences. 5
  - b) What are D and L isomers? Show the structure of D and L glyceraldehyde. 2+4
  - c) What are artificial flavouring agents? Give examples. 4
  - d) What are essential amino acids? Give examples. 5
  2. a) Explain the primary structure of protein. 4
  - b) What are reducing and non-reducing sugars? Explain with examples. 6
  - c) Define water activity. Explain the relationship between moisture content and water activity? 6
  - d) Define food additives. Write the important functions of food additives. 4
  3. a) Define the following terms: 2x5
    - i) Sugar
    - ii) Dipeptide
    - iii) Bound water
    - iv) Triose sugar
    - v) Amino acid
  - b) Draw the ring forms of glucose and fructose? 5
  - c) Give the important functions of protein. 5
  4. a) Classify oligosaccharide giving suitable examples. 6
  - b) What are fatty acids? Give three important characteristics of fatty acids. 5
  - c) Show the formation of dipeptide bond. 5
  - d) Draw Fischer projection of D-Glucose & L-Glucose. 4
  5. a) Define disulphide bond. Show the tertiary structure of protein. 2+4
  - b) Explain how will you classify lipids? 6
  - c) Compare cis fat with trans-fat. 4
  - d) Define hydrolysis. What are the product of hydrolysis of lactose, maltose, 4

- and sucrose?
- 6 a) Distinguish between: 4x3
- i) Amylose and amylopectin
  - ii) Fats and oils
  - iii) Saturated and unsaturated fatty acid
- b) Show the formation of a disaccharide bond. 4
- c) Define SCFA, LCFA, MCFA and VLCFA 4
- 7 a) Write brief notes on: (any four) 4x4
- i) Maillard reaction
  - ii) Polysaccharide
  - iii) Rancidity
  - iv) Protein denaturation
  - v) Saponification
- b) What are anticaking agents? Give examples. 4

