

Total No. of printed pages = 4

FPT-403/BoFC/4th Sem/2017/M

## BASICS OF FOOD CHEMISTRY

Full Marks – 70

Pass Marks – 28

Time – Three hours

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

Answer any *five* questions.

1. (a) What is water activity ? Why is water activity sometimes lower than water content ? 4
- (b) What are enzymes ? Explain why food enzymes are important ? 4
- (c) Compare 'cis' fat with 'trans' fat. 4
- (d) Name two good sources of omega 3 fatty acid. 2

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2. (a) Explain saponifiable lipids giving suitable examples. 3
- (b) Give three important characteristics of fatty acids. 3
- (c) Explain the enzymatic browning of food. 3
- (d) What are the different principal pigments responsible in plants ? Explain any one of them. 5
3. (a) Define the following terms : 2×4=8
- (i) Emulsion (ii) LCFA
- (iii) Nutrients (iv) Hexose.
- (b) Give two examples of disaccharide molecules. 2
- (c) Draw the Fischer projection of D and L Glyceraldehyde. 2
- (d) What is Epimer ? 2
4. (a) What is peptide bond ? Show the formation of a peptide bond. 4

- (b) Differentiate between
- (i) Simple and compound lipids
- (ii) Amylose and Amylopectin.  $3 \times 2 = 6$
- (c) Write four important characteristics of amino acid. 4
5. (a) Write the formula of the following : 5
- (i) Palmitic acid (ii) Glucose
- (iii) Linoleic acid (iv) Stearic acid
- (v) Oleic acid.
- (b) What is activation energy ? What are the different factors effecting the enzyme action ? 5
- (c) Explain hydrogenation and its importance. 4
6. (a) Define hydrolysis, glycosidic and peptide bond. 3
- (b) List the function of lipids in food. 3
- (c) What are food additives ? Write the important functions of food additives. 5
- (d) Give three examples of essential amino acid. 3

7. (a) What is free water ? Write the important properties of carbohydrates. 4
- (b) Write short notes on : (any *three*) 3×3=9
- (i) Role of chemist in food industries
  - (ii) Fat soluble vitamins
  - (iii) Minerals in food
  - (iv) Oligosaccharides.
- (c) Which two monosaccharide combine to form sucrose ? 1