Total No. of printed pages = 4

FPT-403/BoFC/4th Sem/2014/N

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 ? Explain the relation between water activity and moisture content. 3

   (b) What is sugar ? Give examples. 1+2=3

   (c) Write four important functions of protein. 4

   (d) Classify lipids. Explain the formation of fat/oil in the form of a reaction. 4

[Turn over

2. (a) Define the following terms : $2 \times 5 = 10$

(i) Free water

(ii) Rancidity

(iii) Pectin

(iv) Maltose

(v) Glycine.

(b) What is dipeptide bond ? 2

(c) List the function of lipids in food. 2

3. (a) Draw the structure of : $2 \times 4 = 8$

(i) Glucose

(ii) Amino acid

(iii) Ribose

(iv) Glycerol.

(b) Show the formation of a peptide bond. 3

(c) What are food enzymes ? 3

4. (a) Differentiate between : 3×3=9

(i) Essential and non-essential amino acid.

(ii) Saturated and unsaturated fatty acid.

(iii) Fat soluble and water soluble vitamins.

(b) What do you mean by hydrogenation ? What is its effect on shelf life of fat/oil ? 3

(c) Write the important classification of oligo saccharides. 2

5. (a) Explain the various level of protein structure. 6

(b) What is activation energy ? What are the different factors affecting the enzyme action? 4

(c) Define glycosidic bond and covalent bond. 2

(d) Explain hydrolysis with a suitable example. 2

6. (a) What are plant pigments ? Explain any one of the plant pigments. 2+3=5

(b) Explain the role of chemist in food industries. 3

(c) What do you mean by storage stability of food ? Explain the effect of water activity on storage stability. 4

(d) Give two examples of polysaccharides. 2

7. (a) Write short notes on : $3 \times 3 = 9$

(i) Minerals in food

(ii) Emulsions

(iii) Food additives.

(b) Write the formula of pentose and hexose sugar. 2

(c) What is reducing sugar ? Give examples. 3