

Total No. of printed pages = 4

19/3rd Sem/ UFET302



2021

FOOD CHEMISTRY

Full Marks – 100

Time – Three hours

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

Answer any *five* questions.

1. (a) Define simple sugar giving examples. Show the formation of glycosidic bond. 5
- (b) What are saponifiable lipids? Write the important properties of fatty acids. 5
- (c) What do you mean by isomer? Draw Fischer projection of D-Glucose & L-Glucose, D and L-glyceraldehyde. 6
- (d) What are hydrophobic and hydrophilic amino acids? Give examples. 4

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2. (a) Define peptide bond. Draw molecular diagram showing the formation of peptide bond.

5

(b) Explain reducing and non-reducing sugar giving examples. Why glucose is a reducing sugar?

4+2=6

(c) Briefly describe four ways in which a protein could be denatured.

4

(d) Name two water soluble vitamins, their sources and the diseases caused due to their deficiency in diet.

5

3. (a) Define any *five* of the following terms :

2×5=10

- (i) Zwitterion (ii) Triose sugar
(iii) Rancidity (iv) Ascorbic acid
(v) S-S Bridge (vi) Polypeptide.

(b) What are intentional food additives? Write the important reasons for adding colours to food.

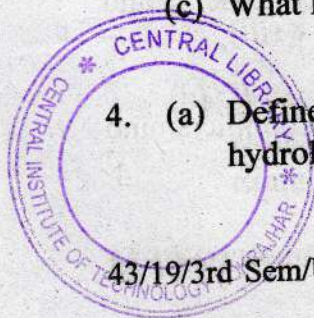
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(c) What holds a protein in its tertiary structure?

5

4. (a) Define hydrolysis. What are the product of hydrolysis of lactose, maltose, and sucrose?

2+6=8



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(2)

(b) Compare 'Cis' fat with 'trans' fat. 5

(c) What is ADI? Explain the functions of thickeners, stabilizers and emulsifiers in food. 1+6=7

5. (a) Distinguish between (any *three*): 4×3=12

(i) Simple and complex lipids

(ii) Essential and non-essential amino acids

(iii) Free water and bound water

(iv) Globular and fibrous protein.

(b) Define non-enzymatic browning? Explain in brief the consequences of Maillard reaction. 4

(c) What are flavour enhancers and its function? Give examples. 4

6. (a) Explain MUFA, PUFA, LCFA and VLCFA. 2×4=8

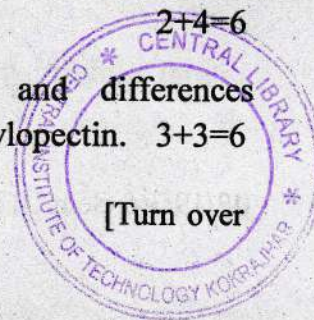
(b) What is meant by water activity? How do water activity and moisture content differ? 2+4=6

(c) Explain the similarities and differences between amylose and amylopectin. 3+3=6

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(3)

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7. (a) Write short notes on any *four* of the following : 4×4=16

(i) Essential fatty acids

(ii) Alpha helix structure of protein

(iii) Caramelization

(iv) Saponification

(v) Anticaking agents.

(b) How are food additives regulated? Why is it important to regulate the use of food additives? 4

