Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **17FP2003** | Duration : | **3hrs** |
| **Sub. Name :** | **FOOD CHEMISTRY** | Max. marks : | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Outline the characteristics of Zone II of Moisture sorption isotherm. | CO4 | 10 |
| b. | Explain in detail on the structure of water and ice. | CO4 | 10 |
| (OR) | | | | |
| 2. | a. | What is an emulsion? Discuss in detail on the instabilities observed in emulsions. | CO4 | 20 |
|  |  |  |  |  |
| 3. | a. | Discuss briefly on the gelation of low molecular weight pectin. | CO2 | 5 |
|  | b. | What is the principle of Lane and Eynon’s method of total sugar estimation? Outline the method of analysis of estimation of total sugars using the same. If you are given a sample of jam, can you determine the amount of reducing and non-reducing sugars in the given sample (5 g). Data given – 10 mL of Fehling’s solution = 55 mg of glucose. Titre reading for reducing sugars = 22 mL and that for total sugars = 19 mL, if 25 mL of the sample is taken for hydrolysis and made up to 250 mL. | CO3 | 15 |
| (OR) | | | | |
| 4. | a. | With a neat flow diagram, explain the steps involved in the manufacture of maltodextrins. | CO1 | 8 |
|  | b. | With a neat flow diagram, explain the steps involved in the production of HFCS. | CO1 | 12 |
|  |  |  |  |  |
| 5. | a. | Give an example each for the following – (i) Oil rich in lauric acid (ii) Oil rich in arachidonic acid (iii) Oil rich in linolenic acid (iv) Oil rich in capric acid. | CO1 | 4 |
|  | b. | What is Saponification value? What is its significance? An analyst was given a sample of oil for determining the saponification value. He took 5 g of the sample. The titre readings are as follows – Blank – 52 ml, Sample – 20 mL. Calculate the saponification value, giving in detail the procedure to be followed. | CO1, CO3 | 2 + 2 + 12 = 16 |
| (OR) | | | | |
| 6. | a. | With a neat flow diagram, discuss the processing steps involved in the manufacture of hydrogenated vegetable oil from an oil seed, highlighting the importance of each step. | CO2 | 16 |
|  |  |  |  |  |
| 7. | a. | Discuss in detail on the functional properties of food proteins | CO1, 4 | 20 |
| (OR) | | | | |
| 8. | a. | Give reasons for the following applications:   1. Xylanases to multi grain bread 2. Pectinases during tomato puree drying 3. α-amylase in bakery 4. Protease in meat 5. Invertase to sugar confectionery | CO5 | 5x4  =20 |
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|  | | **Compulsory**: |  |  |
| 9. | a. | Discuss in brief on the role of the following on the stability of water soluble vitamins –   1. Washing 2. Boiling 3. mixing | CO1, 6 | 3 x 4 = 12 |
|  | b. | Write short notes on the following –   1. Stability of fat soluble vitamins to oxidants 2. Chlorophyll | CO1,6 | 2 x 4 = 8 |