

Degree: B Tech (Hons) & Dual Degree

Date: -- -02-09

Subject: AG33006 Food Science & Technology

Time: 3 Hrs

Number of students: 38

Marks: 50

Instruction: Use separate Answer Scripts for Part A & Part B

Part : A

- Q1. Write major physical & chemical changes in the product during the following operations [5 x 2.0 = 10.0]
- Roasting of coffee bean
 - Fermentation of tea leaves
 - Grinding of cocoa nibs
 - Refining of vegetable oil
 - Fermentation of grape juice
- Q2. What do you understand by food poisoning? Write different types of food poisoning with examples. Also write manifestation, causative agents and preventive measures for botulism. [3.0]
- Q3. Giving details of major ingredients, raw material characteristics, major unit operations involved and effect of process variables on end product quality, discuss the technology of commercial manufacture of following [4.0 x 3 = 12.0]
- Milk chocolate
 - Instant tea
 - Beer

Part : B

- Q4. What are the factors that affect formation of gel of pectin? Give the reaction of Amadori rearrangements. Explain with example enzymatic browning reaction. [1.5+1.5+2]
- Q5. Define softening point, slipping point, and shot melting point, Reichert Meissl Number, Polenske Number, Kirschner Value, Give a mechanism of oxidative rancidity. [0.5X6+2]
- Q6. What are the characteristic features of protein. What is the general formula of an amino acid? Which amino acid does not have an asymmetric carbon atom and name three aromatic amino acids. Define a peptide bond and which bond is bigger in length – normal C-N bond or a peptide bond and why? Define primary and secondary structure of protein. What do you mean by protein denaturation? [1+0.5+1+1+1+0.5]
- Q7. Discuss the advantages and disadvantages of constituents of ice-cream. What does ageing do in ice cream preparation? Draw a schematic view of ice cream freezer. Prepared an ice cream mix containing fat – 10%, serum solids 11%, sugar 15% and stabilizer 0.3%. Use milk containing 6.8% fat, and 9.6% serum solids, cream containing 40% fat and 5.5% serum solids, skim milk powder containing 0.5% fat and 97% serum solids, sugar and stabilizer containing 100% dry matter. [3+1+3+3]