*Name* : .....

*Roll No.* : .....

*Invigilator's Signature* : .....

**CS/B.Tech(FT)/SEM-6/FT-601/2010**

**2010**

# FOOD PROCESS TECHNOLOGY – IV

*Time Allotted* : 3 Hours *Full Marks* : 70

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

## GROUP – A
## ( Multiple Choice Type Questions )

1. Choose the correct alternatives for the following : 10 × 1 = 10

i) Lard is

a) vegetable fat b) microbial lipid

c) animal fat d) rendered pork fat.

ii) The conjugated double bond containing PUFA is

a) linoleic acid b) linolenic acid

c) oleic acid d) both (a) and (b).

iii) A non-saponifiable component of crude fat is

a) sterol b) phospholipids

c) FFA d) true fat.

iv) Natural source of linolenic acid is

a) mustard oil b) milk fat

c) fish oil d) cocoa butter.

v) Rancidity can be prevented by the addition of

a) BHT b) TBHQ

c) both (a) and (b) d) EDTA.

vi) Vegetable oil adulteration with animal fats can be interpreted by measurement of

a) heptadecenoic acid b) lauric acid

c) ricinoleic acid d) none of these.

vii) Coconut oil consists of the dominant fatty acid as

a) caproic acid b) bohenic acid

c) lauric acid d) myristic acid.

viii) Tristearin is available as

a) mustard oil b) vegetable fat

c) butter d) none of these.

ix) Iodine value signifies

a) degree of saturation b) degree of unsaturation

c) both (a) and (b) d) none of these.

x) The gummy matter present in cotton seed oil is

a) cephalin b) lecithin

c) gossypol d) phosphatidyl serine.

**GROUP – B**

**( Short Answer Type Questions )**

Answer any *three* of the following. 3 × 5 = 15

2. Mention two tests to monitor rancidity. Comment on the role of antioxidants in controlling rancidity with example. Give example of two antioxidants. 2 + 2 + 1

3. What do you understand by cocoa butter replacers ? How is it produced from natural vegetable oil ? 2 + 3

4. What are the main quality parameters for oils and fats ? What is dilatometry ? What does it indicate ? Name the instrument for measurement of colour of oil. State its working principle. 1 + 1 + 1 + 1 + 1

5. Define the term reversion. What factors affect reversion ? What is the role of EDTA in reversion process ?

**GROUP – C**

**( Long Answer Type Questions )**

Answer any *three* of the following. 3 × 15 = 45

6. Outline extraction of oil from mustard seed with a neat flow diagram. Discuss their individual functions, with the necessary equipment required. Briefly mention features and function of a mechanical expeller. Extraction of fat from animal source is easier than that of plant source.
Justify. 4 + 6 + 4 + 1

7. What are physical refining and alkali refining ? Describe those two steps with a neat diagram for continuous processing of oil. Why is degumming essential for refining of oil ? Discuss different degumming processes for a crude oil.

3 + 6 + 2 + 4

8. Discuss some unique characteristics of palm oil and coconut oil. Cocoa butter is termed as confectionery plastic fat. Justify. Soybean has its own limitations in food application. Justify. Elaborate preparation of shortenings from naturally occurring vegetable oil. 5 + 2 + 2 + 6

9. Elaborate the extraction procedure of Rice Bran Oil ( RBO ) with flow diagram. How can protein isolate be recovered from mustard seed ? Describe the flow sheet. 7 + 8

10. What do you understand by selectivity and isomerisation in case of a hydrogenation process ? Describe the influence of catalysts for hydrogenation process. What are the product characteristics of hydrogenated fat ? 8 + 4 + 3