Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/B.Tech(FT)/SEM-6/FT-601/2011

2011

FOOD PROCESS TECHNOLOGY-IV (FATS & OILS)

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 : $10 \times 1 = 10$

   i) Fresh olive oil's greenish colour gradually turns yellowish during storage due to which of the following reasons ?

      a) Chlorophyll oxidized to carotenoid

      b) Chlorophyll oxidized to xanthophylls

      c) Chlorophyll oxidized to anthocyanin

      d) Chlorophyll oxidized to pheophytin.

   ii) Which one of the following is a polyunsaturated fatty acid ?

      a) Oleic acid b) Arachidic acid

      c) Myristic acid d) None of these.

iii) Which of the following countries is the highest producer of peanut/groundnut ?

a) United States b) United Kingdom

c) India d) None of these.

iv) Among plant oils, coconut oil is rather unique due to which of the following facts ?

a) Unusually low melting point

b) White colour

c) Unusually high saturated fatty acid content

d) All of these.

v) Canola oil is obtained from which of the genetically modified plants ?

a) Corn b) Coconut

c) Rapeseed d) Cottonseed.

vi) Which one of the following is not a volatile, short-chain fatty acid responsible for characteristic aroma in butter ?

a) Caproic b) Butyric

c) Oleic d) Caprylic.

vii) Which one of the following is a solvent used for solvent-extraction of fats and oils ?

a) De-ionized water b) Ethanol

c) Acetic acid d) None of these.

viii) Which one of the following quality analyses is used for determining oxidative deterioration in edible oil ?

a) Thiobarbeturic acid test

b) Peroxide value test

c) Neither (a) nor (b)

d) Both (a) and (b).

ix) Which one of the following is a non-glyceride lipid ?

a) Vitamin *E* b) Waxes

c) Sterols d) All of these.

x) Which one of the following processing technologies applied to edible oil promotes conversion of *cis*-to *trans*-form of unsaturated fatty acids ?

a) Partial hydrogenation

b) Winterization.

GROUP – B

(Short Answer Type Questions)

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

2. What do you understand by the term shortenings ? Briefly describe preparation of different types of shortenings. 2 + 3

3. Distinguish between hydrogenated and interesterified product in terms of their stability, frying and nutritional quality.

4. How will you evaluate quality of fats/oils ? Elaborate on the basis of different quality parameters.

5. Outline extraction of vegetable oil from oilseed with a neat flow-sheet mentioning functions of each step in brief.

6. Briefly discuss role of plastic fat in bakery and confectionery.

7. What do you understand by the term cocoa butter substitute ? How is cocoa butter substitute produced from natural vegetable oil ? 2 + 3

GROUP – C

(Long Answer Type Questions)

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

8. What is RBD oil ? Describe the various processing steps for crude oil to produce RBD oil in details during continuous processing.

9. Discuss with the flow process the extraction of soyaprotein isolate from soyabean. Describe the flow process for the production of coconut protein isolate. 8 + 7

10. What is intersterification process of fats/oils ? Elaborate two different interstification processes with flow-sheet. Describe the batch interesterification process with a diagram.

3 + 5 + 7

11. What is the objective of fractionation of fats/oils ? Mention the factors which influence the process. How can different fractions of palm oil be obtained by this process ?

3 + 3 + 9

12. Define salad oil. Explain with a flow diagram the preparation of salad oil by winterization. Discuss the product characteristics of salad oil. 2 + 10 + 3