

Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/B.TECH/FT(OLD)/SEM-6/FT-601/2013**

**2013**

**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 any *ten* of the following :

10 × 1 = 10

- i) Omega-3 fatty acid is
  - a) linolenic acid                      b) arachidonic acid
  - c) linoleic acid                      d) elaidic acid.
- ii) Tocopherol is usually removed in the process of
  - a) neutralisation                      b) bleaching
  - c) hydrogenation                      d) deodorisation.
- iii) The stability of an oil depends on the % of
  - a) tocopherol                      b) squalene
  - c) lecithin                      d) cephalin.
- iv) Butter can be substituted by a product called
  - a) shortenings                      b) confectionery
  - c) margarine                      d) hydrogenated fat.

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[ Turn over



- v) The gummy matter present in soybean oil is
- a) gossypol
  - b) phosphatidyl serine
  - c) phosphatidyl choline
  - d) cephalin.
- vi) Triolein is available in
- a) vegetable oil
  - b) butter
  - c) vegetable ghee
  - d) none of these.
- vii) According to the legislation of many countries including India the fat content in margarine should not be less than
- a) 70%
  - b) 80%
  - c) 50%
  - d) 40%.
- viii) The term shortenings is used in bakery industry to import
- a) the stability of the product
  - b) taste of the product
  - c) tender quality
  - d) all of these.
- ix) Fish oil consists of
- a) FPA
  - b) DHA
  - c) arachidonic acid
  - d) both (a) and (b).
- x) Rancidity can be prevented by the addition of
- a) PG
  - b) TBHQ
  - c) BHA
  - d) all of these.
- xi) Lard is
- a) vegetable fat
  - b) microbial lipid derivative
  - c) animal fat
  - d) rendered pork fat.



xii) Mention the name of invisible fat from the following list :

- |              |            |
|--------------|------------|
| a) Margarine | b) Butter  |
| c) Egg       | d) Cheese. |

### GROUP – B

#### ( Short Answer Type Questions )

Answer any *three* of the following.  $3 \times 5 = 15$

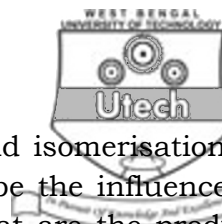
2. Describe briefly the extraction of oil from fleshy fruits. What is the major by-product of this process ?  $4 + 1$
3. What do you understand by the term Cocoa butter substitute ? How cocoa butter substitute is produced from natural vegetable oil ?  $2 + 3$
4. "Fatty acid composition governs the major characteristics of oils & fat." Explain. Distinguish between animal and vegetable fat.  $3 + 2$
5. Do you think solvent extraction method is a better alternative of extraction of oil from oilseeds ? Justify.
6. Discuss the degumming process. What is the utility of this process ?  $4 + 1$
7. What do you understand by the term shortenings ? Explain the processing technology of a shortening fat.  $2 + 3$
8. Explain the terms acidolysis and alcoholysis.

### GROUP – C

#### ( Long Answer Type Questions )

Answer any *three* of the following.  $3 \times 15 = 45$

9. Define salad oil. Explain with a flow sheet the preparation of salad oil by winterization. Discuss the product characteristics of salad oil.  $2 + 10 + 3$
10. What do you understand by Rancidity ? Discuss various kinds of Rancidity occurs in edible oil. What is the mechanism of Rancidification process ? How antioxidant prevents the phenomenon of Rancidity ?  $2 + 5 + 4 + 4$



11. 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
12. Elaborate the extraction procedure of Rice Bran Oil (RBO) with flow diagram. How protein isolate can be recovered from mustard seed ? Describe the flow sheet.  
7 + 8
13. What do you understand by ester-ester interchange ? Give a brief description of intersterification process. Discuss some important commercial applications of intersterified products.  
2 + 9 + 4
14. Explain the term plastic fat. Discuss the role of plastic fats in bakery industries. "Cocoa butter is considered as confectionery plastic fat." Explain. What do you understand by spread fat ?  
3 + 5 + 5 + 2
15. Discuss the product characteristics of margarine. Explain the steps used for the manufacture of margarine. Mention the factors which influence the consistency or spreadability of margarine.  
5 + 5 + 5

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