

Name :

Roll No. :

Invigilator's Signature :

**CS/B.Tech(FT)/SEM-6/FT-601/2012
2012**

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 :
 $10 \times 1 = 10$

i) The conjugated double bond containing PUFA is

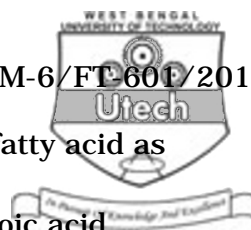
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|------------------|----------------------|
| a) linoleic acid | b) linolenic acid |
| c) elaidic acid | d) both (a) and (b). |

ii) The stability of oil depends on the % of

- | | |
|---------------|--------------|
| a) Tocopherol | b) Squalene |
| c) Lecithin | d) Cephalin. |



- iii) The gummy matter present in Soybean oil is
- a) Gossypol
 - b) Phosphatidyl serine
 - c) Phosphatidyl choline
 - d) Cephalin.
- iv) Tristearine is available in
- a) Mustard oil
 - b) Butter
 - c) Vegetable ghee
 - d) None of these.
- v) Fish oil consists of
- a) EPA
 - b) DHA
 - c) Arachidonic acid
 - d) Both (a) and (b).
- vi) Rancidity can be prevented by the addition of
- a) PG
 - b) TBHQ
 - c) BHA
 - d) all of these.



vii) Coconut oil consists of the dominant fatty acid as

- a) caprylic acid b) caproic acid
- c) erucic acid d) lauric acid.

viii) Iodine value signifies

- a) Degree of saturation
- b) degree of unsaturation
- c) both (a) and (b)
- d) none of these.

ix) Saponification value signifies

- a) Degree of saturation
- b) degree of unsaturation
- c) chain length
- d) none of these.

x) Lard is

- a) Vegetable fat
- b) Microbial lipid derivative
- c) Animal fat
- d) Rendered pork fat.



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GROUP - B

(Short Answer Type Questions)

Answer any *three* of the following.

3 × 5 = 15

2. Describe briefly the extraction of oil from fleshy fruits and animal source as well. What is the major by-product of this process ?
4 + 1
3. Do you think solvent extraction method is a better alternative of extraction of oil from oilseeds ? Justify.
4. Define the term Reversion. Which factors affect reversion ?
What is the role of EDTA in reversion ?
1 + 2 + 2
5. What are the major quality control parameters of fats and oils ? How can you detect the presence of mineral oil in edible oil ? Name the instrument for measuring color of oil and also its working principle.
1 + 2 + 1 + 1
6. What do you understand by rancidity ? What are the compounds that impart rancid odour to fat ? Give example of antioxidants.
2 + 2 + 1
7. Distinguish between hydrogenated and interesterified product in terms of their stability during frying and improving nutritional quality.



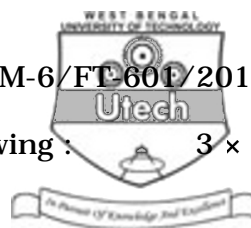
GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following.

3 × 15 = 45

8. 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
9. Discuss the two major characteristics of vegetable oils and fats. Mention two important examples of vegetable oils by indicating their sources and compositions. Give the chemical structure of triglyceride found in palm oil. Why coconut oil exists in solid state at room temperature ? 7 + 4 + 2 + 2
10. Write down the flow diagram of alkali refining process. What is the utility of degumming process as a precursor step ? What is RBD oil ? Describe the RBD steps in details during continuous processing. 3 + 2 + 1 + 9
11. 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
12. 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



13. Write short notes on any *three* of the following : 3 × 5

- a) Creaming power of fats
- b) Ester-ester interchange in product development
- c) Degumming operation
- d) Pentane value
- e) RM value and Polenky value.

