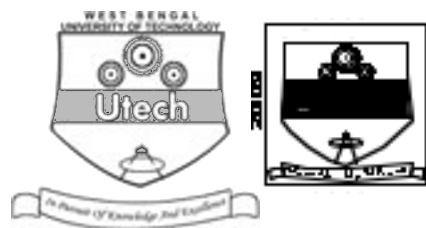


FOOD PROCESS TECHNOLOGY-IV (SEMESTER - 6)

CS/B.Tech (FT)/SEM-6/FT-601/09



1.
Signature of Invigilator

2.
Signature of the Officer-in-Charge

Reg. No.

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Roll No. of the
Candidate

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CS/B.Tech (FT)/SEM-6/FT-601/09

ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009

FOOD PROCESS TECHNOLOGY-IV (SEMESTER - 6)

Time : 3 Hours]

[Full Marks : 70

INSTRUCTIONS TO THE CANDIDATES :

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
2. a) In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question**.
b) For **Groups – B & C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.
3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
4. Read the instructions given inside carefully before answering.
5. You should not forget to write the corresponding question numbers while answering.
6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
9. Rough work, if necessary is to be done in this booklet only and cross it through.

No additional sheets are to be used and no loose paper will be provided

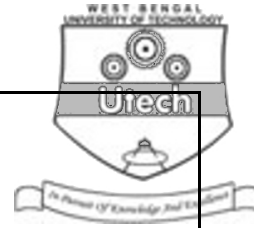
FOR OFFICE USE / EVALUATION ONLY

Marks Obtained

Group – A								Group – B				Group – C				Total Marks	Examiner's Signature
Question Number																	
Marks Obtained																	

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Head-Examiner / Co-Ordinator / Scrutineer

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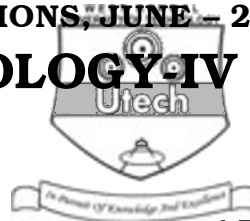


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FOOD PROCESS TECHNOLOGY-IV

SEMESTER - 6



Time : 3 Hours]

[Full Marks : 70

GROUP – A

(Multiple Choice Type Questions)

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



iv) Which one of the following is a volatile, short-chain fatty acid responsible for characteristic aroma in butter ?

a) Caproic

b) Stearic

c) Linoleic

d) Myristic.

☐

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

a) Deionised water

b) Ethanol

c) Acetic acid

d) None of these.

☐

vi) Degumming is an important process that acts as a precursor of which of the following processing steps for fats and oils ?

a) Hydrogenation

b) Crystallization

c) Extraction

d) Refining.

☐

vii) Deodorization process is also known as

a) Steam refining

b) Wet degumming

c) Desolventization

d) None of these.

☐

viii) Choose the correct way of describing trans-fatty acid from the following.

a) Trans-fatty acids are polyunsaturated fatty acids

b) Trans-fatty acids are saturated fatty acids

c) Trans-fatty acids are monounsaturated fatty acids with the double bond in the trans-configuration.

d) Trans-fatty acids are mono-or polyunsaturated fatty acids with the double bond(s) in the trans-configuration.

☐



5

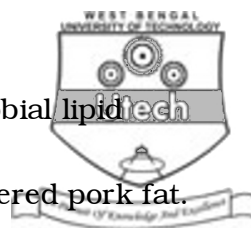
ix) Lard is

a) Vegetable fat

b) Microbial lipid

c) Animal fat

d) Rendered pork fat.



x) Major solvent for oil extraction is

a) benzene

b) toluene

c) hexane

d) none of these.

GROUP – B**(Short Answer Type Questions)**Answer any *three* of the following.

3 × 5 = 15

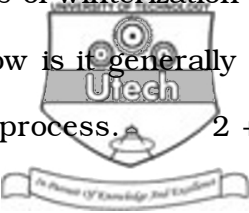
2. What do you understand by the term 'Cocoa butter replacers' ? How Cocoa butter replacer is produced from natural vegetable oil ? 2 + 3
3. Fatty acid is the major part of triglyceride molecules. Explain. Distinguish between animal and vegetable fats. 3 + 2
4. Explain the terms 'acidolysis' and 'alcoholysis'. 5
5. Distinguish between hydrogenated and interesterified product in terms of their stability, frying and nutritional quality. 5

GROUP – C**(Long Answer Type Questions)**Answer any *three* of the following.

3 × 15 = 45

6. Outline the process flow-sheet for oil extraction from a vegetable oil-seed. Mention functions of each step. Compare different methods of extraction of oil from vegetable source. Elaborate the extraction method of fat from animal source. 4 + 4 + 3 + 4



7. What is "Winterization" technique ? Describe the process of winterization of cotton seed oil. What is the importance of hydrogenation of oil ? How is it generally carried out in industry ? Mention the role of catalyst in hydrogenation process.  2 + 5 + 3 + 4 + 1
8. Briefly discuss about the source, composition, properties and industrial application of palm oil and mustard oil. "Plastic fat is an essential ingredient in bakery factory." Justify. Outline the flow-sheet to process margarine. 8 + 3 + 4
9. What is the effective utilization of an oil-cake, produced from oil-extraction unit ? Describe the general process for production of oil-seed protein isolates from oilcake. Write down the standard quality control tests for fats and elaborate any three of them. 1 + 5 + 4 + 5
10. You are asked to prepare a cocoa fat of high purity (very sharp melting point) from normally available cocoa butter, to be used in confectionery. Recommend suitable transformation process with proper justification. Describe the actual process with a neat flow-sheet. What is shortenings. Elaborate the process for manufacture of shortenings from common vegetable oils. 4 + 4 + 2 + 5

END