

**B.E (FTBE) THIRD YEAR, FIRST SEMESTER EXAMINATION 2019**

**FOOD PROCESS TECHNOLOGY - II**

**TIME: 3 H**

**FULL MARKS = 100**

**PART- I (50 MARKS)**

**USE SEPARATE ANSWER SCRIPT FOR EACH PART**

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**Q1. Answer either (a) or (b) in this block.**

**(a) Describe the following (any 1):**

**1 × 5 = 5**

- I. New TG generation without causing isomerization of fatty acid double bonds.
- II. Factors to be governed to obtain crystal-free winter oil.

**(b) Define the following:**

**5 × 1 = 5**

- I. Plastic fats
- II. Pervaporation
- III. Summer oil
- IV. ASE
- V. Soft oil

**Q2. Differentiate between (any 2):**

**2 × 5 = 10**

- a. CBS fats vs. CBR fats
- b. Strategy of refining for Sunflower oil vs. RBO
- c. IPA extraction vs. *n*- Hexane extraction for Cottonseed oil

[ Turn over

**Q3. Answer any two from (a), (b) and (c) in this block.**

**5 + 5 = 10**

- (a) Enumerate the process of lecithin recovery from soybean.
- (b) Enumerate the factors that govern solvent extraction.
- (c) Explain how soap-oil separation is achieved in oil refineries.

**Q4. Answer any one from (a) and (b) in this block.**

**5**

- (a) Illustrate (with diagram) counter-current multistage *n*-hexane extraction of sunflower oil in a Carrousel extractor.
- (b) Illustrate degumming for 'pre-treatment' and for 'refining' of soybean oil.

**Q5. Answer any two from (a), (b) and (c) in this block.**

**10 + 10 = 20**

- (a) How will you predict the TG composition of fats by the *1,3-random-2-random* theory? Why is it difficult to determine adulteration of cocoa butter with Borneo tallow oil?
- (b) Why is expeller pressed soybean oil not preferred while groundnut oil is? Calculate the yields of oil and cake from groundnuts (48% oil and 5% moisture) pressed to leave 8% oil in cake (7% moisture) considering moisture loss.
- (c) Analyze the following:
  - 1. Oil content in seeds pre-hulling vs. post-hulling
  - 2. SFA: MUFA: PUFA in crude oils vs. refined oils

## BACHELOR OF ENGINEERING (F.T.B.E) EXAMINATION, 2019

(3<sup>rd</sup> year, 1<sup>st</sup> Semester)

Food Process Technology-II

PART-II

Time: 3 hours

FM: 100

(Answer question no. 1 and any two of other questions: 10+20x2=50)

1. a) Can you prepare brown rice in Sheller rice milling system- if yes how?  
 b) Discuss working principle of dough ball making machine (any one)?  
 C) Discuss the working principle of paddy separator?  
 d) Name different separation techniques used for separation of different in rice milling system. 2.5x4= 10
2. Using Henderson equation determine the value of c and n from the following data obtained from thin layer paddy drying studies  
 RH= 40% t= 50<sup>0</sup> C, M<sub>e</sub> = 11.5%  
 RH= 60% t=50<sup>0</sup> C M<sub>e</sub> = 18 %  
 What is the difference between huller and Sheller rice milling machine discuss with working principle? 10+10=20
3. What types of flour suitable for bread making? Discuss the milling process of this types of flour. What are the extra precautions should be taken for shelf life of bread in Kolkata? 5+10+5=20
4. Discuss the working principle of ferinograph and alveograph. What types of mixture is suitable for bread and cakes explain why? 7.5+7.5+5=20