Total number of printed pages:05 **PG/2nd/PFET202**

2021

EMERGING FOOD PROCESSING TECHNOLOGY-II: FATS, OILS, BAKERY& CONFECTIONARY

Full Marks: 60

Time: Two hours

The figures in the margin indicate full marks for the questions.

A. Multiple Choice Questions 1 x 20=20

1. The least no. of double bond containing PUFA is
   a. Linoleic acid
   b. α-Linolenic acid
   c. DHA
   d. Arachidonic acid
2. ω-6 PUFA in the following list is
   a. EPA
   b. γ-Linolenic acid
   c. DHA
   d. α-Linolenic acid
3. Oxidative rancidity of edible oil and fat can be prevented by
   a. BHT
   b. TBHQ
   c. NDGA
   d. All of these
4. Which relationship satisfies for saponification value
   a. Molecular weight α Saponification value
   b. Molecular weight α 1/ Saponification value
   c. Molecular weight α 1/ Saponification value^2

d. None of these

5. Phosphatidyl ethanol amine is also known as
   a. Lecithin
   b. Kephalin
   c. Gossypol
   d. Hemagglutinin
6. Hydrogenation of Elaidic acid requires
   a. Two moles of hydrogen
   b. Three moles of hydrogen
   c. Four moles of hydrogen
   d. One mole of hydrogen
7. Animal fat is susceptible to oxidative rancidity due to
   a. Nonoccurrence of tocopherol
   b. Nonoccurrence of retinol
   c. Nonoccurrence of polyphenols
   d. None of these
8. Koettstorfer number signifies
   a. Number of double bonds
   b. Chain length of the fatty acid
   c. Molecular weight of the fatty acid
   d. Degree of unsaturation in the fatty acid chain
9. Miscella refining is carried out conventionally by the application of
   a. Toluene
   b. Xylene
   c. Hexane
   d. Benzene
10. Designer lipid can be produced by
   a. Winterization
   b. Fractionation
   c. Interesterification
   d. All of these

11. Bakers may add as a source of sulphur dioxide in biscuit floors
    a. Sodium sulphite
    b. Sodium metabisulphite
    c. Sodium hydroxide
    d. Disodium sulphate
12. An example of a minor ingredient used in baked product is
    a. Milk
    b. Eggs
    c. Spices
    d. Salt
13. Vigorously combining softened fat and sugar while incorporating air is called
    a. Beating
    b. Creaming
    c. Aeration
    d. Mixing
14. When starch granules reach this approximate temperature, they absorb additional moisture and expand
    a. 140°F
    b. 156°F
    c. 135°F
    d. 182°F
15. The phenomenon where there is a change in the location and distribution of water molecules within the product is known as
    a. Retrogradation
    b. Gelatinization
    c. Leavening
    d. Staling
16. The type of mixer used for soft dough cookies, mixes, pretzels, muffins is
    a. Single sigma
    b. Double sigma

c. 3 Roller bar

d. Planetary

17. Tunnel oven has a long baking chamber of about this length

a. 66 metres

b. 74 meters

c. 80 metres

d. 92 meters

18. An example of an artificial sweetener used in confectionary is

a. Glucose

b. Honey

c. Sucrose

d. Aspartame

19. The % range of plasticizer present in a confectionary gum base is

a. 20-35

b. 10-15

c. 25-40

d. 30-40

20 The % of fat present in Low fat cocoa is

a. 5%

b. 20%

c. 35%

d. 10%

B. Very Short Question 2*6=12

1. Write down the composition of soya lecithin **OR** Define bleaching. Differentiate between single bleached and double bleached oil.

2. How alkali refining differs from miscella refining? Mention one use of acid oil in industry **OR** Differentiate between rancidity and reversion. Give an example of metal chelator.

3. Give the composition of deodorizer distillate obtained from soybean oil refining. Which one is antioxidant in the composition? **OR** Differentiate between Cocoa butter extender and cocoa butter replacer. What is miscella winterization process?

4. Describe briefly 1(one) type of Oven used in industrial baking of foods.
5. Explain the function of Gluten in dough making.
6. Explain the stage of "protein coagulation" in the process of baking.

C Short Question 4*7=28

1. Give the mechanism of action of antioxidant to prevent the auto oxidation of lipid.
2. Differentiate between physical refining and chemical refining process with flow diagram **OR** Mention the reaction between palmitoleic acid and iodine by indicating the name of the product. Justify the requirement of number of hydrogen molecules during the hydrogenation of TG composed with α-linolenic acid.
3. Describe the process of continuous deodorization with design of continuous deodorizer **OR** Discuss the modification of lipid by interesterification.
4. Differentiate between MAE, UAE and SCFE of oil **OR** How crude oil from oilseed is extracted by screw press. What is it's difference with other pressing systems of extraction of oil?
5. Explain the working of a confectionary moulder (no diagram required).
6. Explain the steps involved in the manufacturing of confectionary gum.
7. Explain the steps of refining and tempering in the technology of processing of cocoa beans.