

SEMESTER-II (Pool-A)

COURSE NAME : ANALYSIS OF EDIBLE OILS AND FATS (CHOI-A14)

Number of Credit: - 02

Maximum marks: 50

Contact Hours/Week : 04 Hours/Week

Total Hours/Semester: 60 Hours

Duration of Examination: 04 Hours

Nature of Examination : No Semester Examination at University level.

Only Internal Examination at Department/College level.

Distribution of Marks:

S. No.	Name of Exercise	Marks
1.	Exercise No. 1.	15
2.	Exercise No. 2.	15
3.	Practical Record	05
4.	Good Laboratory Skills and Regularity in Practicals	05
5.	Comprehensive Viva-voce	10
Total Marks		50

Theory:

UNIT-I:

Sources, chemical composition, physical and chemical characteristics, functional and nutritional importance of dietary oils and fats. Post-harvest handling storage and processing of oilseeds for direct use and consumption.

UNIT-II:

Extraction of oil by mechanical expelling and solvent extraction and obtaining de-oiled cakes suitable for edible purposes. Processing of other plant sources of edible oils and fats like coconut, cottonseed, rice bran, maize germ, *etc.*

UNIT-III:

Refining: Clarification, degumming, neutralization (alkali refining), bleaching, deodorization techniques / processes. Blending of oils.

UNIT-IV:

Production of butter oil, lard, tallow, Margarine, Cocoa butter equivalents, shortenings, low fat spreads, peanut butter *etc.* Speciality fats and designer lipids for nutrition and dietetics, especially by biotechnology.

Practical:

1. Determination of moisture content in fat.
2. Determination of melting point of fat.
3. Determination of specific gravity of fat.
4. Determination of % impurities / gum in fat.

5. Qualitative checking of various adulterants in labs.
6. Extraction of oil from rice brain, pellets and spent wash.
7. Determination of iodine value.
8. Determination of saponification value.
9. Determination of free fatty acids.
10. Determination of unsaponifiable matter.
11. Colour measurement of fat.
12. Determination of RM &P value.
13. Determination of refractive index of fat.
14. Effect of particle size on the amount of oil extracted
15. To visit oil processing industry
16. Estimation of Vit A, D in desi ghee.
17. Determination of Polenske value of oil and fat
18. Analysis of ice cream for fat, acidity, total solids, foreign fat

Books:

1. Bailey's Industrial Oil & Fat Products, 4th ed. John Wiley & Sons.
2. The Industrial Chemistry of Fats & Waxes 3rd. by Bailliere, Tindall & Cox.
3. Handling & Storage of Oilseeds, Oils, Fats & Meal by Paterson, HBW.
4. Modern Technology in the Oils & Fats industry by S.C. Singhal, OTA.

