

2025

FOOD PRODUCT TECHNOLOGY V - (OILS AND FATS)*Full Marks : 100*

Time : Three hours

*The figures in the margin indicate full marks for the questions.**Answer **any five** questions.*

1.	a)	Explain the term refining. Describe the chemical refining process of crude oil in detail.	3+15=18
	b)	Differentiate between the chemical refining and physical refining process of crude oil.	2
2.	a)	What is a fatty acid? Explain their types with examples.	5
	b)	Describe the three processes of extracting oil from oilseeds, taking into account the amount of oil present in the oilseed and meal.	5
	c)	Explain the oil extraction process of the following oils (any one) i) Olive oil and ii) Palm oil	5
	d)	Describe the process of animal fat recovery or rendering.	5
3.	a)	Describe the various methods of virgin coconut oil (VCO) extraction.	20
4.	a)	Define interesterification. Discuss the types of interesterification process.	1+9=10
	b)	What are the changes that occur in fat when it is heated?	4
	c)	Give a brief overview of the winterization process. What is the use of it? What kinds of oils undergo winterization?	4+1+1=6

5.	a)	Match the following	5×1=5																								
		<table> <tr> <th colspan="2">Column A</th><th colspan="2">Column B</th></tr> <tr> <td>i)</td><td>Peroxide value</td><td>a)</td><td>Measure the amount of free fatty acids</td></tr> <tr> <td>ii)</td><td>Acid value</td><td>b)</td><td>Measure the extent of unsaturation</td></tr> <tr> <td>iii)</td><td>Iodine number</td><td>c)</td><td>Measures the extent of rancidity</td></tr> <tr> <td>iv)</td><td>Saponification value</td><td>d)</td><td>Identification of oil and testing its purity</td></tr> <tr> <td>v)</td><td>Refractive index</td><td>e)</td><td>Size of fatty acid chain</td></tr> </table>	Column A		Column B		i)	Peroxide value	a)	Measure the amount of free fatty acids	ii)	Acid value	b)	Measure the extent of unsaturation	iii)	Iodine number	c)	Measures the extent of rancidity	iv)	Saponification value	d)	Identification of oil and testing its purity	v)	Refractive index	e)	Size of fatty acid chain	
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	b)	Write the name of major fatty acids present in the following oils Coconut oil, palm oil, sunflower oil, soybean oil, peanut oil	5																								
	c)	Explain the various physical properties of oils and fats.	10																								
6.	a)	Discuss the chemical properties of oils and fats.	12																								
	b)	Enlist some functions of oils and fats in foods.	3																								
	c)	Write down any five nutritional importance of oils and fats.	5																								
7.	a)	Write short notes on (any four)	5×4=20																								
		i) Margarine iv) Oilseeds protein isolates vii) Peanut butter ii) Butter v) Cocoa butter equivalents viii) Low fat spreads iii) Shortening vi) By-product of fat/oil processing																									