

C.U.SHAH UNIVERSITY

Summer Examination-2022

Subject Name: Industrial Chemistry-II**Subject Code: 4SC05IDC1****Branch: B.Sc. (Chemistry)****Semester: 5****Date: 28/04/2022****Time: 11:00 To 02:00****Marks: 70**

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

Q-1	Attempt the following questions:	(14)
	a) Define: Unit Process	01
	b) Define: Esterification	01
	c) Define: Fat	01
	d) Complete the following chemical reaction	01
	$\text{CH}_2=\text{CH}_2 + 1/2 \text{O}_2 (\text{air}) + \text{H}_2\text{O} \quad \underline{\hspace{2cm}}$	
	e) Write any two nitrating agents.	01
	f) Write the uses of solvent extraction unit operation.	01
	g) What is the application of Coumarin?	01
	h) Which catalyst is used for the synthesis of methanol from synthesis gas?	01
	i) What are the differences between oil and fats?	02
	j) Write Industrial uses of hydrogen.	02
	k) Write the physical properties of oil and fats.	02

Attempt any four questions from Q-2 to Q-8

Q-2	Attempt all questions	(14)
	a. What is Polymerization? Explain it with suitable examples.	07
	b. Discuss about the Industrial organic synthesis of Methanol.	07



Q-3	Attempt all questions	(14)
a.	Write a note on (a) Saponification value (b) Acid value (c) Iodine value.	07
b.	Write a short note on Industrial organic synthesis of Ethyl acetate and Phenol.	07
Q-4	Attempt all questions	(14)
a.	Write a note on Distillation unit operation.	07
b.	What is Nitration unit process? Explain it with some examples.	07
Q-5	Attempt all questions	(14)
a.	Write a note on sulphonation unit process.	08
b.	Mol. Wt. of unsaturated fat is 956 gm/moles and required moles of iodine formation are 4. Calculate the iodine value for the same.	03
c.	Mol wt. of Triglyceride derivative is 1451 gm/moles and 3 moles of base (KOH) required for saponification. Calculate the saponification value for the same.	03
Q-6	Attempt all questions	(14)
a.	Discuss any two method for industrial production of hydrogen.	07
b.	Discuss about commercial production of carbon dioxide and oxygen.	07
Q-7	Attempt all questions	(14)
a.	Write a note on the manufacturing process of methyl anthranilate, methyl salicylate and ester of benzyl alcohol.	07
b.	What are the uses of carbon dioxide, nitrogen and oxygen?	07
Q-8	Attempt all questions	(14)
a.	Explain industrial manufacturing process of organic synthesis of acetic acid.	07
b.	What is Petrochemical? Discuss the manufacturing process of Acetone and Propenone.	07

