


Name:			
Enrolment No:			
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES Supplementary Examination, December 2023			
Course: Process Chemistry Program: B.Tech (CE+RP) Course Code: CHCE2018		Semester: 3 Time : 03 hrs. Max. Marks: 100	
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	Differentiate between unit operation and unit process with an example for each.	4	CO1
Q 2	Critique the Dual process and Solvay process in terms of raw material and the advantage it brings.	4	CO4
Q 3	Identify which of the following process variables are increased or decreased to minimize the biuret formation in the manufacturing of urea. (i) residence time (ii) temperature (iii) NH ₃ /CO ₂ feed ratio	4	CO3
Q 4	How is fermentation classified? Give an example of any one pharma product produced by each of them.	4	CO4
Q 5	Name any four labels of hazardous chemicals and their symbols.	4	CO1
SECTION B (4Qx10M= 40 Marks)			
Q 6	(a) Explain the process variables that are controlled for the selective oxidation of hydrocarbons to value added products by suppressing their complete combustion.	6	CO3
	(b) List out any four industrial fermentation reactors and draw the diagram of any one of them.	4	CO4
Q 7	Name any five methods of petroleum exploration. Explain any two of them in detail.	10	CO1
	(Or) Describe the drilling operation and petroleum well completion.		
Q 8	What is an antibiotic? Describe the production of any one antibiotic.	10	CO2
Q 9	Discuss the classification of fire and an extinguishing technique for each of them.	10	CO4
SECTION-C (2Qx20M=40 Marks)			
Q 10	(a) With the help of process flow diagram, explain the fluidized catalytic cracking.	10	CO2

	(b) Describe the contact process of manufacture of sulphuric acid with the help of flow diagram. (Or)	10	CO2
	(a) Draw the process flow diagram of catalytic reforming and explain the same briefly.	10	CO2
	(b) Explain the manufacture of bioethanol from lignocellulose with the help of process diagram.	10	CO2
Q 11	(a) What is API. How are they categorized? Name the types of impurities present in them with an example for each and means of controlling it.	10	CO3
	(b) Write a brief account of any one physical, chemical, and biological method of industrial wastewater treatment.	10	CO4