UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2022

Course: Process Chemistry   **Semester: 3**
Program: B.Tech (CE+RP)   **Time : 03 hrs.**
Course Code: CHCE2018   **Max. Marks: 100**

Instructions:

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	Give the names of any two oxidizing agents with an example of chemical reaction for each.	4	CO1
Q 2	Write the anodic and cathodic reactions of electrolysis of NaCl solution to NaOH and Cl_2.	4	CO1
Q 3	What is the disadvantage of chamber process of manufacture of sulfuric acid? How is it overcome in contact process?	4	CO4
Q 4	Name the types of impurities in active pharmaceutical ingredient and one possible source for each of them.	4	CO3
Q 5	Give the names of any five hazard labels of chemicals.	4	CO1

SECTION B
(4Qx10M= 40 Marks)

Q 6	(a) Explain the hydrogenation of oil to solid fat along with the reaction involved.	5	CO4
	(b) Briefly explain the production of sulfate pulp.	5	CO3
	(Or)		
	(a) Give a brief account of any one industrial nitration process.	5	CO3
	(b) What are the different types of petroleum refinery?	5	CO4
Q 7	With the help of diagram, explain the manufacture of ammonia from N_2 and H_2 by Haber process.	10	CO2
Q 8	Describe the manufacture of anyone antibiotics with the help of flow diagram.	10	CO2
Q 9	Give an account of classification of fire and various fire extinguishing techniques.	10	CO1

SECTION-C
(2Qx20M=40 Marks)

Q 10	(a) Explain fluidized catalytic cracking process to increase the quantity and quality of gasoline.	10	CO2
	(b) Describe the ethanol production from lignocellulose biomass.	10	CO2

	(Or)			
	(a) Give a description of the catalytic reforming of naphtha with the help of a flow diagram.	**10**	**CO2**	
	(b) Explain the manufacture of elemental sulfur by Claus process with the help of flow diagram.	**10**	**CO2**	
Q 11	(a) Explain the principle, operation and parameters affecting the crystallization.	**10**	**CO3**	
	(b) Write a brief account of various treatment methods for industrial effluent.	**10**	**CO4**	