Name: **Enrolment No:**	UPES UNIVERSITY OF TOMORROW

UPES

End Semester Examination, December 2023

Course: Chemical Technology **Semester: III**

Program: B.Tech (Chemical Engineering) **Time : 03 hrs.**

Course Code: CHCE2010 **Max. Marks: 100**

S. No.		Marks	CO
Q 1	Identify the unit operations and unit processes among the following. (a) Filtration (b) Crystallization (c) Nitration (d) Reforming	**4**	**CO1**
Q 2	Compare the different processes for syngas production in terms of raw materials and hydrogen yield.	**4**	**CO4**
Q 3	Identify the purpose of pretreatment of lignocellulose for ethanol production and give the names of any two pretreatment methods.	**4**	**CO3**
Q 4	Classify the pulping of wood and which of them is used in the manufacture of newsprint paper.	**4**	**CO4**
Q 5	Compare the biogenic and abiogenic theories to explain the origin of petroleum.	**4**	**CO4**
	SECTION B **(4Qx10M= 40 Marks)**		
Q 6	Draw the process flow diagram of manufacture of urea and explain the steps involved.	**5** **5**	**CO2** **CO3**
Q 7	Describe the lead chamber process of manufacture of sulfuric acid with the help of flow diagram. Identify its important disadvantage. **(Or)** Explain the various methods and the steps involved in the conversion of delignified lignocellulose to ethanol.	**5** **5** **5** **5**	**CO2** **CO3** **CO2** **CO3**
Q 8	Describe the chemical pulping by sulfate pulping process and the recovery of chemicals from the pulp digestion liquor.	**5** **5**	**CO2** **CO3**
Q 9	Discuss briefly about the drilling and completion of petroleum oil well.	**10**	**CO3**
	SECTION-C **(2Qx20M=40 Marks)**		
Q 10	(a) Explain the manufacture of any one of the paper products. (b) Name the different electrolytic processes for caustic soda production and explain any one of them in detail.	**5** **5** **5** **5**	**CO2** **CO3** **CO2** **CO3**

Q 11	(a) Name any four methods of petroleum exploration and explain any two of them in detail.	**10**	**CO4**
	(b) Draw the process flow diagram of the alkylation process in petroleum refinery and explain the steps involved. Give any one of its important uses.	**5** **5**	**CO2** **CO3**
	(Or)		
	(a) Give a brief account of different methods of recovery of oil.	**10**	**CO4**
	(b) Describe the isomerization process with the help of flow diagram and give its important purpose.	**5** **5**	**CO2** **CO3**