

--	--	--	--	--	--	--	--	--	--

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)



B. Tech (Fifth Semester - Regular) Examinations, November – 2024

22BCHPC35001 – Chemical Process Technology

(Chemical Engineering)

Time: 3 hrs

Maximum: 70 Marks

Answer ALL questions
(The figures in the right hand margin indicate marks)

PART – A

(2 x 5 = 10 Marks)

Q.1. Answer **ALL** questions

	CO #	Blooms Level
a. With suitable example differentiate between unit process and unit operation?	CO2	K1
b. Analyse the major engineering problems for production of soda ash.	CO3	K4
c. Why Bleaching of pulp is required? Which chemicals are used for this purpose?	CO1	K2
d. What are the by-products of sugar industry and its uses?	CO1	K1
e. Write the chemical reactions involved for soap preparation.	CO1	K2

PART – B

(15 x 4=60 Marks)

Answer **ALL** the questions

	Marks	CO #	Blooms Level
2. a. Discuss about the Solvay process for producing soda ash, with a focus on chemical reactions, raw materials, kinetics, and engineering issue by a neat flow sheet.	10	CO1	K3
b. Analyse some of the Process Equipment Symbols which are used for Distillation, Drying of Solids, Evaporation, and Extraction devices with schematic representation.	5	CO2	K4
(OR)			
c. Enumerate the main chemical industry products along with their area of applications	5	CO1	K4
d. Describe the manufacturing process for production of caustic soda with all possible chemical reaction and neat sketch.	10	CO2	K3
3.a. What are the methods for the production of pulp from raw wood?	7	C03	K1
b. Evaluate the methods of extracting vegetable oils and its purification with a neat flow diagram	8	C02	K2
(OR)			
c. With neat flow sheet & suitable chemical reactions describe the manufacturing process of soaps & glycerine	10	CO2	K3
d. Discuss the functional role of various units of Papermaking process.	5	CO2	K2
4.a. Describe about Indian Sugar Industry mentioning about Extraction of Sugar from sugar cane with neat flow sheet	8	C04	K3
b. What are the raw materials for preparation of glass? What are the manufacturing steps involve in preparation of glass?	7	C04	K4
(OR)			
c. Classify the different characteristics of surface coating material.	6	C01	K1

d.	Elaborate about of various types components that can be used during manufacturing process of Paints and Varnishes.	9	C01	K1
5.a.	Classify the Polymer On the basis of physical properties, physical and chemical structure, preparation methods and application.	10	C01	K2
b.	Explain about Polymerization process for Vinyl Polymer.	5	C01	K1
(OR)				
c.	Discuss in details with a neat flow sheet the production of polyethylene by low pressure Ziegler's process. mention its properties and uses.	8	C02	K3
d.	Examine the chemistry, production and uses of cellulose .Mention the production process of 6,6-nylon	7	C03	K3

--- End of Paper ---