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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

January 2024 Semester End Main Examinations

Programme: B.E.

Branch: Chemical Engineering

Course Code: 19CH7DCCTN

Course: Chemical Technology

Semester: VII

Duration: 3 hrs.

Max Marks: 100

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

			UNIT - I	CO	PO	Marks
1	a)	Explain the major engineering and social problems associated during the making of coke from coal.	<i>CO6</i>	<i>PO6</i>	06	
	b)	Distinguish between LPG and LNG. With a neat PFD, illustrate the production of LNG and LPG.	<i>CO2</i>	<i>PO3</i>	14	
OR						
2	a)	Elaborate on the chemical constituents in the crude petroleum.	<i>CO1</i>	<i>PO2</i>	10	
	b)	With the help of a neat sketch explain the working of the double column used in Linde-Frankl process. Label all the streams of the column.	<i>CO3</i>	<i>PO2</i>	10	
			UNIT - II			
3	a)	Explain the manufacture of ortho-phosphoric acid by wet process (hydrochloric acid leaching –IMI process) with process block diagram and chemical reactions.	<i>CO4</i>	<i>PO3</i>	10	
	b)	Explain with a neat process flow diagram the Solvay or ammonia -soda process for manufacture of sodium carbonate (Soda Ash).	<i>CO5</i>	<i>PO2</i>	10	
			UNIT - III			
4	a)	Explain the manufacturing of soaps, fatty acids and glycerin with a neat flow diagram. What are industrial and pharmaceutical uses of glycerin?	<i>CO3</i>	<i>PO2</i>	10	
	b)	Write the materials balance with by-products for sugar production considering basis 1 ton sugarcane using simple process block diagram.	<i>CO5</i>	<i>PO2</i>	10	
			UNIT - IV			
5	a)	With a neat process flow diagram and relevant reactions, elucidate the production of ethyl alcohol by fermentation process.	<i>CO4</i>	<i>PO2</i>	10	

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

	b)	With help of relevant reactions and process flow diagram, explain the Sulfate (Kraft) Pulping Process.	CO3	PO2	10
		OR			
6	a)	What is penicillin? List the properties of penicillin. Explain with a process block diagram, the commercial production of penicillin via aerobic batch fermentation.	CO6	PO6	10
	b)	Explain with a neat block diagram production of Poly vinyl chloride (PVC) using suspension and emulsion polymerization.	CO4	PO3	10
		UNIT - V			
7	a)	What are the constituents of paint? Classify paints based on their applications.	CO4	PO2	10
	b)	What are bio-fertilizers? Which microbes are used as bio fertilizers? Justify the advantages of using bio fertilizers over chemical fertilizers.	CO6	PO6	10
