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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.

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.			UNIT - I	<i>CO</i>	<i>PO</i>	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

	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
