Seat No.:	Enrolment No.
	Bin officer 1 to:

Subject Code: 2143505

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER- IV (NEW) EXAMINATION - SUMMER 2015** 

Date:03/06/2015

T	ime: nstruc	t Name: Chemical Process Technology 10.30am-01.00pm Total Marks: 70 ections: 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks.	)
<b>Q.1</b>	(a)	What is oleum? Describe in detail the contact process for manufacturing sulphuric acid?	07
	<b>(b)</b>	Which compound of urea is used as adhesive in plywoods? Describe in detail the major engineering problems faced during the production of urea?	07
Q.2	(a) (b)	Describe the manufacturing process of Benzene in detail? What do you mean by cracking? Draw the simplified Petroleum refining process.	07
	<b>(b)</b>	<b>OR</b> What is petroleum? Give the composition of crude oil? Explain the important properties of crude oil.	07
Q.3	(a)	Explain the given unit process and name of the typical industries using this process (i) Amination by ammonolysis (ii) Condensation (iii) Cyclization (iv) Esterification (v) Hydration (vi) Isomerization (vii) Reduction	07
	<b>(b)</b>	Give the schematic representation of given unit operation and comment on it  (i) Continuous Fractionator (ii) Rotary Drier (iii) Multi effect evaporator  (iv) Leaching (v) Settling tank (vi) Filter press (vii) Stripping  OR	07
Q.3	(a)	Explain the given unit process and name of the typical industries using this process (ii) Nitration (ii) Polymerization (iii) Thionation (iv) Dehydrogenation (v) Halogenation (vi) Carbonylation (vii) Alkylation	07
	<b>(b)</b>	Give the schematic representation of given unit operation and comment on it  (i) Dialysis (ii) Pelletizing (iii) Jigging (iv) Batch distillation  (v) Centrifugal pump (vi) Bag Filter (vii) Centrifugation	07
Q.4	(a)	Explain the manufacturing process for Methanol and major engineering problems involved?	07
	<b>(b)</b>	Explain the Lime soda process in detail?	07
_		OR	
Q.4	(a) (b)	Elaborate the fermentation process for production of Citric acid? By which two process can Ethyl alcohol be produced? Explain production of ethyl alcohol from molasses?	07 07
Q.5	(a)	Draw the flow diagram for producing Chlor alkali? What are the safety issues in this plant?	07
	<b>(b)</b>	Explain the manufacturing of synthesis gas justifying the engineering problems.	07
		OR	
Q.5	(a) (b)	Explain in detail the manufacturing process of ethylene? Elaborate the manufacturing process for Nitric acid?	07 07

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