

Reg. No.

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**B.E. / B.TECH. DEGREE EXAMINATIONS, DEC 2019**

Third Semester

**CH18304 – CHEMICAL PROCESS INDUSTRIES I***(Chemical Engineering)***(Regulation 2018)****Time: Three Hours****Maximum : 100 Marks**Answer **ALL** questions**PART A - (10 X 2 = 20 Marks)**

	<b>CO</b>	<b>RBT</b>
1. Name three industrial chemicals of chlor alkali industry.	<b>3</b>	<b>U</b>
2. Write the formulae for bleaching powder and how it is made?	<b>2</b>	<b>R</b>
3. Classify the methods of production of sulphur.	<b>3</b>	<b>R</b>
4. Why is vanadium pentoxide used as a catalyst in preference to Platinum in the manufacture of sulphuric acid?	<b>2</b>	<b>AP</b>
5. Give the Constituents of Hydraulic hydrated lime.	<b>2</b>	<b>R</b>
6. Classify the ceramics products based on degree of vitrification.	<b>1</b>	<b>AP</b>
7. Write the chemical reaction involved in production of NH <sub>3</sub> .	<b>3</b>	<b>U</b>
8. What are the end uses of phosphoric acid?	<b>2</b>	<b>R</b>
9. Write a note on the different grades of Urea.	<b>1</b>	<b>U</b>
10. Mention the significances of fumigants.	<b>1</b>	<b>R</b>

**PART B - (5 X16 = 80 Marks)**

11. (a) With the help of a neat flow diagram explain the manufacture of Soda Ash by Solvay process. **(16)** **3** **U**

**(OR)**

- (b) (i) Describe the electrolysis of brine by electrochemical aspects. **(8)** **2** **U**
- (ii) Explain the solution mining of sodium chloride from underground deposits. **(8)** **2** **U**

12. (a) (i) Describe the manufacture of Sulphur by Finnish process. (8) 2 AP  
(ii) What are the major engineering problems encountered in finish process. (8) 1 AP

(OR)

- (b) Write in detail the making of Sodium Sulphate and sodium thiosulphate, their characteristics and uses. (16) 2 AP
13. (a) (i) Explain Portland cement production with a neat flow diagram? (8) 3 U  
(ii) Enumerate the types and properties of cement. (8) 2 U

(OR)

- (b) Classify the methods of shaping and forming of articles from glass and with neat diagram. (16) 4 U
14. (a) Describe the manufacture of Phosphoric acid by wet process using  $H_2SO_4$  with a neat sketch. (16) 3 U

(OR)

- (b) (i) With a neat flow sheet describe the production of  $HNO_3$  by high pressure (dual) process. (8) 3 U  
(ii) Mention the various end uses of nitric acid. (8) 4 U
15. (a) Highlight the mono superphosphate and triple super phosphate synthesis process with a neat sketch. (16) 2 AP

(OR)

- (b) Discuss the various types of Biofertilizers and also the significances of each type in detail. (16) 1 AP