

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Summer 2017 - 18 Examination

Semester:3
Subject Code: 03103204
Subject Name: Chemical Process Industries

Date:13/06/2018
Time: 2.00 pm to 4.30 pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions**(15)**

1. Solution containing more than 86% HNO₃ is referred as-----.
2. $\text{CaCO}_3 + 2\text{NaCl} \longrightarrow \text{-----} + \text{CaCl}_2$
3. ----- are produced by the electrolysis of brine
4. White liquor is used in the production of Phosphoric acid. (True/False)
5. What is the function of Pulverizer?
6. Which are the two major types of ammonium phosphate?
7. Which Process is used for the manufacturing of oxygen and nitrogen?
8. Why we crushed Phosphate rock in Plug mill?
9. What is function of Scrubber?
10. Lye and _____ are the name of sodium hydroxide
11. Full form of NPK?
12. Give the raw material for the manufacturing of ammonia
13. Which reaction involved in the manufacturing of soap
14. Is Solvay process used for the manufacturing of Sodium carbonate? **(Yes/No)**
15. Define unit operation

Q.2 Answer the following questions. (Attempt any three)**(15)**

- A) Which are the different process used for the manufacturing of nitric acid? Give the reaction and raw material of any one process.
- B) Give the name of raw material and reaction of contact process.
- C) Draw the neat sketch of i) Diaphragm cell ii) Mercury cell.
- D) By which chemicals Phosphoric acid produced. Give the reaction of the same.

Q.3 A) Which process is used for Sulphur mining? Briefly describe with neat sketch.**(07)**

- B) Explain manufacturing of nitric acid with neat flow sheet.

(08)**OR**

- B) Write a note on paper making process.

(08)**Q.4 A) List the various industrial operations with its function and sketch.****(07)****OR**

- A) Describe manufacturing of Soap with reaction.

(07)

- B) Give the advantage and disadvantage of membrane and mercury process.

(08)