

B.TECH. SEM -IV (CHEMICAL) 2014 COURSE (CBCS) :
SUMMER - 2018
SUBJECT : CHEMICAL PROCESS INDUSTRIES

Day : **Tuesday**
Date : **12/06/2018**

S-2018-2274

Time : **10.00 AM TO 01.00 PM**
Max. Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labeled diagrams **WHEREVER** necessary.
- 4) Assume suitable data if necessary.

- Q.1** Draw the schematic for the following applications and give its application. [10]
- | | | |
|---------------------------|--------------|-------------|
| a) Distillation | c) Thickener | e) Scrubber |
| b) Plate and frame filter | d) Ball mill | |

OR

Differentiate between unit operation and unit process. Explain it with suitable examples.

- Q.2** Draw the neat flow diagram for electrolytic process for the production of caustic and chlorine. Also give its applications in detail. [10]

OR

Describe the construction of diaphragm cell and mercury cell. Also explain its working.

- Q.3** Describe the manufacture of sulfuric acid using DCDA process. [10]

OR

Describe various processes used for the production of ammonia.

- Q.4** Explain the kinetics and mechanism for nitration. [10]

OR

Describe the manufacturing of any one nitrating agent and also list its applications.

- Q.5** Write short notes on: [10]

- a) Commercial production of sulfonating agent
- b) Uses of Alkyl benzene sulfonates

OR

Write short notes on:

- a) Frasch process
- b) Uses of sulfonating / sulfating agents

- Q.6** Draw the schematic for refinery operations and explain refinery operation in brief. [10]

OR

What do you mean by upstream operations and downstream operations?

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