

Fifth Semester B. Tech. (Chemical Engineering) Examination

CHEMICAL ENGINEERING PROCESS - I

Paper – 5 CH 02

(USC – 10154)

P. Pages : 3

Time : Three Hours]

[Max. Marks : 80

- Note :** (1) Separate answer book must be used for each section in the subject Geology, Engineering material of civil branch and Separate answer book must be used for Section A and B in Pharmacy and Cosmetic Tech.
- (2) All questions carry equal marks.
- (3) Answer **Three** questions from Section A and **Three** questions from Section B.
- (4) Due credit will be given to neatness and adequate dimensions.
- (5) Diagrams and Chemicals equations should be given wherever necessary.
- (6) Retain the construction lines.
- (7) Illustrate your answer wherever necessary with the help of neat sketches.
- (8) Discuss the reaction, mechanism wherever necessary.
- (9) Use pen of Blue/Black ink/refill only for writing the answer book.

SECTION A

1. (a) Explain the starch manufacturing process. 7
- (b) Discuss the manufacturing process of detergent with the help of flowsheet. 7

OR

2. Explain the unit operations and unit processes in sugar industry in detail. 14
3. (a) Explain in detail, the overall factors to be considered in lime manufacturing process. 6
- (b) Discuss the process of chemical recovery from sulphate pulp digestion liquor in detail. 7

OR

4. (a) With the help of neat Labelled diagram, explain the manufacturing of gypsum. 7
(b) Explain the chemical and semi-chemical method of pulp production from wood as a raw material. 6
5. (a) Explain in detail the steam reforming process for synthesis gas. 7
(b) Discuss the uses of oxygen and hydrogen in various applications. 6

OR

6. (a) Explain the manufacturing process of carbon-dioxide gas. 6
(b) Explain the industrial preparation of coke oven gas with its industrial applications. 7

SECTION B

7. With neat flow sheet explain the manufacturing of H_2SO_4 acid and its application. 14

OR

8. Explain the manufacturing process of urea from ammonia carbamate with the help of flow sheet. 14
9. (a) Explain manufacturing of Tetra-Ethyl lead from an alkyl Grignard-containing electrolyte. 7
(b) Explain the fundamental concept of electrolytic process. 6

OR

10. With neat flowsheet explain the electrolytic process for chlorine-caustic soda production. 13

11. (a) Explain the production of TiO_2 by sulphur process. 7
(b) Give the industrial application of lithium and titanium. 6

OR

12. (a) Draw neat labelled diagram of electrolytic cell with cell notation for aluminium manufacturing. 5
(b) Describe in detail the electro-chemical sources of energy and its storage. 8



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