

Total No. of Questions : 10]

SEAT No. :

P3648

[Total No. of Pages : 2

[5560] - 604

T. E. (Chemical)

CHEMICAL PROCESS TECHNOLOGY

(2015 Pattern) (Semester - I)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Neat diagrams must be drawn wherever necessary.*
- 2) *Figures to the right indicate full marks.*
- 3) *Use of logarithmic table, slide rule mollier charts, electronic calculator and steam table is allowed.*
- 4) *Assume suitable data, if necessary.*

Q1) Draw and explain the production of Soda Ash by Solvay process. **[10]**

OR

Q2) Describe production of urea by ammonium carbamate decomposition process and explain in brief, the major engineering problems associated with it. **[10]**

Q3) Draw and explain the production of triple super phosphate with neat diagram. Also explain its importance. **[10]**

OR

Q4) Draw and explain the production of denatured alcohol with suitable diagram. **[10]**

- Q5)** a) Describe the process for manufacturing of Portland cement. Write the metal oxides composition necessary in the Portland cement. **[8]**
b) Draw and explain coke oven construction and applications. **[8]**

OR

Q6) Draw and briefly write about the following refinery operations with neat diagrams. (Any Two) **[16]**

- a) Isomerization
- b) Polymerization
- c) Cracking
- d) Alkylation

P.T.O.

- Q7)** a) Illustrate the vegetable oil hydrogenation process with suitable diagram. [8]
b) Describe carbonization of coal and the effect of temperature on the products obtained. [8]

OR

Q8) Write a note on the following with suitable diagram (Any Two) [16]

- a) Producer gas
- b) Natural gas
- c) Fuel Cell with application
- d) Water gas

- Q9)** a) With a neat flow diagram, describe the production of chloromethanes by direct chlorination of methane. Also explain the importance of mole ratio to increase the production of CCl_4 . [10]
b) Draw and explain the production of Cumene (Isopropyl Benzene) via propylene alkylation of benzene. [8]

OR

- Q10)** a) Describe the importance and production of ethylene dichloride (EDC) with suitable diagram. [10]
b) With a suitable diagram, explain the production of phenol by cumene peroxidation-hydrolysis route. [8]

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