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Total number of printed pages – 2

B. Tech
PCCH 4202

Third Semester Regular Examination – 2014

CHEMICAL PROCESS TECHNOLOGY

BRANCH : CHEM

QUESTION CODE : H 407

Full Marks – 70

Time : 3 Hours

Answer Question No. 1 which is compulsory and any five from the rest.
The figures in the right-hand margin indicate marks.



1. Answer the following questions : 2 × 10
- (a) Why the study of chlor-alkali industry is worthy ?
 - (b) Mention the advantages and disadvantages of mercury process.
 - (c) What are the advantages and disadvantages of V_2O_5 catalyst ?
 - (d) Discuss the effect of number of double bonds in the fatty acids on the melting point and reactivity to oxygen.
 - (e) What are anionic detergents ?
 - (f) Mention the properties and consumption pattern of glycerin.
 - (g) How the inversion of sugar can be minimized ?
 - (h) In alcohol industry, what do you understand by slops ? What is its use ?
 - (i) What is the effect of chlorine type oxidizing agents on bleaching of pulp ?
 - (j) What are the main uses of phenol-formaldehyde ?
2. Critically compare between the Solvay Process and Modified Solvay Process for the manufacture of Soda Ash. 10

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3. Describe in detail the Electrolytic Process for chlorine-caustic soda production with a neat flow sheet. Also discuss the major engineering problems. 10
4. (a) Discuss in detail the major engineering problems encountered during hydrogenation of vegetable oils. 6
- (b) Write briefly about pigments and extenders. 4
5. Critically compare between Sulfate and Sulfite pulping processes. 10
6. Discuss the production of ethyl alcohol by fermentation with a neat flow diagram. Also discuss the major engineering problems. 10
7. (a) Classify synthetic fibers. 2
- (b) With the basic chemistry discuss in brief the method of production of Nylon-6 and Nylon-6,6. 4+4
8. Write short notes on any two of the following : 5 × 2
- (a) Hydrogenation of oils
- (b) Bleaching of pulp
- (c) Dialdehyde starch
- (d) HDPE.

