B.Tech. Seventh Semester (Food, Pulp & Paper, Oil & Paint & Petro Technology) (CGS)

11067 : Special Technology - V : Petrochemical Technology - V : 7 PC 05

P. Pages : 2 | **AU - 2955**

Time : Three Hours | Max. Marks : 80

Notes :
1. Due credit will be given to neatness and adequate dimensions.
2. Assume suitable data wherever necessary.
3. Diagrams and chemical equations should be given wherever necessary.
4. Illustrate your answer necessary with the help of neat sketches.
5. Discuss the reaction, mechanism wherever necessary.
6. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION – A

1. Summarise the various processes with solvent used for removal of chemical impurities from natural gas and petroleum fractions in brief. **14**

OR

2. Where the low temperature fractionation technique is adopted? What are the various techniques available for low temperature fractionation? Discuss any one with suitable example. **14**

3. Discuss and draw the flow scheme for production of ethylene from petroleum gases. High light the function of each unit. **13**

OR

4. What are the various techniques adopted for purification of effluent stream from naphtha cracker unit? Discuss it. **13**

5. Write the basic principle involved in Wulff's process and BASF process for acetylene synthesis. Also discuss both the processes in brief. **13**

OR

6. p) Why acetylene is loosing ground as an important feedstock for petrochemical industry? Discuss in brief with suitable examples. **6**

q) How petroleum base route is classified for acetylene synthesis? Give the chemistry involved with petroleum and non petroleum route for acetylene synthesis. **4**

r) What is in situ cracking? Discuss its importance in VCM synthesis. **3**

SECTION – B

7. Describe and draw the steam reforming process in detail when feed is naphtha. Write the specific utility of each unit in brief with reaction involved. **14**

OR

8. Discuss the necessity of secondary reformer in steam reforming? What is your recommendation for secondary reformer when SNG is the main product. Also give complete chemistry of steam reforming process. **14**

9. Name the various routes for synthesis of isoprene. Which route is commercially adopted? Discuss this route in brief. **13**

OR

10. Describe the Udex process in brief with solvent used for aromatic separation from reformate. **13**

11. What are the various techniques for butadiene synthesis? Compare all these technique and discuss any one in brief. **13**

OR

12. Discuss the uses of following. **13**
    i) Methane and methanol:
    ii) Ethane and ethylene;
    iii) Propane and propylene,
    iv) Butadiene and isoprene,
    v) Synthesis gas and hydrogen.

****