

**R09****Code No: C5108****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****M.Tech I Semester Examinations March/April-2011****PETROLEUM REFINERY ENGINEERING****(CHEMICAL ENGINEERING)****Time: 3hours****Max.Marks:60**

**Answer any five questions**  
**All questions carry equal marks**

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1. a) Discuss the Scenario of Petrochemicals in detail.  
b) Discuss briefly about Characterization of complex feed stocks. [12]
2. a) Write different techniques involved in Thermal Cracking briefly.  
b) Discuss briefly about Steam Reforming. [12]
3. a) Explain Thermal cracking operation to produce light olefins from various feed stocks.  
b) How Ethanol dehydration process is carried out? Explain with a neat flow diagram. [12]
4. a) Discuss the effect of various parameters like temperature, residence time, HCCP, C/H ration on yields of important products from various feed stocks during Thermal cracking operation.  
b) Explain briefly R-K theory to predict product yields from various feed stocks during thermal cracking. [12]
5. With a neat flow diagram explain the process of Thermal Cracking operation. [12]
6. a) Explain briefly the Coke formation during cracking operations  
b) Discuss briefly the simple models of Coke formation during thermal cracking reactions. [12]
7. a) What is Pyrolysis? Explain in detail the structures of deposited coke during Pyrolysis operation.  
b) Discuss briefly various ways to inhibit coke formation. [12]
8. a) Suggest newer materials of construction pertaining to petrochemical industry problems.  
b) Discuss industrial process of hydro cracking and reforming operations briefly. [12]

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