



(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 151657**

Roll No.

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## B.Tech

(SEM. VI) THEORY EXAMINATION 2014-15

**PROCESS FLOW SHEET SIMULATION**

Time : 2 Hours]

[Total Marks : 50

Note: Attempt **all** the questions.

- 1 Attempt any **four** parts of the following: **3x4=12**
- (a) Give the criterion for the selection of simulation software. Explain with suitable example.
  - (b) Describe the term 'modules and components' with a suitable example in a process simulation package.
  - (c) Discuss advantages and limitation of a simulation package.
  - (d) Write short note on 'Canonical modeling'.
  - (e) What do you mean by flow sheet presentation? Explain tearing with the help of suitable examples.
  - (f) What are the procedures for the process modeling.

- 2 Attempt any **two** parts of the followings: **6x2=12**
- (a) Compare the sequential, modular and equation oriented approach of simulation.
  - (b) Describe the procedure for the preparation of thermo-physical properties banks. Explain with suitable example.
  - (c) What do you mean by simulation packages. Also discuss the features of 'ASPEN PLUS' and 'HYSIS'.
- 3 Attempt any **two** parts of the followings: **7x2=14**
- (a) Discuss the advantages and disadvantages of modular based flow sheeting.
  - (b) Explain degree of freedom in a flow sheet. Give the detail steps of the flow sheet simulation of Vinyl Chloride Monomer (VCM).
  - (c) Give the detail procedure for the design and simulation of sulphuric acid plant.
- 4 Write short notes on any four parts of the following: **3x4=12**
- (a) Computer aided flow sheeting
  - (b) Steady state and Dynamic simulation
  - (c) UniSim and TK-Solver
  - (d) Differential algebraic equation system
  - (e) ICARUS
  - (f) Molecular modeling.
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