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

Paper ID: 151663

1.

Roll No.

B.TECH.

Theory Examination (Semester-VI) 2015-16 PROCESS FLOW SHEET SIMULATION

Time: 3 Hours Max. Marks: 100

Note: Attempt any five questions:

- - Attempt the followings: $(4 \times 5 = 20)$
 - Discuss background and history of process simulation. (a)
 - Define the terms modules and components with a (b) suitable example in a process simulation package.
 - Write a short note on manual flow sheet calculations. (c)
 - Define structure and functionality of commercial (d) simulation tools.
- $(10 \times 2 = 20)$ 2. Attempt the following:
 - (a) Discuss canonical modeling concept in detail.

P.T.O.

(b) Discuss degree of freedom in process flow sheet Compare the sequential, modular and equation oriented approach of simulation.

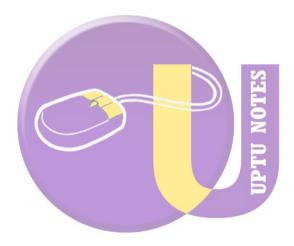
3. Attempt the following: $(10\times2=20)$

- (a) Discuss various simulation packages in detail.
- (b) Give the detail procedure for the design and simulation of Nitric acid plant.

4. Attempt the following: $(10\times2=20)$

- (a) Give the detail steps of the flow sheet simulation of flashing of light hydrocarbon.
- (b) Explain method of structuring in complex chemical process.
- 5. Write short notes on the following: $(4\times5=20)$
 - (a) Molecular Modeling
 - (b) ASPEN PLUS
 - (c) Synthesis of Azeotropic separation systems
 - (d) Plant Automation
- 6. Write short notes on the following: $(4\times5=20)$
 - (a) ICARUS

- (b) Flowsheet Presentation
- (c) What do you mean by partitioning and tearing of a flowsheet.
- (d) What are the different approaches to process simulation?



(3) _______P.T.O.