

Total No. of Questions :6]

SEAT No. :

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P169 **BE/Insem./APR-220**

B.E. (Chemical)

409349 : PROCESS MODELING & SIMULATION

(2012-Pattern) (Semester-II)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) Answer **Q1** or 2, **Q3** or 4, **Q5** or 6.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Use of logarithmic tables slide rule, Mollier charts, electronic pocket

Q1) a) Write the basic fundamental laws for process modeling and simulation. **[6]**

b) What are limitations of mathematical models? Give examples. **[4]**

OR

Q2) Define modeling and explain the types of model and give the scope and applications of modeling. **[10]**

Q3) Derive the model equation of flow through packed bed column. **[10]**

OR

Q4) Derive the model equation for laminar flow in narrow slit. **[10]**

Q5) Develop the modeling equation for the Shell and tube Heat Exchanger. Assume the necessary data and notations. **[10]**

OR

Q6) Develop the mathematical model for single effect evaporator. **[10]**

