Total No. of Questions : 10]

SEAT No. :

P3208

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B.E. (Chemical)

PROCESS MODELING & SIMULATION

(2012 Pattern)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) *Answer all questions.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Assume suitable data, if necessary.*
4) *Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables is permitted.*

Q1) Define the equations and notations for Dalton's law, Raoult's law and relative volatility of an ideal vapour-liquid equilibrium system. **[10]**

OR

Q2) Explain Flow of Film on the outside of circular tube. **[10]**

Q3) Derive a model for cooling tower. **[10]**

OR

Q4) Derive a model for agitated vessel. **[10]**

Q5) Explain the steady state model and thermal equilibrium model for LPG vaporizer with a neat diagram. **[16]**

OR

Q6) Derive the equations describing the Batch distillation column with constant hold up. **[16]**

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Q7) Derive the model equations for Bubble column reactor. **[18]**

OR

Q8) Develop a mathematical model for Fluidized bed reactor. **[18]**

Q9) What are the types of simulations? Explain the difference in it. **[16]**

OR

Q10) Explain ASPEN in detail. **[16]**

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