Code No: R07A10801 **R07** **Set No. 2**

I B.Tech Examinations,June 2011
INTRODUCTION TO CHEMICAL ENGINEERING
Chemical Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Write short notes on reciprocating.
   (b) What is a multistage pump? Explain.
   (c) Give a brief account of rotary pumps. [6+4+6]
2. (a) Write the equation for a rate of heat transfer by conduction at steady state and explain the terms.
   (b) Define thermal conductance and thermal resistance.
   (c) Explain heat conduction through resistance in parallel with a neat diagram. [4+4+8]
3. Discuss briefly:
   (a) Flotation
   (b) Filtration. [2×8=16]
4. (a) Define equilibrium moisture content.
   (b) Differentiate between Funicular and penduler state.
   (c) Explain drum dryer. [4+6+6]
5. Discuss in details the following:
   (a) Equilibrium distillation
   (b) Differential distillation. [8+8]
6. Write short notes on:
   (a) Mixer - settler
   (b) Applications of liquid-liquid extraction
   (c) Fractional extraction
   (d) Differential liquid-liquid extractors. [4×4]
7. (a) Explain the inter phase mass transfer and mass transfer coefficient.
   (b) Describe the overall mass transfer coefficient in terms of individual film coefficient. [8+8]
8. (a) When a gas in said to be saturated and partially saturated with vapor. When does condensation of vapor take place.

(b) Define relative saturation and percentage saturation.

(c) Obtain relation between Y_r and Y_p. When are both equal? [3+8+5]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: R07A10801 **R07** **Set No. 4**

I B.Tech Examinations,June 2011
INTRODUCTION TO CHEMICAL ENGINEERING
Chemical Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. Write short notes on:
   (a) Mixer - settler
   (b) Applications of liquid-liquid extraction
   (c) Fractional extraction
   (d) Differential liquid-liquid extractors. [4×4]
2. (a) When a gas in said to be saturated and partially saturated with vapor. When does condensation of vapor take place.
   (b) Define relative saturation and percentage saturation.
   (c) Obtain relation between Y_r and Y_p. When are both equal? [3+8+5]
3. (a) Write short notes on reciprocating.
   (b) What is a multistage pump? Explain.
   (c) Give a brief account of rotary pumps. [6+4+6]
4. (a) Define equilibrium moisture content.
   (b) Differentiate between Funicular and penduler state.
   (c) Explain drum dryer. [4+6+6]
5. (a) Explain the inter phase mass transfer and mass transfer coefficient.
   (b) Describe the overall mass transfer coefficient in terms of individual film coefficient. [8+8]
6. (a) Write the equation for a rate of heat transfer by conduction at steady state and explain the terms.
   (b) Define thermal conductance and thermal resistance.
   (c) Explain heat conduction through resistance in parallel with a neat diagram. [4+4+8]
7. Discuss briefly:
   (a) Flotation
   (b) Filtration. [2×8=16]
8. Discuss in details the following:

(a) Equilibrium distillation

(b) Differential distillation. [8+8]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: R07A10801 **R07** **Set No. 1**

I B.Tech Examinations,June 2011
INTRODUCTION TO CHEMICAL ENGINEERING
Chemical Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. Write short notes on:
   (a) Mixer - settler
   (b) Applications of liquid-liquid extraction
   (c) Fractional extraction
   (d) Differential liquid-liquid extractors. [4×4]
2. (a) Write the equation for a rate of heat transfer by conduction at steady state and explain the terms.
   (b) Define thermal conductance and thermal resistance.
   (c) Explain heat conduction through resistance in parallel with a neat diagram. [4+4+8]
3. (a) Explain the inter phase mass transfer and mass transfer coefficient.
   (b) Describe the overall mass transfer coefficient in terms of individual film coefficient. [8+8]
4. Discuss in details the following:
   (a) Equilibrium distillation
   (b) Differential distillation. [8+8]
5. (a) Define equilibrium moisture content.
   (b) Differentiate between Funicular and penduler state.
   (c) Explain drum dryer. [4+6+6]
6. Discuss briefly:
   (a) Flotation
   (b) Filtration. [2×8=16]
7. (a) When a gas in said to be saturated and partially saturated with vapor. When does condensation of vapor take place.
   (b) Define relative saturation and percentage saturation.
   (c) Obtain relation between Y_r and Y_p. When are both equal? [3+8+5]
8. (a) Write short notes on reciprocating.

(b) What is a multistage pump? Explain.

(c) Give a brief account of rotary pumps. [6+4+6]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: R07A10801 **R07** **Set No. 3**

I B.Tech Examinations,June 2011
INTRODUCTION TO CHEMICAL ENGINEERING
Chemical Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. Discuss briefly:
   (a) Flotation
   (b) Filtration. [2×8=16]
2. (a) Write short notes on reciprocating.
   (b) What is a multistage pump? Explain.
   (c) Give a brief account of rotary pumps. [6+4+6]
3. (a) When a gas in said to be saturated and partially saturated with vapor. When does condensation of vapor take place.
   (b) Define relative saturation and percentage saturation.
   (c) Obtain relation between Y_r and Y_p. When are both equal? [3+8+5]
4. (a) Explain the inter phase mass transfer and mass transfer coefficient.
   (b) Describe the overall mass transfer coefficient in terms of individual film coefficient. [8+8]
5. Discuss in details the following:
   (a) Equilibrium distillation
   (b) Differential distillation. [8+8]
6. Write short notes on:
   (a) Mixer - settler
   (b) Applications of liquid-liquid extraction
   (c) Fractional extraction
   (d) Differential liquid-liquid extractors. [4×4]
7. (a) Write the equation for a rate of heat transfer by conduction at steady state and explain the terms.
   (b) Define thermal conductance and thermal resistance.
   (c) Explain heat conduction through resistance in parallel with a neat diagram. [4+4+8]
8. (a) Define equilibrium moisture content.

(b) Differentiate between Funicular and penduler state.

(c) Explain drum dryer. [4+6+6]

⋆ ⋆ ⋆ ⋆ ⋆