P48/HSC270/EE/20160524

Time : 3 Hours **Marks : 80**

Instruction :

1. All Questions are Compulsory.
2. Each Sub-question carry 5 marks.
3. Each Sub-question should be answered between 75 to 100 words. Write every questions answer on separate page.
4. Question paper of 80 Marks, it will be converted in to your programme structure marks.

1. Solve any **four** sub-questions.

   a) Explain the Celsius Temperature Scale (°C). 5

   b) Give Comparison of Comparison of Distillation and Extraction. 5

   c) What is Fouling Factor and explain Parallel flow heat exchanger, counter current flow heat exchanger and Cross flow heat exchanger. 5

   d) What is Conduction state Fourier's Law and state thermal conductivity. 5

   e) What is meant by Mass Transfer and explain separation technique i.e. liquid extraction. 5

2. Solve any **four** sub-questions.

   a) Explain Selection criteria for solvent used in gas absorption. 5

   b) Explain the role of diffusion in Mass Transfer. 5

   c) Write note on crystallization. 5

   d) What is liquid-liquid Extraction and state its application. 5

   e) Give Comparison of gas absorption and distillation. 5

3. Solve any **four** sub-questions.

   a) What is drying and give the reason why drying is require to be done. 5

   b) State the advantages and disadvantages of packed column. 5

   c) Write briefly on mechanically agitated vessels used for gas absorption. 5

d) State Kirchhoff's Law and Stefan-Boltzmann Law. 5

e) State the factors on which the rate of drying depends and explain in brief. 5

4. Solve any **four** sub-questions.

a) What is distillation and explain simple and batch distillation. 5

b) Draw and describe U-tube manometer. 5

c) Give the detailed classification of level measurement. 5

d) Write in brief on classification of the dryers. 5

e) Explain in detail mode of Heat Transfer. 5

✦✦✦✦✦✦✦