Q.27 Write the importance of Seider and Tate's equation.

Q.28 What is Arithmetic mean area?

Q.29 Differentiate natural and forced convection.

Q.30 Define individual heat transfer coefficient?

Q.31 What is radiant heat transfer coefficient?

Q.32 Explain with neat sketch double pipe heat exchanger.

Q.33 List various method of feeding of black liquor in evaporators.

Q.34 Define critical thickness of insulation of spheres.

Q.35 Differentiate parallel & counter flow.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Calculate Reynold's number with the following data D=20cm, V=5m/sec, p(Density)= 14500kg/m^3, μ= 0.03755kg/msec

Q.37 Explain in detail exchange of energy between two parallel planes of different emissivity.

Q.38 Write a short note on any two of the following

a) Fouling factor

b) Stefan Boltzman law

c) Scale formulation

d) Common insulators

4th Sem / P & P, Chem Engg. (Spl. Paint Tech.), Chem Engg. (Spl. Polymer Engg.)
Subject:- Heat Transfer

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 What is the driving force for heat transfer?

a) Temperature difference

b) Density difference

c) Mass difference

d) Solid difference

Q.2 Heat flux is equal to

a) w/ft k b) w/ m k

c) Cal / m k d) J / sec k

Q.3 Heat flow mechanism through solid is known as

a) Radiation b) Convection

c) Conduction d) None

Q.4 The term LMTD is used in ____

a) Conduction b) Convection

c) Radiation d) Heat exchanging

Q.5 Vertical tube evaporator is commonly used for handling solution that tend to foam

a) Short b) Film

c) Long d) None

Q.6 What is the absorptivity for perfect black body ?

a) 1 b) 2

c) 3 d) 4

Q.7 What is the economy of single effect evaporator?

a) Less then 1 b) Less then 2

c) Less then 3 d) Less then 4

Q.8 Which substances have maximum thermal conductivity

a) Silver b) Gold

c) Aluminum d) Diamond

Q.9 What is unit of Q in Q = - KADT?

a) Wm2 b) Wm

c) Wm-1 d) none

Q.10 What is the symbol of overall heat transfer coefficient ?

a) H b) A

c) U d) None

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Write any one importance of thermal conductivity in heat transfer.

Q.12 What is log mean area?

Q.13 Write the driving force in heat transfer.

Q.14 Where Rayleigh's method is applicable.

Q.15 Name anyone type of fin.

Q.16 Mention any one objective of evaporator.

Q.17 Where long tube evaporator is preferred?

Q.18 What is natural convection?

Q.19 Expand LMTD.

Q.20 What is temperature gradient?

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Explain Fourier law of heat conduction.

Q.22 Write a note on Pi Theorem.

Q.23 Describe reflection.

Q.24 Draw neat sketch of single effect evaporator.

Q.25 Define finned tube heat exchanger.

Q.26 List various types of evaporators.