Q.25 Describe reflection.

Q.26 What do you mean by roughness of surface?

Q.27 List various method of feeding of black liquor in evaporators.

Q.28 Explain critical thickness of insulation for spheres.

Q.29 Draw a diagram of open pan evaporators.

Q.30 Explain fourier law of heat conduction.

Q.31 What is kirchoff's law?

Q.32 State Stefan bolzman's law.

Q.33 What is radiation sheild?

Q.34 What is the radiant heat transfer coefficient?

Q.35 Differentiate parallel and counter current flow.

SECTION-D

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

Q.36 Derive the expression of heat transfer through cylinder.

Q.37 Explain exchange of energy between 2 parallel planes of different emissivity.

Q.38 Calculate reynold's number with the following data:

D = 20 cm, V =5m/sec, S = M500 Kg/m^3, μ=0.0375 kg/m sec

Roll No. .....

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 b) Density

c) Mass d) Size

Q.2 Heat flow mechanism through solid is known as _____

a) Conduction b) Convention

c) Radiation d) None

Q.3 _____ Tube vertical evaporator is commonly used for handling solutions that tend to foam.

a) Long b) Short

c) Film d) None

Q.4 What is the absorptivity for perfectly black body?

a) 1 b) 2

c) 3 d) 4

Q.5 What is unit of qmq = - KAT?

a) wm^{-1} b) wm

c) wm^{2} d) None

Q.6 Choose formula of heat flux.

a) q = A/Q b) q = Q x A

c) $q = A^{Q}$ d) q = Q/A

Q.7 Choose type of condenser.

a) Contact b) Tube

c) Pitch d) Lanka shire

Q.8 Unit of LMTD

a) Centimeter b) Degree centigrade

c) Decibel d) Joule

Q.9 Thermal conductivity is maximum for which substance

a) Silver b) Ice

c) Aluminum d) Diamond

Q.10 Which type of flow give higher heat transfer?

a) Parallel flow b) Counter flow

c) Mix flow d) None

SECTION-B

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

Q.11 Name any 2 mounting of condenser.

Q.12 Mention any 2 types of evaporator tubes.

Q.13 Write any 1 use of furnace.

Q.14 Mention 1 use of baffles.

Q.15 Write any 1 reason of insulation.

Q.16 Write any 1 importance of thermal conductivity in heat transfer.

Q.17 Does heat transfer varies with time. Give reason in 1 line.

Q.18 Expand LMTD.

Q.19 Write 1 example of conduction

Q.20 Mention any 1 purpose of use of fins.

SECTION-C

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

Q.21 What is entrainment?

Q.22 Write the importance of seider and Tate's equation.

Q.23 Explain radiative heat exchange between black bodies.

Q.24 Write any 5 factors affecting connective heat transfer.