

- Q.24 Mention any 5 points for heat loss from pipe.
  - Q.25 Define critical thickness of insulation for spheres.
  - Q.26 What is absorption and emission in a gaseous medium?
  - Q.27 Define LMTD with formula.
  - Q.28 Write a note on pi theorem.
  - Q.29 Define perfect black body.
  - Q.30 Draw a neat sketch of single effect evaporator.
  - Q.31 Explain solar radiation.
  - Q.32 Explain with neat sketch double pipe heat exchanger.
  - Q.33 Explain geometric mean area.
  - Q.34 Mention any 5 difference between free and forced convection.
  - Q.35 Define individual heat transfer coefficient.

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4th Sem.

**Branch : P & P Chem. Engg. (Spl. Paint Tech) Chem  
Engg. (Spl. Polymer Engg.)  
Subject : Heat Transfer**

**Time : 3 Hrs.**

M.M. : 100

## **Section-A**

**Note: Multiple Choice Questions. All Questions are compulsory. (10x1=10)**

- Q.1 Mark the matter with least value of thermal conductivity

  - a) Air
  - b) Water
  - c) Ash
  - d) Window Glass

Q.2 Multipass heat exchangers are used to obtain high \_\_\_\_\_.

  - a) Metal
  - b) Heat transfer
  - c) Liquid
  - d) None

Q.3 What is steam economy in case of a single operator system?

  - a) 1
  - b)  $>1$
  - c)  $<1$
  - d) 0.1

Q.4 What is the unit of rate of heat transfer?

  - a) Joule
  - b) Newton
  - c) Pascal
  - d) Watt

## **Section-D**

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

- Q.36 Explain in detail exchange of energy between 2 parallel planes of different emissivity.

Q.37 Explain in detail the various insulation material used in industry.

Q.38 Classify different types of evaporators. Explain any one with neat sketch.

Q.5 Select type of fin.

- a) Parallel
- b) Horizontal
- c) Longitudinal
- d) Lateral

Q.6 The boiling phenomenon is known to occur in how many forms?

- a) 1
- b) 2
- c) 3
- d) 4

Q.7 How many types of heat transfer?

- a) 1
- b) 2
- c) 3
- d) 4

Q.8 Select poorest conductor of heat.

- a) Gold
- b) Mercury
- c) Metal
- d) Lead

Q.9 What is the symbol of overall heat transfer coefficient

- a) H
- b) U
- c) A
- d) None

Q.10 Heat flow mechanism through solid is known as \_\_\_\_\_.

- a) Conduction
- b) Convection
- c) Radiation
- d) None

### Section-B

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

- Q.11 What is log mean area?
- Q.12 Mention the application of Rayleigh's method.
- Q.13 What is natural convection.
- Q.14 Mention any 1 way of reducing fouling.
- Q.15 Which evaporator is used for foamy liquid?
- Q.16 Give any 1 property of insulator.
- Q.17 Name the different types of flow arrangement in the exchanger.
- Q.18 Name any one type of insulating material.
- Q.19 What is the purpose of glass wool?
- Q.20 What is the geometric mean area?

### SECTION-C

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

- Q.21 Mention the relationship of heat transfer from composite bodies.
- Q.22 Mention any 5 properties required for good insulating materials.
- Q.23 Explain Wein's displacement law.