

- Q.25 How can you increase the fuel economy in the furnace?
 - Q.26 Define and discuss concept of heat transfer medium in brief?
 - Q.27 What are prerequisites of a good boiler?
 - Q.28 What are the advantages of multiple pass heat exchanger?
 - Q.29 Define and discuss concept overall heat transfer coefficient?
 - Q.30 What are the different ways to increase efficiency of heat transfer equipments?
 - Q.31 Discuss the concept of evaporator economy in brief?
 - Q.32 Explain the working of reverberatory furnace?
 - Q.33 What is difference between Single Effect Evaporator and Multiple Effect Evaporator?
 - Q.34 Discuss the forced circulation used in evaporators?
 - Q.35 What is difference between oil fired and coal fired furnace?

SECTION-D

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

- Q.36 Describe the construction, working and advantages of plate type heat exchanger in detail with the help of neat diagram?

Q.37 What do you understand by feed arrangement in the evaporator? Discuss the different types of feed arrangements with the help of neat diagrams in detail?

Q.38 Discuss the construction, working and application of cupola furnace in detail with the help of neat diagram?

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4th Sem / Chem., P & P
Subject:- Heat Transfer II

Time : 3Hrs.

M.M. : 100

SECTION-A

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

- Q.1 Dropwise condensation usually occurs on which surface?

a) glazed b) smooth
c) oily d) coated

Q.2 During boiling operation, the temperature becomes constant at which point?

a) Melting point b) Boiling point
c) Freezing point d) Condensation point

Q.3 For evaporators and condensers, for the given conditions the logarithmic mean temperature difference for parallel flow is?

a) equal to that for counter flow
b) greater than that for counter flow
c) lesser than that for counter flow
d) not determinable

Q.4 What should be the angle of arrangement for fins with respect to the direction of flow of the working fluid?

a) 0° b) 30°
c) 60° d) 90°

- Q.5** What is the net energy effect at the refractory in muffle furnace?
 a) zero b) positive
 c) negative d) cannot be predicted
- Q.6** Which of the following is not a type of heat exchanger?
 a) Double pipe b) Shell and tube
 c) Blake jaw d) Plate and frame
- Q.7** In a pulverized fuel fired large power boiler, heat transfer from the burning fuel to the walls of the furnace is?
 a) by conduction only
 b) by convection only
 c) by conduction & convection
 d) predominantly by radiation
- Q.8** Multiple pass heat exchangers are used to?
 a) increase pressure drop
 b) decrease pressure drop
 c) increase rate of heat transfer
 d) decrease vibrations
- Q.9** The usual method of feeding a multiple-effect evaporator is?
 a) forward feed b) backward feed
 c) parallel feed d) mixed feed
- Q.10** Scale, dirt, and other solid deposits form on one or both sides of the tubes in a heat exchanger in measured as a ?
 a) fouling factor b) cost factor
 c) energy factor d) material factor

SECTION-B

- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11** Name a process in which heat transfer is accompanied by phase change?
- Q.12** Define the condensation?
- Q.13** Write S.I. unit of heat transfer rate?
- Q.14** Write any one type of heat transfer equipment which brings about phase change in one of the process fluid?
- Q.15** Write name of any one heat transfer medium used in the chemical process industry for carrying out heat transfer operations?
- Q.16** Name the type of condensation occurring when steam condenses on oily surface?
- Q.17** What are fins?
- Q.18** Name the type of flow in the heat exchanger which gives highest value of LMTD?
- Q.19** Write name of any one type of evaporator used in chemical industry?
- Q.20** What are baffles?

SECTION-C

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21** Discuss the parallel flow arrangement for the heat exchanger with the help of neat diagram?
- Q.22** Discuss the concept of boiling in brief?
- Q.23** What is difference between evaporator and condenser?
- Q.24** Describe working of a double pipe heat exchanger with the help of a neat diagram in brief?