

- Q.25 Discuss about steam trap with diagram.
- Q.26 Explain pressure gauge with diagram.
- Q.27 Write about reverse osmosis.
- Q.28 Write about boiler corrosion.
- Q.29 Discuss about natural draft cooling tower with diagram.
- Q.30 Write the difference between dry saturated ste, and superheated steam.
- Q.31 Explain about mollier chart.
- Q.32 Discuss about steam ejectors.
- Q.33 Write about water softening methods-internal and external with examples.
- Q.34 Difference between scale and sludge with diagram.
- Q.35 Write about the properties and uses for refrigerant?

SECTION-D

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

- Q.36 Discuss the construction and working of Babcock boiler with advantages.
- Q.37 With diagram, explain the water treatment process with the help Ion exchange method.
- Q.38 Write short note on any three:-
1. Feed pump
 2. Zeolite process
 3. Selection of refrigerants
 4. Cold insulation

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**6th Sem / Chem, P & P, Chem. Engg. (Spl. Paint Tech)
Sub. : Process Plant Utilities / Proc. Utilities**

Time : 3Hrs. M.M. : 100

SECTION-A

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

- Q.1 The purest form of natural water is
- a) Rain water
 - b) Sea water
 - c) Underground water
 - d) River water
- Q.2 Scale formation in boiler feed water is due to
- a) Metallic deposition
 - b) Corrosion in boilers
 - c) Deposition of hard water
 - d) All the above
- Q.3 Name the types of refractories
- a) Fire clay
 - b) Silica based
 - c) High alumina
 - d) All of above
- Q.4 The soft, loose, and slimy precipitate formed within the boiler is called

- a) Scale b) Sludge
c) Flocculant d) Coagulant
- Q.5 Insulation types are _____.
a) Cold insulation
b) Low temperature insulation
c) Both A & B
d) None of above
- Q.6 Entropy (H-S) diagram for water and steam
a) Friction factor chart
b) Mollier chart
c) Stoichiometric chart
d) All of above
- Q.7 Cooling towers are _____.
a) Natural cooling tower
b) Forced draft cooling tower
c) Both A & B
d) None of above
- Q.8 What is the function of superheater in the boiler
a) Increase the temperature of steam
b) Reheat the steam
c) Superheat the feed water
d) To heat the fuel gas
- Q.9 Refrigerant used are _____.
a) Ammonia
b) Carbon dioxide
c) Both A & B
d) None of above
- Q.10 On boiling and filtering hard water, water sample contains
a) Temporary hardness
b) Permanent hardness
c) Both
d) None of above
- SECTION-B**
- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11 Define Hardness.
Q.12 What is steam?
Q.13 Write formula for lime soda.
Q.14 What is boiler?
Q.15 What is entropy?
Q.16 Write two properties of pump.
Q.17 Names the water boiler problems.
Q.18 Name any one property of insulation.
Q.19 What is wet stem?
Q.20 Write full form of EDTA.
- SECTION-C**
- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 Write about properties and uses of refractories.
Q.22 Classify insulation.
Q.23 Difference between calgon conditioning and carbonate conditioning?
Q.24 Explain the Zeolite process with diagram.