

- Q.27 Write about caustic embrittlement.
 Q.28 Write about important terms for steam.
 Q.29 discuss about ion exchange method for water treatment.
 Q.30 Write the difference between priming and forming with diagram.
 Q.31 Classify refrigerant with its characteristics and properties.
 Q.32 Discuss about H-S diagram of water and steam.
 Q.33 Write about insulation and its types.
 Q.34 Write about Zeolite process with diagram.
 Q.35 Write about the properties and uses for refractories?

Section-D

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

- Q.36 With diagram, explain the anyone type of cooling tower with advantages and disadvantages.
 Q.37 Discuss the construction and working of Cochran boiler with uses.
 Q.38 Write short note on any three:-
 1) Oil burner
 2) Failure of refractories
 3) Cold lime soda process
 4) Steam generation

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**6th Sem / Chemical Engg./Chemical Engg
Subject : Process Plant Utilities**

Time : 3 Hrs.

M.M. : 100

SECTION-A

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

- Q.1 Classification of refractories
 a) Acid b) Basis
 c) Neutral b) All of above
 Q.2 The permanent hardness of water cannot be removed by
 a) Lime soda process
 b) Permutit process
 c) Boiling
 d) Demineralization Process
 Q.3 Fuel types are
 a) Solid b) Liquid
 c) Gaseous d) All of above
 Q.4 Bucket and expansion are the type of
 a) Steam ejector b) Preheater
 c) Steam trap d) Economizer

- Q.5** Which of the following type of fuel does not contain ash?
 a) Coal b) Fuel oil
 c) Gaseous fuel d) Synthetic fuel
- Q.6** Hard water is not suitable for used in boilers because
 a) It has a higher boiling point
 b) It leads to scale formation in the boiler
 c) It consumes more fuel in steam generation
 d) The quality of steam generated is not good.
- Q.7** Insulation material used for lining combustion chamber
 a) Refractories b) Cooling tower
 c) Boiler d) All of above
- Q.8** The most commonly used unit to express hardness is
 a) Degree French b) Degree Clarke
 c) ppm d) Grains/gallon
- Q.9** BOD is
 a) Biological oxygen demand
 b) Biological over depth
 c) Both A & B
 d) None of above
- Q.10** The scales decrease the efficiency of boiler and chances of explosions are also there.
 a) True b) False

Section B

- Note:** Objective types Questions. All Questions are compulsory. (10x1=10)
- Q.11** Define insulation?
Q.12 What is demineralized water?
Q.13 Write full form of RO.
Q.14 What is dryness fraction?
Q.15 What is enthalpy?
Q.16 Write one examples of safety valve in daily life.
Q.17 Define saturated steam.
Q.18 What is preheater.
Q.19 Write one advantage of soft water.
Q.20 Name different processes of water softening.

Section-C

- Note:** Short answer type Questions. Attempt any twelve Questions out of fifteen Questions. (12x5=60)
- Q.21** Write about anyone water softening methods with examples.
Q.22 Write about boiler corrosion.
Q.23 Difference between colloidal conditioning and carbonate conditioning?
Q.24 Discuss about bucket type steam trap.
Q.25 Describe about formation of steam with diagram.
Q.26 Explain about sources of water and impurities of water.