

## Question Bank For Unit Test 2

**Subject –TEG (313310)      Program- ME4I**

### **Chapter3 Components of thermal power plant**

#### **Question for 2 Marks**

- 1) Define compounding and state the types of compounding
- 2). State the function of steam condenser
- 3) List the sources of air leakage into the condenser
- 4) List the applications of nozzle
- 5) Classify steam turbines
- 6) State the function of cooling towers

#### **Question for 4 Marks**

- 1)State the necessity of compounding of turbines
- 2) State and explain Dalton's Law of partial pressure
- 3) List sources of air leakages in condenser and state its effect on performance of condensers
- 4) Explain the surface condenser with neat sketch
- 5) Draw the sketch of natural cooling tower
- 6) Draw the sketch of induced draught cooling tower
- 7) .Explain regenerative feed heating stating its advantages
- 8) Differentiate between natural draught and forced draught cooling tower.

### **Chapter4 Heat Transfer and Heat Exchangers**

#### **Question for 2 Marks**

- 1) Define (i) Black body (ii) Grey body
- 2) Define (i) Absorptivity (ii) Reflectivity(iii)Emissivity
- 3) Define(i) Conduction(ii)Convection(iii) Radiation with examples
- 4) Classify the heat exchangers
- 5) State the applications of heat exchangers
- 6) Define thermal conductivity stating its unit
- 7) State Dalton's law of partial pressure
- 8) Draw the sketch of Shell and tube type heat exchanger

#### **Question for 4 Marks**

- 1) State Fourier's law of conduction and express it mathematically
- 2) State Stefan Boltzmann law of radiation and express it mathematically
- 3) State Newton's law of cooling and express it mathematically
- 4) Explain construction and working of shell & tube type heat exchangers
- 5) Draw a neat sketch of surface condenser and label it.
- 6) State the sources of air leakage in condenser
- 7) A typical application has wall made up of two different materials with inner layer 20 mm thick and outer layer 3 mm thick. The temperature difference across wall is 35°C. Thermal conductivity of inner layer material is 0.1 W/m K and outer layer material is 20 W/m K. How much heat will transfer per m<sup>2</sup> of the wall will take place across the wall.
- 8) A composite wall is formed of 2 cm copper plate, 3 mm layer of asbestos and 4.5 cm Fiber glass. The wall (From surface to surface) is subjected to temperature difference of 500°C. Considering heat flow in one direction, from surface to surface. Calculate heat flow per m<sup>2</sup> area of wall .
- 9) Suggest type of heat exchanger for following applications – i) Dairy Plant (Milk chilling plant) ii) Condenser of house hold refrigeration system. Justify your answer.

### **Chapter no.5 Introduction to IC engines & power cycles**

#### **Question for 2 Marks**

- 1) Represent following cycles on P-V and T-S diagram
  - (i) Carnot cycle (ii) Otto cycle (iii) Diesel cycle (iv) Dual cycles
- 2) List the different parts of IC engine
- 3) State the material and function of the following
  - (i) Cylinder head (ii) Cylinder block (iii) Piston
  - (iv) Connecting rod (v) Crank (vi) Piston rings
- 4) Define the following
  - (i) Bore (ii) Swept volume (ii) Clearance volume
  - (iv) Compression ratio (v) Stroke length

#### **Question for 4 Marks**

- 5) Classify I.C. Engines
- 6) Differentiate between two stroke & four stroke engines
- 7) Differentiate between S.I .Engine and C.I .engine

