



- Q4** A hall is to be maintained at 24 °C dry bulb temperature and 60 % relative humidity under the following conditions : **20**
- Outdoor conditions = 38 °C DBT and 28 °C WBT  
Sensible heat load in the room = 48.4 kW  
Latent heat load in the room = 13.6 kW  
Total infiltration air = 1200 m<sup>3</sup>/hr  
Apparatus dew point temperature = 10 °C  
Quantity of recirculated air from the hall = 60 %  
If the quantity of recirculated air is mixed with the conditioned air after the cooling coil, find the following :
- The condition of air leaving the conditioner coil and before mixing with the recirculated air
  - The condition of air before entering the hall
  - The mass of air entering the cooler
  - The mass of total air passing through the hall
  - The by-pass factor of the cooling coil ; and
  - The refrigeration load on the cooling coil in Tons of Refrigeration.
- Q5** a) What are the possible sources of noise and vibration in an air conditioning system? Discuss methods used to reduce the noise level and isolate vibrations. **10**
- b) Explain with neat sketches DX and flooded evaporators. **10**
- Q6** Write short notes (any four) : **20**
- Air Washers
  - Marine Air Conditioning
  - Pressure and Temperature Controls
  - ASHRAE Numbering System of Refrigerants
  - Split Air Conditioners
  - LEED Rating System for Green Buildings
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