KERALA AGRICULTURAL UNIVERSITY

2015 Admission

B.Tech.Food Engg. Examination-January 2017

IIIrd Semester Final

Marks: 50

Time : 2 hours

o:Fden 2103

Refrigeration and cold storage(1+1)

(10 x 1=10)

in the blanks/True of False

COP of the refrigerant is the ratio of heat absorbed to ----------

During vapour compression refrigeration heat is rejected in ----------

Room sensible heat is 50 kw. Room latent heat is 50kw, then room sensible Heat factor is ----------

. Dry ice is ----------

. Expansion valve is present in ---------- side of vapour compression system.

. For summer air conditioning effective temperature is ----------

. For winter air conditioning DBT should be 25°C

. In vapour absorption system there is no moving part.

. During sensible heating specific humidity of air is changed.

0. The difference between dry bulb temperature and wet bulb temperature is called wet bulb depression.

(5x 2=10)

Vrite short notes on ANY FIVE:

1. Bye pass factor of heating coil.
2. Condensers.
3. Secondary refrigerants.
4. Heat engine and refrigerator.
5. Non-CFC refrigeration.
6. Heat transfer in cold store.
7. Cooling towers.

(5 x 4=20)

I Write answers on ANY FIVE:

1. Derive an expression for COP for vapour absorption system.
2. Give the psychrometric representation of the following processes
   a) Sensible cooling b) Humidification c) Cooling and dehumidification
   d) Sensible heating
3. A simple saturation ammonia compression system has a high pressure of 1.35MN/m^2 and a low pressure of 0.19MN/m^2. Find per 400000 kj/h of refrigerating capacity, power consumption of the compressor and COP of the cycle.
4. Explain vortex tube refrigeration system.
5. Explain various expansion devices used in refrigeration.
6. 250kg of air saturated at 2^0C is mixed with 50kg of air at 35^0 C and 80% RH. Determine the final state of air.
7. Explain the various applications of refrigeration in food preservation.

IV. Write essay on any ONE (1 x 10=10)

1. Discuss the importance and design considerations of cold store.
2. Explain the working of vapour absorption cycle with neat sketch.

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