KERALA AGRICULTURAL UNIVERSITY
B.Tech. (Ag. Engg.) 2016 Admission
V Semester Final Examination-January 2019

Fape.3105 **Refrigeration and Air Conditioning (2+1)**

Marks: 50
Time: 2 hours

I **Fill up the following** **(10x1=10)**

1 The properties of the system whose value for the entire system is equal to the sum of their values for the individual parts of the system are called as _____
2 _____ laws states the change of internal energy of a perfect gas is directly proportional change of temperature.
3 _____ is the ratio of heat, extracted in the refrigerator to the work done on the refrigerant.
4 During a refrigeration cycle, heat is rejected by the refrigerant in a_____
5 The refrigerant, commonly used in vapour absorption system is _____

State True/ False

6 In a vapour compression refrigeration system, subcooling the liquid refrigerant is to increase the coefficient of performance
7 One tonne of refrigeration is equal to 210 joules per minutes
8 Air refrigeration cycle is used in gas liquefaction
9 The refrigerant R-717 is called as water
10 The coefficient of performance of practical vapour compression system is more as compared to that for vapour absorption system

II **Write Short notes on any FIVE of the following** **(5x2=10)**

1 Refrigerator and the unit of refrigeration.
2 Classification of refrigerant.
3 Electrolux refrigerator.
4 Psychrometry and components of psychrometry chart.
5 Cooling load and its components.
6 Fouling factor.
7 Distinguish between the refrigeration and air conditioning.

III **Answer any FIVE of the following.** **(5x4=20)**

1 Differentiate vapour absorption and compression cycle.
2 Compare between air cooled and water cooled condensers
3 Differentiate humidification and dehumidification.
4 RSHF and GSHF.
5 Properties of an ideal refrigerant and azeotropes.
6 Define the following
   a. Wet bulb temperature
   b. Relative humidity
   c. Humid ratio
   d. Enthalpy
7 Pressure in ducts.

IV **Answer any ONE of the following** **(1x10=10)**

1 Steam jet refrigeration system.
2 List out the application of air conditioning in industry. Give details about any one of the application of refrigeration and air conditioning in food industry.

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