



KERALA AGRICULTURAL UNIVERSITY
B.Tech. (Agrl. Engg.) 2017 Admission
V Semester Final Examination-January 2020

Fape 3105

Refrigeration and Air Conditioning (2+1)

Marks: 50
Time: 2 hours

I Fill up the following

(10x1=10)

1. The vapour compression refrigeration cycle works on _____ cycle.
2. Nocturnal cooling is a _____ refrigeration system.
3. The entropy of perfect crystals is zero at _____ zero temperature.
4. The water, alcohol and ammonia have _____ refrigerating effects at different altitudes.
5. The highest temperature during the cycle, in a vapour compression refrigeration system, occurs after _____.
6. The sub cooling is a process of cooling the refrigerant of a vapour compression refrigeration system before _____.
7. The weak solution in an absorber of a vapour absorption refrigeration system is a mixture of _____ and _____.
8. The coefficient of performance is high in _____ refrigeration system.
9. The compression device used in a steam jet refrigeration system is a _____.
10. Psychrometry deals with the study of _____ air.

II Write Short notes on ANY FIVE of the following

(5x2=10)

1. Air refrigeration system.
2. Super heating and sub cooling.
3. Entropy and Enthalpy.
4. Capillary tube.
5. Ideal refrigerant.
6. Ducts.
7. Defrosting systems.

III Answer ANY FIVE of the following.

(5x4=20)

1. Explain your view of Clausius statement of second law of Thermodynamics in connection with refrigeration system.
2. With the help of a diagram explain the working principle of vapour absorption refrigeration system.
3. Give the classification of condensers. Explain evaporative condenser used in ammonia refrigeration plant.
4. Give the classification of air conditioning system. Explain industrial air conditioning system.
5. Give the important terms used in psychrometric chart and its uses.
6. Explain secondary refrigerants with examples.
7. Explain the application of refrigeration in food industry

IV Write an essay on ANY ONE of the following

(1x10=10)

1. Explain the working mechanism, principle parts, merits and demerits of vapour compression refrigeration system.
2. Discuss the different types of heat loads, which have to be taken in to account in order to estimate the total heat load of freezing plant.
