## KERALA AGRICULTURAL UNIVERSITY
### B.Tech. (Food Engg. & Tech.) 2019 Admission

### III Semester Final Examination-February 2021

**Fden.2103**  **Refrigeration and Cold Storage (1+1)**  **Marks: 50**
**Time: 2 hours**

**I**  **Fill in the blanks:**  (10x1=10)

1. The highest temperature during the cycle, in a vapour compression refrigeration system occurs after _____.
2. The chemical name of R -12 is _____.
3. One ton of refrigeration is equal to _____.
4. Vapour compression refrigeration system works on _____ cycle.
5. Dry ice is known as _____.
6. The _____ lines are curved lines and range between 0 to 100% on psychrometric chart.
7. ASHRAE stands for _____.
8. Sling psychrometer is used to determine the temperature of _____ and _____.
9. In the evaporative condenser _____ and _____ is used as a cooling medium.
10. If the input is 100 kJ/kg and refrigeration effect produced is 200 kJ/kg, the COP of refrigerator is _____.

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

1. COP of heat pump
2. Cold storage structure
3. Mixing of air streams
4. Expansion valve
5. Psychrometric chart
6. Azeotrope
7. Components of refrigeration system

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

1. List the components of air conditioning systems.
2. Differentiate between vapour absorption and vapour compression refrigeration systems.
3. Classify the refrigerants and give two examples for each.
4. Differentiate between humidification and dehumidification.
5. Write a short note on cold storage.
6. Draw a psychrometric chart showing different lines on it.
7. The specific humidity of dry air at 760 mm of Hg is 0.016 kg/kg of dry air and saturation pressure corresponding to 28°C dry bulb temperature is 0.03778 bar. Calculate the partial pressure of water vapour and relative humidity.

**IV**  **Write an essay on ANY ONE of the following**  (1x10=10)

1. Mechanical vapour compression refrigeration system.
2. Psychrometric processes.

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