CBSE Class 12 Air-Conditioning and Refrigeration 2018 - Set 112

Question Paper

Conducted by the Central Board of Secondary Education (CBSE)

Time Allowed: 2 Hours **Maximum Marks: 40**

General Instructions

(i) Section A: attempt any fifteen of the seventeen parts of Question 1 (1 mark each).
(ii) Section B: attempt any three questions (2 marks each).
(iii) Section C: attempt any three questions (3 marks each).
(iv) Section D: attempt any two questions (5 marks each).

Section A

*Instructions : Attempt any **fifteen** questions from Section A.*

1. Choose the correct answer : $1 \times 15 = 15$

1(i). The air temperature at which water vapour in the air starts condensing, is called

(A) dew point
(B) dry bulb
(C) wet bulb
(D) None of the above

1(ii). Adding moisture to air at constant dry bulb temperature is called

(A) sensible cooling
(B) humidification
(C) dehumidification
(D) chilling

1(iii). The relative humidity at saturation curve is

(A) 10%
(B) 25%
(C) 50%
(D) 100%

1(iv). The flow of refrigerant through capillary tube depends on its

(A) length
(B) bore diameter
(C) both length and bore diameter
(D) None of the above

1(v). The quantity of heat transfer per unit time is

(A) directly proportional to area
(B) directly proportional to difference in temperature
(C) inversely proportional to the length of path
(D) All of the above

1(vi). The evaporator is also known as

(A) freezing coil
(B) cooling coil
(C) chilling coil
(D) All of the above

1(vii). The evaporator generally used in wine cooling is

(A) plate evaporator
(B) finned evaporator
(C) tube-in-tube evaporator
(D) shell and tube evaporator

1(viii). In shell and tube condenser

(A) air flows through the tubes
(B) water flows through the tubes
(C) refrigerant flows through the tubes
(D) None of the above

1(ix). The refrigerant R-12 is

(A) dichloro difluoro methane
(B) monochloro difluoro methane
(C) trichloro monofluoro methane
(D) tetrachloro difluoro methane

1(x). Which of the following refrigerants has the lowest freezing point ?

(A) R-11
(B) R-12
(C) R-22
(D) Ammonia

1(xi). The freon group of refrigerants are

(A) halocarbon refrigerants
(B) azeotropic refrigerants
(C) inorganic refrigerants
(D) hydrocarbon refrigerants

1(xii). An Electrolux refrigerator is also called as

(A) single fluid absorption system
(B) two-fluid absorption system
(C) three-fluid absorption system
(D) None of the above

1(xiii). The fluids used in the Electrolux refrigerators are

(A) water and hydrogen
(B) ammonia and hydrogen
(C) ammonia, water and hydrogen
(D) None of the above

1(xiv). In which of the following systems is electricity not required ?

(A) Air refrigeration
(B) Vortex-tube
(C) Vapour absorption
(D) Vapour compression

1(xv). The symptoms for an undercharged system is/are

(A) suction pressure will be low
(B) compressor will run continuously
(C) head pressure will be lower than normal
(D) All of the above

1(xvi). Aneroid barometer is used to measure

(A) temperature
(B) pressure
(C) velocity
(D) None of the above

1(xvii). Halide torch is used to detect leakage of which refrigerant ?

(A) Ammonia
(B) Carbon dioxide
(C) Freon-12
(D) All of the above

Section B

*Instructions : Attempt any **three** questions from Section B. 2×3=6*

2. Define room sensible heat factor.

3. Draw a psychrometric chart and show sensible cooling process on it.

4. Give the function of an evaporator.

5. Enumerate processes of defrosting.

6. Give the working principle of Desert Cooler.

Section C

*Instructions : Attempt any **three** questions from Section C. 3×3=9*

7. Explain the difference between conduction and convection heat transfer processes.

8. Give the classification of insulating materials.

9. Explain the function of a condenser.

10. Enumerate the desirable properties of a good refrigerant.

11. Draw a sketch of a Flooded Evaporator.

Section D

*Instructions : Attempt any **two** questions from Section D. 5×2=10*

12. Describe the working of a high pressure side float valve.

13. Explain the various sources of heat loads.

14. Describe an automatic expansion valve.

- End of Question Paper -