CBSE Class 12 Air-Conditioning and Refrigeration 2019 - 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). On a psychrometric chart, sensible heating or cooling is represented by

(A) A horizontal line
(B) A vertical line
(C) An inclined line
(D) A curved line

1(ii). The ratio of sensible heat to total heat is known as

(A) Dew Point
(B) Humidification Ratio
(C) Relative Humidity
(D) Sensible Heat Factor

1(iii). The capillary tube, as an expansion device, is used in

(A) Domestic refrigerators
(B) Water coolers
(C) Room air-conditioners
(D) All of the above

1(iv). Thermostatic expansion valve operates by responding to

(A) Load
(B) Degree of superheat
(C) Temperature
(D) Pressure

1(v). Evaporator is also known as

(A) Freezing coil
(B) Cooling coil
(C) Chilling coil
(D) All of the above

1(vi). The pressure at the inlet of refrigerant compressor is called

(A) Suction pressure
(B) Discharge pressure
(C) Critical pressure
(D) Back pressure

1(vii). The refrigerant R-22 is

(A) Dichloro difluoro methane
(B) Difluoro monochloro methane
(C) Monochloro trifluoro methane
(D) Trichloro monofluoro methane

1(viii). The refrigerant ammonia is

(A) R 717
(B) R 134
(C) R 718
(D) R 152

1(ix). The higher temperature in refrigeration cycle occurs at

(A) Receiver
(B) Expansion valve
(C) Evaporator
(D) Compressor discharge

1(x). As air cools, its relative humidity

(A) increases
(B) decreases
(C) remains unaffected
(D) None of the above

1(xi). Electrolux refrigerator has the following working substance(s) :

(A) Hydrogen
(B) Ammonia and Hydrogen
(C) Ammonia, Hydrogen and Water
(D) Ammonia and Water

1(xii). The recommended temperature for potatoes storage is

(A) 2°C
(B) 8°C
(C) 10°C
(D) None of the above

1(xiii). Which of the following provide the best insulation medium ?

(A) Metals
(B) Liquids
(C) Gases
(D) Non metallic solids

1(xiv). Heat flows through the metal walls of tubing by

(A) Radiation
(B) Conduction
(C) Convection
(D) None of the above

1(xv). Evaporation takes place in refrigeration when there is a change in state from

(A) gaseous to liquid
(B) gaseous to solid
(C) liquid to gaseous
(D) All of the above

1(xvi). The condenser removes from the refrigerant

(A) Sensible heat only
(B) Latent heat only
(C) Both sensible heat and latent heat
(D) Neither sensible heat nor latent heat

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

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

Section B

Instructions : *Attempt* ***any three*** *questions from Section B.* $2 \times 3 = 6$

2. Give the function of compressor.

3. What is an air washer ?

4. Briefly write the external heat gains in a building for air-conditioning.

5. What is the function of solenoid valve ?

6. Explain overall heat transfer co-efficient.

Section C

Instructions : *Attempt* ***any three*** *questions from Section C.* $3 \times 3 = 9$

7. Draw a neat sketch of shell and coil type condenser.

8. What are the secondary refrigerants ?

9. What is evaporative cooling ?

10. How is ammonia charged in an ice plant ?

11. Describe chemical dehumidification with the help of a psychrometric chart.

Section D

Instructions : *Attempt* ***any two*** *questions from Section D.* $5 \times 2 = 10$

12. Draw a neat sketch of thermostatic expansion valve.

13. Explain desirable properties of a good refrigerant.

14. Describe the methods of purging.

- End of Question Paper -