Refrigeration

Department of Mechanical Engineering

1. One ton of the refrigeration is

(a) the standard unit used in refrigeration problems

(b) the cooling effect produced by melting of 1 ton of ice

(c) the refrigeration effect to freeze 1 ton of water at 0°C into ice at 0°C in 24 hours

(d) the refrigeration effect to produce 1 ton of ice at NTP conditions

Option **(c)**

2. In the SI unit, one ton of refrigeration is equal to

(a) 210 kJ/min

(b) 21 kJ/min

(c) 3.5 kJ/min

(d) 420 kJ/min

Option **(a)**

3. The coefficient of performance is the ratio of

(a) refrigerant effect to the heat of compression

(b) refrigerant effect to the work done by the compressor

(c) refrigerant effect to the enthalpy increase in compressor

(d) all of the above

Option **(d)**

4. For a domestic refrigerator, the COP is

(a) more than 1

(b) less than 1

(c) equal to 1

(d) unpredictable

Option **(a)**

5. The refrigerant for a refrigerator should have

(a) high sensible heat

(b) high total heat

(c) high latent heat

(d) low latent heat

Option **(c)**

6. In the vapour compression refrigeration system, the condition of refrigerant is saturated liquid

(a) after passing through the condenser

(b) before passing through the condenser

(c) before entering the compressor

(d) after passing through the expansion valve

Option **(a)**

7. The higher temperature in the vapour compression cycle occurs at

(a) expansion valve outlet

(b) condenser discharge

(c) compressor discharge

(d) evaporator outlet

Option **(c)**

8. In a refrigeration cycle, heat is rejected by the refrigerant in a

(a) expansion valve

(b) condenser

(c) compressor

(d) evaporator

Option **(b)**

9. In a vapour compression refrigeration cycle, pressure remains constant in

(a) expansion valve

(b) condenser

(c) compressor

(d) none of the above

Option **(b)**

10. Most of the domestic refrigerators work on the following refrigeration system

(a) Vapour compression

(b) Vapour absorption

(c) Carnot cycle

(d) All of the above

Option **(a)**

11. What is the process carried out in the generator of vapour absorption refrigeration cycle?

(a) Weak solution of ammonia in water is heated

(b) Strong solution of ammonia in water is heated

(c) Only water is heated and heat is given to the ammonia to form its vapour

(d) None of the above

Option **(b)**

12. Vapour absorption system normally uses the following refrigerant

(a) carbon dioxide

(b) sulfur dioxide

(c) ammonia

(d) R-134a

Option **(c)**

13. Ammonia is

(a) non-toxic

(b) non-inflammable

(c) toxic and non-inflammable

(d) highly toxic and inflammable

Option **(d)**

14. In the vapour absorption system, which of the following used as an absorbent?

(a) Carbon dioxide

(b) Water

(c) Ammonia

(d) R-22

Option **(c)**

15. The compressor in the vapour absorption system is replaced by

(a) an absorber

(b) a generator

(c) an absorber and generator

(d) none of the above

Option **(c)**

16. Which of the following is not component of vapour absorption refrigeration system

(a) Compressor

(b) Generator

(c) Absorber

(d) Evaporator

Option **(a)**

17. What is the condition of the refrigerant at the exit of the evaporator in the aqua-ammonia absorption system?

(a) Low-pressure ammonia vapour

(b) High-pressure ammonia vapour

(c) Low-pressure strong vapour mixture of ammonia and water

(d) High-pressure strong vapour mixture of ammonia and water

Option **(a)**

18. In the vapour absorption refrigeration system, heat is rejected in

(a) condenser only

(b) generator only

(c) absorber only

(d) condenser and absorber

Option **(d)**

19. Ammonia-absorption refrigeration cycle requires

(a) very little work input

(b) maximum work input

(c) nearly same work input as for vapour compression cycle

(d) zero work input

Option **(a)**

20. The COP of a vapour compression plant in comparison to vapour absorption plant is

(a) more

(b) less

(c) same

(d) depends on the size of the plant

Option **(a)**

21. Performance parameter for the refrigeration system is known as

(a) Efficiency

(b) COP

(c) Effectiveness

(d) Energy ratio

Option **(b)**

22. In the domestic refrigerators, the bank of tubes at the back of the refrigerator are

(a) condenser tubes

(b) evaporator tubes

(c) capillary tubes

(d) all of the above

Option **(a)**

23. In a vapour compression refrigeration cycle, refrigerating effect is produced by

(a) expansion valve

(b) condenser

(c) compressor

(d) evaporator

Option **(d)**

24. The refrigerant used in domestic refrigerators is generally

(a) R134a

(b) carbon dioxide

(c) oxygen

(d) ammonia

Option **(a)**

25. Which of the following refrigerant has the highest boiling point?

(A) Carbon di-oxide

(B) Ammonia

(C) Sulphur di-oxide

(D) Freon-12

Option **(c)**

26. Which one of the following is a CFC refrigerant?

(A) R 744

(B) R 290

(C) R 502

(D) R 718

Option **(c)**

27. Commonly used refrigerant in commercial ice plant is

(A) CO2

(B) Freon 12

(C) Ammonia

(D) Air

Option **(c)**

28. An air washer can work as:

(A) Humidifier

(B) Dehumidifier

(C) Filter

(D) All of the above

Option **(d)**

29. Select the wrong characteristics of refrigerant:

(A) low latent heat

(B) low boiling point

(C) high thermal conductivity

(D) none of the above

Option **(d)**

30. Latent heat of fusion of ice is:

(A) 335 kJ/kg

(B) 144 BTU/lb

(C) 80 kilo-calorie/kg

(D) all of the above

Option **(a)**