

066/2016

Maximum : 100 marks

Time : 1 hour and 15 minutes

1. Sensible heat factor is :

(A)  $\frac{\text{Sensible heat}}{\text{Latent heat}}$

(B)  $\frac{\text{Total heat}}{\text{Sensible heat}}$

(C)  $\frac{\text{Latent heat}}{\text{Sensible heat}}$

(D)  $\frac{\text{Sensible heat}}{\text{Total heat}}$

2. Amount of heat required to raise the temperature of one pound of water through 1°C is called :

(A) C.H.U.

(B) B.T.U.

(C) Calorie

(D) Specific heat

3. Oil separator is filled in between :

(A) Condenser and evaporator

(B) On the suction line

(C) Compressor and condenser

(D) At the receiver outlet

4. H.F.C. should not vent into atmosphere because :

(A) It is flammable in atmospheric temperature

(B) It has high global warming potential

(C) It is highly toxic

(D) It is very costly gas

5. Process of changing solid into its vapour state without passing through liquid state is :

(A) super heating

(B) sublimation

(C) subcooling

(D) triple point

6. Latent heat of fusion of ice is :

(A) 335 kJ/kg

(B) 144 BTU/lb

(C) 80 kilo calories/kg

(D) all of the above

7. Sling psychrometer is used to measure :
- (A) only dry bulb temperature                      (B) only wet bulb temperature  
(C) dry and wet bulb temperature                (D) relative humidity
8. In air refrigeration refrigerating effect is produced by :
- (A) compressing air                                      (B) expanding air  
(C) subcooling    (D) super heating
9. Accumulator is provided for :
- (A) storing of unvapourized liquid                (B) storing of liquid refrigerant  
(C) exchange of heat                                      (D) condensing gas
10. In air conditioning of aeroplanes the refrigerant used is :
- (A) Ammonia    (B) Freon 12  
(C) Air    (D) Water
11. Select the wrong characteristics of refrigerant :
- (A) low latent heat                                      (B) low boiling point  
(C) high thermal conductivity                      (D) none of these
12. The function of duct in air conditioning unit is :
- (A) air cooling    (B) air cleaning  
(C) air drying    (D) air distributing
13. Commonly used refrigerant in commercial ice plant is :
- (A) Ammonia    (B) Freon 12  
(C) Air    (D)  $\text{CO}_2$
14. The C.O.P. of a domestic refrigerator in comparison to domestic air conditioner will be :
- (A) more    (B) same  
(C) less    (D) unpredictable
15. An Air washer can work as :
- (A) Humidifier    (B) Dehumidifier  
(C) Filter    (D) All the above

16. The brine is always used as a secondary refrigerant in :
- (A) cold storage (B) milk chilling plant  
(C) ice plant (D) none of these
17. In winter air conditioning the process used is :
- (A) Dehumidification (B) Heating and humidification  
(C) Humidification (D) Cooling and dehumidification
18. At which point °C scale and °F scale will be same :
- (A) -40° (B) 0°  
(C) 273° (D) 40°
19. Sub cooling is a process of cooling the refrigerant in vapour compression refrigeration system before :
- (A) Evaporation (B) Throttling  
(C) Condensation (D) Compression
20. The milk is stored at a temperature of :
- (A) -5°C (B) 10°C  
(C) 0°C (D) 4°
21. Absolute zero temperature is taken as :
- (A) -273°C (B) 273°C  
(C) 237°C (D) 0°C
22. A thermostatic expansion valve function with :
- (A) suction pressure (B) discharge pressure  
(C) discharge temperature (D) suction temperature
23. For ammonia refrigerating system the tubes of a shell and tube condenser are made of :
- (A) Copper (B) Aluminium  
(C) Steel (D) Brass

24. Convert from CFC 12 to HFC 134 A the compressor displacement will be :
- (A) smaller (B) equal  
(C) slightly larger (D) double
25. The type of condenser used in water cooler :
- (A) natural draft (B) forced draft  
(C) evaporative (D) water cooled
26. Pump down the system for :
- (A) more cooling effect (B) to check compressor efficiency  
(C) gas charging (D) to attend maintenance in low side
27. Purging is done :
- (A) after gas charging (B) before gas charging  
(C) before vacuumizing (D) before pressurising
28. The refrigerant enters in the condenser by the :
- (A) top side (B) last coil  
(C) bottom side (D) middle tube
29. One ton refrigeration is equal to :
- (A) 210 kj/min (B) 12600 kj/hour  
(C) 3.5 kj/sec (D) all of the above
30. Liquid charged in thermostatic expansion valves sensing bulb is :
- (A) alcohol (B) same refrigerant  
(C) mercury (D) nitrogen
31. Solenoid valve operated by :
- (A) electrically (B) hand  
(C) gas pressure (D) oil pressure
32. The colour of the flame of halide torch in case of leakage of Freon refrigerant will change to :
- (A) yellow (B) red  
(C) bright green (D) orange

33. Which type of valve is used in a reciprocating refrigeration compressor?
- (A) rotary valve (B) poppet valve  
(C) ring plate (D) glob valve
34. The presence of frost on the cooling coils of the evaporator of a refrigeration system :
- (A) increases the compressor pressure  
(B) act as the insulator and decreases the heat transfer rate  
(C) makes the compressor run for comparatively short durations  
(D) reduce the life of cooling coils
35. Dry ice is :
- (A) solidified carbondioxide  
(B) ice free from dissolved air and gases  
(C) ice free from impurities  
(D) ice made from transparent distilled water
36. Which of the following machines can be used to obtain refrigeration at places where there is no electric power?
- (A) air refrigeration (B) steam jet refrigeration  
(C) vapour compression (D) vapour absorption
37. Rectifiers are used for converting :
- (A) voltage into current (B) AC to DC  
(C) DC to AC (D) voltage in to velocity
38. The operation theatre in a hospital is to be air conditioned suggest the percentage of outside air being circulated in the theatre :
- (A) zero (B) 20  
(C) 50 (D) 100
39. The difference between D.B.T. and W.B.T. is called :
- (A) wet bulb depression (B) dew point depression  
(C) effective temperature (D) adiabatic saturation temperature

40. The absolute zero temperature corresponds on the condition when :
- (A) all the substances exit only as solids
  - (B) volume of a gas reduces to zero
  - (C) kinetic energy of gas molecules become zero
  - (D) no pressure is exerted by the gas
41. The oil used with 134 A refrigerant is :
- (A) Mineral oil
  - (B) Capilla D
  - (C) Polyol ester oil
  - (D) Lubricating oil
42. Cripser temperature of refrigerator is equal to :
- (A)  $0^{\circ}\text{C}$
  - (B)  $8^{\circ}\text{C}$
  - (C)  $-5^{\circ}\text{C}$
  - (D) None of the above
43. Auto defrost operated by :
- (A) Evaporator fan
  - (B) Thermostat
  - (C) Timer switch
  - (D) Heating element
44. Dehydrator is installed in the :
- (A) liquid line
  - (B) discharge line
  - (C) suction line
  - (D) charging line
45. The device which used to find relative humidity :
- (A) Pyrometer
  - (B) Anemometer
  - (C) Hydrometer
  - (D) Hygrometer
46. Chemical name of Freon 22 is :
- (A) Dichloro difluoro methane
  - (B) Monochloro difluoro methane
  - (C) Trichloro monofluoro methane
  - (D) Dichloro monofluoro methane
47. The capacity of visible cooler is expressed in :
- (A) cubic feet
  - (B) litres
  - (C) k.cal/TR
  - (D) tons of refrigeration
48. Which of the following refrigerant has the lowest boiling point?
- (A) Carbon dioxide
  - (B) Ammonia
  - (C) Sulphur dioxide
  - (D) Freon 12

49. HFC 134 A appliance has capillary length when compare to CFC unit :
- (A) 10% to 20% more (B) 20% short  
(C) 50% longer (D) same length
50. The effectiveness of the cooling tower is dependent on :
- (A) Dry bulb temperature of the air (B) Direction of the flow of air  
(C) Wet bulb temperature of the air (D) None of the above
51. Milky white ice obtained if :
- (A) impurities are present in water  
(B) due to the presence of  $\text{CO}_2$   
(C) by keeping in an insulated chamber  
(D) air is present in it
52. In a shell and coil condenser :
- (A) water flows in the shell and refrigerant in the coil  
(B) only refrigerant flows through the shell as well as coil  
(C) only water flows through the shell as well as coil  
(D) water flows in the coil and the refrigerant in the shell
53. In a thermal electric expansion valve which senses the suction temperature is :
- (A) Transformer (B) Thermister  
(C) Thermostat (D) Rheostat
54. In a flooded evaporator which of the following types of expansion, device is employed :
- (A) float valve (B) capillary tube  
(C) automatic expansion valve (D) thermostatic expansion valve
55. In an ice plant the function of brine agitator is :
- (A) to increase COP (B) to reduce compressor power  
(C) to obtain uniform temperature (D) to super heat the refrigerant gas
56. In an air conditioning system the comfort conditions are defined by :
- (A)  $15^\circ\text{C}$  DBT 90% RH (B)  $25^\circ\text{C}$  DBT 35% RH  
(C)  $20^\circ\text{C}$  DBT 80% RH (D)  $22^\circ\text{C}$  DBT 60% RH

57. The electrical component of automobile air conditioner allows to engage and disengage the compressor from the thermostat :
- (A) Rheostat (B) Thermostat  
(C) Fuse (D) Magnetic clutch
58. Sum of atmospheric pressure and gauge pressure is called :
- (A) Total pressure (B) Absolute pressure  
(C) Normal pressure (D) Natural pressure
59. The diode used for voltage regulation is :
- (A) Rectifier diode (B) Signal diode  
(C) Zener diode (D) Vari cap diode
60. The specific humidity is the mass of water vapour present in :
- (A) 1 kg of dry air (B) 1 m<sup>3</sup> of dry air  
(C) 1 m<sup>3</sup> of wet air (D) 1 kg of wet air
61. Which one of the following oxy fuel gas flames has the highest flame temperature?
- (A) Oxy hydrogen (B) Oxy acetylene flame  
(C) Oxy coal gas flame (D) Oxy LPG flame
62. A micrometer has a positive error of 0.02 MM. What is the correct reading when the micrometer measures 25.37 MM :
- (A) 25.35 MM (B) 25.43 MM  
(C) 25.39 MM (D) 25.41 MM
63. One micron of vacuum is equal to :
- (A) 0.1 MM Hg (B) 0.01 MM Hg  
(C) 0.001 MM Hg (D) 0.0001 MM Hg
64. Start the compressor without relay to short :
- (A) C and S terminal (B) S and R terminal  
(C) C and R terminal (D) Compressor body and S terminal
65. There is no relay and starting capacitor in :
- (A) CSR circuit (B) CSIR circuit  
(C) RSIR circuit (D) PSC circuit