

**Duration: 60 Mins**

**Total Marks: 100**

**ID: ITISKILL0408EM**

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**1. Which component is used in frost free refrigerator?**

- A) Plate coil evaporator      B) Oil separator  
C) Timer switch                D) Liquid receiver

**2. Which position is safe for storing refrigerant cylinder?**

- A) Inclined                        B) Upside down  
C) Upright                         D) Horizontal

**3. Which type of condenser is used in window air conditioner?**

- A) Bare tube                      B) Plate and tube  
C) Fins and tube                D) Plate and coil

**4. What is the reason for frost accumulation in between fins and tubes of evaporator in frost free refrigerator?**

- A) Defective fan motor        B) Over charge of refrigerant  
C) Defective timer              D) Under charge of refrigerant

**5. Which refrigeration system works on directly by the heat energy?**

- A) Vapour absorption refrigeration      B) Mechanical refrigeration  
C) Jet refrigeration                              D) Vapour compression refrigeration

**6. What is the percentage range of silver in copper to copper pipes brazing rod?**

- A) 20 to 35%                      B) 45 to 60%  
C) 35 to 45%                      D) 60 to 100%

**7. Which AC connects the indoor evaporator unit with outdoor condenser unit through a wall hole of 7cm diameter?**

- A) Central air-conditioner      B) Industrial air-conditioner  
C) Split air-conditioner        D) Window air-conditioner

**8. How numerical designations of inorganic refrigerants are assigned?**

- A) Adding 700 to molecular mass of compound      B) Divide 700 to molecular mass of compound

C) Subtracting 700 from molecular mass of compound

D) Multiply 700 to molecular mass of compound

**9. Which type of rotor is used in 3 Phase induction motor?**

- A) Shaded pole rotor            B) Solid rotor  
C) Squirrel cage rotor         D) Laminated rotor

**10. What is the effect of sludge in car AC?**

- A) Blocks the orifice of AEV      B) Closes the orifice of capillary  
C) Closes the orifice of TEEV    D) Chokes the orifice of TEV

**11. What is the wet bulb temperature of air if dry bulb temperature is 35 Degree Centigrade and wet bulb depression is 4 Degree Centigrade?**

- A) 30 Degree Centigrade        B) 32 Degree Centigrade  
C) 33 Degree Centigrade        D) 31 Degree Centigrade

**12. Why the filler metal does not melt and flow into the joint in bronze welding of copper?**

- A) Surface coated with oxides or oily material      B) Due to excess of polished surface  
C) Excessive heating of metal's surface              D) Excess use of flux

**13. Which fan is used in condensing unit of ductable split air conditioner?**

- A) Propeller fan                    B) Radial fan  
C) Centrifugal fan                D) Forward curved fan

**14. What is the function of remote control in split AC?**

- A) Pressure setting                B) Humidity setting  
C) Drain water control            D) Transmits signal to operate AC

**15. What is the effect of sensing higher temperature by thermistor NTC?**

- A) Resistance increases        B) Resistance becomes zero  
C) Resistance becomes infinity      D) Resistance decreases

16. Which components are connected by metering device in vapour compression cycle?

- A) Compressor and evaporator
- B) Evaporator and suction line
- C) Condenser and evaporator
- D) Compressor and condenser

17. Which compressor capacity is suitable for 2 TR air conditioner?

- A) 6000 Kcal/h
- B) 3000 Kcal/h
- C) 4000 Kcal/h
- D) 5000 Kcal/h

18. Which control trips if the expansion valve inlet strainer is blocked in chiller AC plant?

- A) High pressure cut out
- B) Oil pressure cut out
- C) Thermostat control
- D) Low pressure cut out

19. Which switch is interlocked to become on if the power isolator is off in package AC?

- A) Blower motor
- B) Crankcase heater
- C) Compressor starting
- D) Thermostat

20. Which process is done first in split AC for shifting from one place to another?

- A) Evacuation
- B) Pump down
- C) Vacuumisation
- D) Flushing

21. What is the unit of electric current?

- A) Volt
- B) Ohm
- C) Ampere
- D) Farad

22. Which instrument is used to measure the velocity pressure of air in ducting system?

- A) Pitot tube
- B) Barometer
- C) Nanometer
- D) Bourdeon tube

23. Which is the mounting location of evaporator in ductable split unit?

- A) Roof mounting
- B) Wall mounting
- C) Ceiling mounting
- D) Floor mounting

24. What is the reason for intermittent cooling cycle in car AC?

- A) Fully evacuated system
- B) Non condensables in the system
- C) Excess of lubricant in receiver
- D) Moisture in the system

25. What is the remedy to remove moisture from the window AC system?

- A) Over gas charge in the system
- B) Clean the condenser fins
- C) Clean the evaporator fins
- D) Evacuate the system deeply

26. What is meant by total pressure in a duct?

- A) Suction pressure + discharge pressure
- B) Static pressure + velocity pressure
- C) Velocity pressure + suction pressure
- D) Velocity pressure - static pressure

27. Which safety switch deactivates the compressor motor circuit if suction pressure falls below the safe limit in package AC?

- A) Low pressure switch
- B) Selector switch
- C) Dual pressure switch
- D) High pressure switch

28. What is the absolute pressure of gas in a cylinder, if gauge reads 135.3 p.s.i?

- A) 160 p.s.i.a
- B) 150 p.s.i.a
- C) 130 p.s.i.a
- D) 140 p.s.i.a

29. What is the reason if refrigerator runs normally but no cooling effect?

- A) Over charge
- B) Filter block
- C) Leakage of refrigerant
- D) Condenser block

30. Which gas is produced by the chemical reaction of carbide and water?

- A) Nitrogen
- B) Oxygen
- C) Acetylene
- D) Carbon dioxide

31. Which capacitor is connected in series with starting winding of CSR motor during operation?

- A) Start capacitor
- B) Fan capacitor
- C) Run capacitor
- D) No capacitor is connected

32. Which meter indicates the true power directly in an electrical circuit?

- A) Ohm meter
- B) Ammeter
- C) Volt meter
- D) Watt meter

33. Which instrument is used to measure the total pressure in an air duct?

- A) Hygrometer
- B) Pitot tube manometer
- C) Anemometer
- D) Velocimeter

34. Which winding of compressor motor is directly connected across voltage relay coil?

- A) Starting winding
- B) Auxiliary winding
- C) Running winding
- D) Main winding

**35.** Which electronic component senses the temperature in indoor unit of VRV system?

- A) Resistor
- B) Thyristor
- C) Thermistor
- D) Transistor

**36.** Which gauge is connected to the AC plant system before doing pump down operation?

- A) Compound gauge
- B) Oil pressure gauge
- C) Water pressure gauge
- D) High pressure gauge

**37.** Which bearing is used in condenser motor of outdoor unit in ductable multi split air conditioner?

- A) Thrust bearing
- B) Sleeve bearing
- C) Ball bearing
- D) Open ball bearing

**38.** Which tool is used to straighten the deformed fins of air cooled condenser?

- A) Brass brush
- B) Fin comb
- C) Blower
- D) Wire brush

**39.** What is the type of condenser used in direct cool refrigerator?

- A) Shell and tube
- B) Tube in tube
- C) Fin and tube
- D) Wire mesh

**40.** Which material is used for making service valve?

- A) Brass
- B) Stainless steel
- C) Aluminium
- D) Cast iron

**41.** What is the use of suction baffle in a scroll compressor?

- A) Increase noise of compressor
- B) Reduce capacity of compressor
- C) Reduce noise of compressor
- D) Allow liquid to enter into compressor

**42.** How to change the direction of rotation in 3 Phase induction motor?

- A) Change the winding only
- B) Change all phase
- C) Change any two phase
- D) Change neutral

**43.** Which component rejects the maximum heat to ambient air in refrigerator?

- A) Condenser
- B) Expansion valve
- C) Evaporator
- D) Compressor

**44.** Which evaporator is known as extended surface evaporator?

- A) Finned evaporator
- B) Bare tube evaporator
- C) Evaporator tubes
- D) Coiled stake evaporator

**45.** Which material is used for making disc in energy meter?

- A) Aluminium
- B) Copper
- C) Zinc
- D) Brass

**46.** Which type of switch is used to control the room air temperature in split AC?

- A) Over load protector
- B) Manual switch
- C) Thermal relay
- D) Thermostat switch

**47.** What is the purpose of air filter?

- A) Circulate air
- B) Improve performance
- C) Ensure clean air
- D) Cool air

**48.** Which tool is used for trimming the edges of a sheet metal cylinder?

- A) Straight snips
- B) Tube cutter
- C) Bent snips
- D) Scissors

**49.** Why the temperatures of inlet and outlet water in shell and tube condenser are recorded in log sheet?

- A) Study about the plant
- B) Checking the hardness of water
- C) Fix descaling time for condenser
- D) Judge quality of water

**50.** What is the comfortable range of relative humidity (RH) for human beings?

- A) 60 +/- 5%
- B) 30 +/- 5%
- C) 50 +/- 5%
- D) 40 +/- 5%

**51.** What is the purpose of accumulator in a refrigerator?

- A) Prevents surging of refrigerant
- B) Improves oil circulation
- C) Avoids hunting of refrigerant
- D) Prevents liquid flood back to compressor

**52.** What is starving in extinguishing the fire?

- A) Clearing the hazards
- B) Stop the supply of oxygen
- C) Adding fuel
- D) Removal of fuel

**53.** Which part of the working refrigeration system, the non condensable accumulate?

- A) Top of condenser
- B) Evaporator outlet
- C) Compressor crankcase
- D) Accumulator

**54.** Which tool is used for service valve operations in package AC?

- A) Screw spanner
- B) Ratchet key/wrench
- C) Double end spanner
- D) Cutting pliers

55. What is the reason for no cooling in a frost free refrigerator?

- A) High watt Cabinet bulb
- B) Open door switch
- C) Defective fan motor
- D) Defective timer

56. What is the cause of high condensing pressure in water cooled condenser?

- A) Lack of lubrication
- B) Low load on evaporator
- C) Damage condenser fan
- D) Defective cooling water pump

57. What is the minimum temperature difference in water required between inlet and outlet of water cooled condenser?

- A) 20 Degree Centigrade
- B) 10 Degree Centigrade
- C) 5 Degree Centigrade
- D) 15 Degree Centigrade

58. Which type of compressor is used as a vacuum pump?

- A) Reciprocating
- B) Centrifugal
- C) Rotary
- D) Scroll

59. Which gas is used for flushing blocked capillary tube?

- A) Hydrogen
- B) Moist air
- C) Dry nitrogen
- D) Aqua ammonia

60. What is the physical state of ammonia at condenser inlet in vapour absorption system?

- A) Semi solid
- B) Vapour
- C) Solid
- D) Liquid

61. How the indoor unit acts during heating cycle of heat pump?

- A) Expansion device
- B) Electrical heater
- C) Condenser
- D) Evaporator

62. Which fan motor speed is used with outdoor unit in split AC?

- A) Five speed
- B) Double speed
- C) Triple speed
- D) Single speed

63. What is the advantage of glass fibre ducting?

- A) Heavy weight
- B) Economical
- C) Self insulating
- D) High heat transfer

64. Which type of fan motor is used in window air conditioner?

- A) Single phase double end shaft motor
- B) Single phase single shaft motor
- C) Three phase double end shaft motor
- D) Three phase single shaft motor

65. What is the velocity range of air circulated in car AC?

- A) 7 - 9 m / sec
- B) 5 - 7 m / sec
- C) 2 - 3 m / sec
- D) 9 - 10 m / sec

66. Where the liquid refrigerant is stored in multi split Air-conditioner during pump down operation?

- A) Liquid receiver
- B) Accumulator
- C) Condenser
- D) Evaporator

67. Why the miscibility of refrigerant and oil is preferred in car AC?

- A) Lubricate the heat exchangers
- B) Lubricate the clutch assembly
- C) Lubricate the moving parts of TEV
- D) Circulate oil back to compressor

68. What are the passive components used in electronic circuits?

- A) Transformers and semiconductors
- B) Resistors, capacitors and inductors
- C) Transistors, diodes and SCRs
- D) Semi conductors and transistors

69. How the pressure drop of refrigerant flow is minimised during installation of indoor and outdoor units in ductable split AC?

- A) Pipe lines with more joints
- B) Install units as far as possible
- C) System pipes with minimum bends
- D) With more horizontal distance

70. Which international agency standardises the numbering system for identifying refrigerants?

- A) ASHRAE
- B) DW142
- C) ISO
- D) ISHRAE

71. What is the human body temperature in Degree Centigrade?

- A) 27 Degree Centigrade
- B) 17 Degree Centigrade
- C) 37 Degree Centigrade
- D) 47 Degree Centigrade

72. Which type of AC system is operated by VRV system?

- A) Central plant AC
- B) Package AC
- C) Indirect ACs
- D) Multizone split ACs

73. 1 Which control device is used to maintain the room air temperature?

- A) Thermostat
- B) Selector switch
- C) OLP
- D) Relay

74. Which type of 1-? motor has high starting torque?

- A) Induction start and induction run  
B) Capacitor start and capacitor run  
C) Resistance start induction run  
D) Permanent capacitor

75. What is the equivalent of one microfarad in farad?

- A) 10<sup>-6</sup> farad  
B) 10<sup>-12</sup> farad  
C) 10<sup>-9</sup> farad  
D) 10<sup>-3</sup> farad

76. Which is eliminated from the system in vacuumising process?

- A) Temperature  
B) Pressure  
C) Moisture  
D) Humidity

77. Why the crankcase heater is energised for compressor during the shut down period of AC plant?

- A) Prevent oil foaming on restarting compressor  
B) Decrease viscosity of crankcase oil  
C) Increase miscibility of oil with refrigerant  
D) Increase viscosity of crankcase oil

78. Which control opens the compressor motor circuit in the event of continuous overload?

- A) Spring loaded relief valve  
B) Fusible plug  
C) Bimetal strip  
D) Thermostat

79. Which winding has low resistance in resistance start induction run motor?

- A) Common winding  
B) Starting winding  
C) Auxiliary winding  
D) Running winding

80. What is the reason for sweating of water on drier filter?

- A) Dust accumulated on condenser  
B) Air filter blocked  
C) Partially choked drier filter  
D) More air flows through the evaporator

81. What is the reason for switching contacts get carbonised in package AC electrical wiring?

- A) Humidity  
B) Quality is bad  
C) Loose connections  
D) Too tight connection contacts

82. What is the use of a starting capacitor in single phase induction motor?

- A) Decrease starting torque  
B) Disconnect starting winding  
C) Improve power factor  
D) Increase starting torque

83. What is the differential of control switch if it cuts in at 29 kg/cm<sup>2</sup> and cuts out at 34 kg/cm<sup>2</sup>?

- A) 5 kg / cm<sup>2</sup>  
B) 15 kg / cm<sup>2</sup>  
C) 20 kg / cm<sup>2</sup>  
D) 10 kg / cm<sup>2</sup>

84. How many fan motors are used in split AC?

- A) Three  
B) Two  
C) Four  
D) Five

85. What is the cylinder colour code of R 22 refrigerant?

- A) Orange  
B) Orchid  
C) Green  
D) White

86. What is the area of room cooled by 1ton window air conditioner?

- A) 2000 sq.ft  
B) 5000 sq.ft  
C) 1000 sq.ft  
D) 3000 sq.ft

87. Which valve is used in capacity control system employing hot gas bypass?

- A) Reversing valve  
B) Relief valve  
C) Solenoid valve  
D) Safety valve

88. Which components are used in AHU of central AC plant?

- A) Air filter, Compressor, Condenser  
B) Condenser, Fan, Compressor  
C) Blower, Air filter, Evaporator  
D) Evaporator, Compressor, Blower

89. Why frost free model refrigerator takes less freezing time of products?

- A) High temperature setting  
B) Forced air circulation  
C) Low temperature setting  
D) Natural air circulation

90. What is the advantage of using flux in brazing?

- A) Prevent Oxidation  
B) Over heating  
C) Melting tubes  
D) Chemical reaction

91. Which device controls the air flow in ducting system?

- A) Damper  
B) Register  
C) Diffuser  
D) Grille

92. Which is a positive displacement compressor?

- A) Water pump  
B) Centrifugal compressor  
C) Oil pump  
D) Scroll compressor

93. Which is the common terminal while Ohm meter reads AB = 10 Ohm, AC = 15 Ohm and BC = 25 Ohm if the motor terminals are A, B and C?

- A) Earth Terminal  
B) Terminal A  
C) Terminal B  
D) Terminal C

94. What is the category of R 290 refrigerant?

- A) Halocarbons
- B) Hydrocarbons
- C) Azeotropes
- D) Organic compounds

95. What is the effect of improper alignment of machines while installing a central AC plant?

- A) Less power consumption
- B) Silent operation
- C) Excess of wear and tear
- D) Less noise and vibration

96. Which component is connected in series with bimetal thermo in a frost free refrigerator?

- A) Blower
- B) Defrost heater
- C) Cabinet bulb
- D) Door switch

97. How electrons flow in a battery circuit?

- A) Negative polarity to positive polarity
- B) Phase to earth

C) Positive to negative polarity

D) Phase to neutral

98. Which refrigerant is used in domestic refrigerator?

- A) R 407 c
- B) R 134 a
- C) R 32
- D) R 22

99. Why the U trap is provided in water drain line of AHU?

- A) Ensure free flow of drain water
- B) Block dust from outside
- C) Prevent entry of foul smell
- D) Allows air from outside

100. What is the effect of increased out door temperature in car AC?

- A) Compressor runs more time
- B) Performance remains the same
- C) Compressor runs less time
- D) Performance increases