

Duration: 60 Mins

Total Marks: 100

ID: ITISKILL1717KB

Student Name: _____ Roll No: _____

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

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

2. Which instrument is used to measure atmospheric pressure?

- A) Manometer B) Barometer
C) Hydrometer D) Hygrometer

3. Which refrigerant is used in domestic refrigerator?

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

4. Which domestic system uses automatic defrost?

- A) Window air - conditioner B) Frost free refrigerator
C) Conventional refrigerator D) Split air - conditioner

5. Which is the point angle of a twist drill used for zinc alloy?

- A) 125 Degree B) 118 Degree
C) 100 Degree D) 90 Degree

6. Which two tubes act as heat exchanger in a refrigerator?

- A) Discharge and suction tube B) Capillary and suction tube
C) Discharge and capillary tube D) Suction and charging tube

7. What is bottom dead centre in reciprocating compressor cylinder?

- A) The piston stops in cylinder at top B) The piston moves up from the point of cylinder
C) The piston starts in cylinder at top D) The piston moves down from the point of cylinder

8. Which refrigerant is used in vapour compression cycle?

- A) Primary refrigerant B) Secondary refrigerant
C) Brine solution D) Water

9. Which process decreases the dry bulb temperature of air at constant specific humidity?

- A) Sensible cooling of air B) Dehumidification of air
C) Humidification of air D) Sensible heating of air

10. Which component switches ON/OFF the starting winding in RSIR motor?

- A) Thermostat B) OLP
C) Capacitor D) Relay

11. Which tool is used for tightening the odd size bolts and nuts?

- A) Nose pliers B) Socket set
C) Adjustable spanner D) Ring spanner

12. What is the ratio of oxygen to acetylene in neutral flame for brazing?

- A) 01:01 B) 02:01
C) 01:02 D) 01:03

13. Which property limits the flow of electrons in an electrical circuit?

- A) Resistance B) Conductance
C) Current D) Voltage

14. What is the cause for refrigerator door gap at closing position?

- A) Either side gap more B) Uneven condenser level
C) Uneven floor level D) Either side gap less

15. What is the cooling capacity of 0.5 TR in BTU / hr?

- A) 24000 B) 6000
C) 12000 D) 18000

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

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

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

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

18. What is the value of starting capacitor used for 1.5TR capacity window air conditioner?

- A) 150 to 160 MFD B) 40 to 60 MFD
C) 130 to 150 MFD D) 80 to 100 MFD

19. How the capacity of refrigerator is expressed?

- A) Litres B) Weightage
C) Tonnage D) Wattage

20. Which type of AC system is capable of heating or cooling in different zones simultaneously?

- A) VRV AC system B) Package AC
C) Central plant AC D) VAV AC system

21. Which device is used to exhaust the room air in window AC?

- A) Damper B) Air filter
C) Air washer D) Filter drier

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

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

23. What is the reason for no cooling effect in car AC?

- A) Refrigerant leaked B) Moisture in the system
C) Excess of refrigerant D) Air in the system

24. What is starving in extinguishing the fire?

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

25. What tonnage capacity of split AC unit uses 150/200 MFD starting capacitor?

- A) 1 TR B) 1.5 TR
C) 2.0 TR D) 2.5 TR

26. What is the ampere setting for 3.5 mm diameter electrode in welding?

- A) 60 Ampere B) 110 Ampere
C) 50 Ampere D) 100 Ampere

27. What are the causes for blockage in capillary tube?

- A) Moisture and wax from oil B) Solid particles
C) Non condensable gases D) Over charging of refrigerant

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

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

29. What is the minimum quantity of fresh air needed per person in comfort AC?

- A) 2 to 3.5 cfm B) 5 to 7.5 cfm
C) 4 to 5.5 cfm D) 3 to 4.5 cfm

30. What is the rate of doing work?

- A) Velocity B) Power
C) Duty D) Force

31. Which is the numerical designation of ammonia refrigerant?

- A) 700 + (Molecular mass of NH₃) = 720 B) 700 + (Molecular mass of NH₃) = 719
C) 700 + (Molecular mass of NH₃) = 717 D) 700 + (Molecular mass of NH₃) = 718

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

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

33. Which valve helps to attend mechanical faults without wasting the gas in split AC?

- A) Service valve B) Expansion valve
C) Float valve D) Gate valve

34. Which is increased by the fins of condenser tubes in window air conditioner?

- A) Power consumption B) Refrigerant flow rate
C) Heat transfer rate D) Discharge pressure

35. Why the water flow switch is bypassed to test the HP control switch in package AC?

- A) Lower the head pressure in compressor B) Stopping the unit immediately
C) Raise the oil pressure more D) Make the unit not to trip

36. Which bearing is used in blower motor of indoor unit in ductable split air conditioner?

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

37. How the zeotropic refrigerant is taken from the cylinder for charging it into RAC system?

- A) Liquid state
- C) Vapour state

- B) Vapour and liquid
- D) Super heated vapour

- A) High boiling point
- C) High freezing point

- B) High specific volume
- D) High latent heat value

38. What is the advantage of universal colour coding of refrigerant cylinders?

- A) Prevent corrosion on cylinder
- C) Make good appearance
- B) Easy to identify
- D) Provide extra strength to cylinder

39. How the reciprocal of air density is mentioned in psychrometric chart?

- A) Specific heat ratio
- C) Sensible heat ratio
- B) Specific volume per unit mass
- D) Specific gravity

40. What is the value of running capacitor used for 1.5 TR window air conditioner?

- A) 36 MFD
- C) 40 MFD
- B) 100 MFD
- D) 80 MFD

41. Which part of window AC removes dust particles from the room air?

- A) Dehydrator
- C) Air filter
- B) Filter drier
- D) Strainer

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

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

43. What is the reason for filter drier sweating in refrigerator?

- A) Nitrogen in the system
- C) Oxygen in the system
- B) Moisture in the system
- D) Oil in the system

44. What is the revolving part of induction motor?

- A) Relay
- C) Stator
- B) Rotor
- D) Winding

45. Which safety control is electrically connected in series with magnetic clutch of compressor in car AC?

- A) TEV
- C) AEV
- B) HPC
- D) EEV

46. How many speed selection is used with indoor air blower in ductable multi split AC?

- A) Three - speed
- C) One - speed
- B) Two - speed
- D) Four - speed

47. Which property is desirable for an ideal refrigerant?

48. Why HCFC 22 refrigerant is recycled?

- A) Make use of the same lubricant
- C) Reduce ODP and GWP of environment
- B) Decrease the cost of production
- D) Increase the efficiency of RAC systems

49. What is the minimum distance to be maintained between the wall and refrigerator condenser?

- A) 22 cm
- C) 13 cm
- B) 15 cm
- D) 18 cm

50. Why evaporator of air conditioner has more fins per inch?

- A) Increase the water dripping
- C) Decrease the air circulation
- B) Produce more ice
- D) Increase the air contact

51. What is the flame temperature range of oxy acetylene gas flame?

- A) 1800Degree Centigrade to 2200Degree Centigrade
- C) 3100Degree Centigrade to 3300Degree Centigrade
- B) 2700Degree Centigrade to 2800Degree Centigrade
- D) 2400Degree Centigrade to 2700Degree Centigrade

52. Which part of electronic filter removes tobacco smoke and odours?

- A) Pre filter
- C) Electrodes
- B) Charcoal filter
- D) Static electric field

53. What is the preventive remedy for scale in water cooled condenser tubes in package AC?

- A) Minimise water flow
- C) Increase water pressure
- B) Improve water quality
- D) Install flow meter

54. Which expansion valve is suitable for constant load operation?

- A) Automatic expansion valve
- C) Relief valve
- B) Low side float valve
- D) King valve

55. What is done after gas charging and pinching the process tube in refrigerator?

- A) Brazing
- C) Charging
- B) Swaging
- D) Flaring

56. What is the function of starting capacitor in CSIR motor?

- A) Gives initial torque
- B) Gives running torque

- | | | | |
|--------------------------|-------------------------------|---|---|
| C) Corrects power factor | D) Improves energy efficiency | C) Avoids cross contamination of refrigerants | D) Increases quantity of refrigerant charge |
|--------------------------|-------------------------------|---|---|

57. Which device ensures correct flow of chilled water supply in chiller AC plant?

- | | |
|--------------------------|-------------------------|
| A) Pressure relief valve | B) Leaf switch |
| C) Sight glass | D) Level master control |

58. Which factor determines the current setting during welding?

- | | |
|--------------------------|---------------------|
| A) Diameter of electrode | B) Types of joint |
| C) Length of electrode | D) Position of weld |

59. What is the differential of control switch if it cuts in at 29 kg/cm² and cuts out at 34 kg/cm²?

- | | |
|----------------------------|----------------------------|
| A) 20 kg / cm ² | B) 5 kg / cm ² |
| C) 10 kg / cm ² | D) 15 kg / cm ² |

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

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

61. What is the preventive maintenance of cooling tower sump?

- | | |
|---------------------|-------------------------|
| A) Add HCL to water | B) Add bleaching powder |
| C) Remove sludge | D) Flush with water |

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

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

63. Which material is used to clean oil and grease on the floor?

- | | |
|-----------------|-------------|
| A) Cotton waste | B) Saw dust |
| C) Air | D) Water |

64. What is the fault in compressor motor if there is electrical continuity between the dome and motor terminal?

- | | |
|------------------------------|-------------------------|
| A) Grounded compressor motor | B) Shorted run winding |
| C) Shorted start winding | D) Open common terminal |

65. Why the service port fitting size differs in HFC-134a from CFC-12 car AC system?

- | | |
|---|---|
| A) Decreases quantity of refrigerant charge | B) Improves performance of car air conditioners |
|---|---|

66. What is the name of heat carrying medium in vapour compression system?

- | | |
|----------------|----------|
| A) Refrigerant | B) Water |
| C) Liquid | D) Air |

67. Why the AHU outlet is connected to supply duct with canvas material?

- | | |
|-------------------------|--|
| A) Quick replacement | B) Low installation cost |
| C) Low maintenance cost | D) Avoid vibration of air transmission |

68. Where the normally closed contacts are internally connected in voltage relay?

- | | |
|-------------------|-------------------|
| A) Across 1 and 5 | B) Across 2 and 5 |
| C) Across 1 and 2 | D) Across 2 and 4 |

69. What are the three pressure actuated electrical control switches connected in series in an automobile air-conditioner?

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|---|--|
| A) LPC, HPC and Blower-switch | B) Thermostat, Electromagnetic clutch, on-off control |
| C) Thermostat, Low-pressure control and high pressure control | D) Thermostat, Thermostatic expansion valve, Blower-switch |

70. Which types of heat are involved in ventilation and infiltration of air to AC space?

- | | |
|----------------------------------|-------------------------------------|
| A) Sensible heat and latent heat | B) Radiant heat and specific heat |
| C) Sensible heat and solar heat | D) Latent heat of water-vapour only |

71. Which valve is first closed to start the pump down operation in central AC plant?

- | | |
|--------------------------|----------------------------|
| A) Receiver inlet valve | B) Discharge service valve |
| C) Receiver outlet valve | D) Suction service valve |

72. What is the tool used for holding hot metals?

- | | |
|---------------|--------------|
| A) Bench vice | B) Pipe vice |
| C) Spanner | D) Tongs |

73. Which medium is used to extinguish Class - A fire?

- | | |
|--------------------|---------------|
| A) CO ₂ | B) Water |
| C) Foam | D) Dry powder |

74. Which lubricant oil is used in swash plate of R 134a compressor?

- | | |
|----------------|-------------|
| A) Mineral oil | B) Servo 20 |
|----------------|-------------|

C) POE

D) SAE - 40

75. What is the cause of bubbles in liquid line at sight glass in car AC system?

A) No refrigerant charge

B) Correct charge of refrigerant

C) Over charge of refrigerant D) Shortage of refrigerant

76. Which sheet is used to check the tightness of door gasket of a refrigerator?

A) Copper

B) Plastic

C) Zinc

D) Rubber

77. What is the formula to find out the synchronous speed of induction motor?

A) $N_s = (150P/f)$

B) $N_s = (120f/P)$

C) $N_s = (120P/f)$

D) $N_s = (150f/P)$

78. What is the effect of residual acid particles after descaling the shell and tube condenser in industrial AC plant?

A) Reduce heat transfer

B) Corrode the tubes

C) Increase algae growth

D) Block the strainer

79. Which type of starter is used for motors in chiller AC plants?

A) Magnetic

B) Electromagnetic

C) Pneumatic

D) Hydraulic

80. What is the category of R 407c refrigerant?

A) Inorganic

B) Zeotropes

C) Organic

D) Azeotropes

81. Which winding is made of thick wire in single phase induction motor?

A) Additional

B) Running

C) Starting

D) Auxiliary

82. Which design data is used for indoor air in summer air conditioning?

A) 22 DegreeC +/- 1 DegreeC and 40% RH

B) 24 DegreeC +/- 1 DegreeC and 50% RH

C) 24 DegreeC +/- 1 DegreeC and 50% RH

D) 20 DegreeC +/- 1 DegreeC and 30% RH

83. Which component secures the hose with regulator union in gas welding set?

A) Iron chain

B) Steel wire

C) Hose clamp

D) Fibre clip

84. How much heat is released from 2 HP motor if 746 W motor releases 3 K Cal/hr?

A) 5 K Cal/hr

B) 3 K Cal/hr

C) 6 K Cal/hr

D) 4 K Cal/hr

85. Which type of fan blade is used with indoor unit?

A) Vane|

B) Blower

C) Axial

D) Guide vane

86. Which material is used to make the evaporator of refrigerator?

A) Galvanised iron

B) Aluminium

C) Stainless steel

D) Brass

87. Which type of expansion device is used in frost free refrigerator?

A) Float valve

B) Automatic expansion valve

C) Thermostatic expansion valve

D) Capillary tube

88. What is the advantage of recycling R 134a refrigerant?

A) Reduce global warming

B) Minimise air pollution

C) Increase water pollution

D) Increase ozone depletion

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

A) Thrust bearing

B) Open ball bearing

C) Sleeve bearing

D) Ball bearing

90. Which parameters in log sheet indicate the air blocking in ducts?

A) Temperatures in chilled water system

B) Liquid line temperature

C) All grille temperatures

D) Inlet and outlet temperature of chillier

91. What is the desirable property of POE lubricant?

A) Toxic gas produced during brazing

B) Hygroscopic

C) Miscible with HFCs

D) Forms acid with moisture

92. What is the colour of acetylene hose pipe in oxy - acetylene welding set?

A) Red

B) Black

C) Maroon

D) Green

93. Which psychrometer uses battery operated small fan?

A) Sling psychrometer

B) Exhausting psychrometer

C) Aspirating psychrometer

D) Laboratory psychrometer

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

- A) Liquid receiver
- C) Accumulator

- B) Evaporator
- D) Condenser

95. Which suction line pressure ensures that the compressor is to be stopped during pump down operation?

- A) (- 0.5 kg/cm²)
- B) 5 kg/cm²
- C) 0.5 kg/cm²
- D) 3 kg/cm²

96. Which type of short cycling is avoided by the design of blower housing in car AC?

- A) Air
- B) Lubricant
- C) Moisture
- D) Oil

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

- A) Brass brush
- B) Wire brush

- C) Fin comb

- D) Blower

98. Which device meters the amount of refrigerant entering the evaporator in window AC?

- A) Finned tube condenser
- B) Capillary tube
- C) Accumulator
- D) Heat exchanger

99. Which type of rotor is used in split phase induction motor?

- A) Squirrel cage
- B) Eccentric
- C) Wound coil
- D) Permanent magnet

100. What is the advantage of multi split air conditioners?

- A) One outdoor unit for one indoor unit
- B) Several outdoor units for one indoor unit
- C) One outdoor unit for several indoor units
- D) two outdoor units for one indoor unit