

Duration: 120 Mins

Total Marks: 100

ID: ITISKILL8981MV

Student Name: _____ Roll No: _____

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

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

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

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

3. Why the stainless-steel metal is used to make evaporator in ice plant?

- A) Non corrosive B) Galvanic
C) Erosive D) Reactive

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

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

5. Which instrument is used for measuring heat?

- A) Anemometer B) Ammeter
C) Thermometer D) Calorimeter

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

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

7. Which is sensed by TEV in response to heat load variation?

- A) Evaporating temperature B) Sub cool in liquid line
C) Discharge temperature D) Super heat in suction line

8. How the difference between the synchronous speed and the actual rotor speed is specified?

- A) Trip B) Lag
C) Lead D) Slip

9. What is the equivalent of one micron in millimeter?

- A) 0.1 mm B) 0.001 mm
C) 0.01 mm D) 0.0001 mm

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

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

11. What is indicated by the bubbles in car AC's sight glass?

- A) Pressure of air B) Shortage of refrigerant
C) Poor compression D) Excess of refrigerant

12. Which cooling medium is used to cool the motor of a hermetic reciprocating compressor in AC?

- A) Suction vapour B) Water
C) Discharge vapour D) Liquid refrigerant

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

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

14. What is the storage capacity of oxygen cylinder?

- A) 5 m³ B) 7 m³
C) 3 m³ D) 6 m³

15. Which thermistor's resistance increases if the temperature is decreased?

- A) LDR B) PTC
C) NTC D) VDR

16. Why the top of dome is hot in a scroll compressor?

- A) Suction super heat is less B) Undercharged system
C) Suction gas not cooled D) Discharge plenum is at top

17. What parameters are checked if the uneven cooling prevails at different rooms in a chiller plant?

- A) Compressor current drawn B) Cooling tower fan motor ampere

C) Condenser water pump ampere	D) Chilled water pump current drawn
18. Which type of evaporator is used in window air conditioner?	
A) Fins and tube	B) Bare tube
C) Fins and plate	D) Plate and tube
19. Why the temperatures of inlet and outlet water in shell and tube condenser are recorded in log sheet?	
A) Judge quality of water	B) Study about the plant
C) Fix descaling time for condenser	D) Checking the hardness of water
20. 1 Which control device is used to maintain the room air temperature?	
A) Thermostat	B) Relay
C) OLP	D) Selector switch
21. Which material is used for making ICs?	
A) Silicon	B) Platinum
C) Mild steel	D) Carbon
22. What is the cause of high condensing pressure in water cooled condenser?	
A) Defective cooling water pump	B) Low load on evaporator
C) Lack of lubrication	D) Damage condenser fan
23. 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
24. Which control opens the compressor motor circuit in the event of continuous overload?	
A) Fusible plug	B) Spring loaded relief valve
C) Bimetal strip	D) Thermostat
25. What is the cooling capacity for 1.5 Ton of ductable split air conditioner?	
A) 4000 Kcal/hr	B) 3500 Kcal/hr
C) 4500 Kcal/hr	D) 5000 Kcal/hr
26. What is the barometer reading at sea level in Hg column?	
A) 750 mm	B) 760 mm
C) 730 mm	D) 740 mm
27. Which winding is made of thick wire in single phase	

induction motor?

A) Starting	B) Additional
C) Auxiliary	D) Running
28. What are the passive components used in electronic circuits?	
A) Transistors, diodes and SCRs	B) Resistors, capacitors and inductors
C) Semi conductors and transistors	D) Transformers and semiconductors
29. How the refrigerants are classified based on heat absorption by latent and sensible heat?	
A) Primary and secondary	B) Zeotropic and azeotropic
C) Halocarbons and hydrocarbons	D) Organic and inorganic
30. What are the causes for blockage in capillary tube?	
A) Over charging of refrigerant	B) Moisture and wax from oil
C) Solid particles	D) Non condensable gases
31. What is the atmospheric pressure at sea level?	
A) 1.3 Kg/cm ²	B) 1.5 Kg/cm ²
C) 1.033 kg/cm ²	D) 1.6 Kg/cm ²
32. Why the capacitor is tested inside a box or case?	
A) Explodes safely	B) Releases poisonous gas
C) Corrodes the test kit	D) Erodes the test kit
33. What is meant by total pressure in a duct?	
A) Static pressure + velocity pressure	B) Velocity pressure + suction pressure
C) Suction pressure + discharge pressure	D) Velocity pressure - static pressure
34. What is the total resistance if two resistors R1 and R2 are connected in series?	
A) (R1 - R2) Ohms	B) (R1 / R2) Ohms
C) (R1 + R2) Ohms	D) (R1 x R2) Ohms
35. What is the effect of increased out door temperature in car AC?	
A) Compressor runs less time	B) Performance remains the same
C) Performance increases	D) Compressor runs more time
36. Why the water flow switch is bypassed to test the HP control switch in package AC?	

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

37. What is the use of magnetic clutch in Car AC?

- | | |
|--|----------------------------------|
| A) Indicate liquid level in the compressor | B) Control ON/OFF for compressor |
| C) Indicate oil level in the compressor | D) Add oil in the system |

38. What type of heat is absorbed by primary refrigerant?

- | | |
|----------------|------------------|
| A) Latent heat | B) Sensible heat |
| C) Total heat | D) Specific heat |

39. What is the desirable property of POE lubricant?

- | | |
|--------------------------------------|-----------------------|
| A) Forms acid with moisture | B) Hygroscopic |
| C) Toxic gas produced during brazing | D) Miscible with HFCs |

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

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

41. What is starving in extinguishing the fire?

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

42. Where the air temperature is measured to check the performance of package AC?

- | | |
|-----------------|---------------------|
| A) Atmosphere | B) Condenser outlet |
| C) Blower inlet | D) Supply grille |

43. What is the minimum cross sectional area of the ducts used with bus AC?

- | | |
|-----------------------|-----------------------|
| A) 500 cm^2 | B) 600 cm^2 |
| C) 400 cm^2 | D) 700 cm^2 |

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

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

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

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

46. Which method of welding process is suitable to nonferrous dissimilar metals?

- | | |
|---------------------------------|-------------------------------|
| A) Ultrasonic method of welding | B) Brazing and bronze welding |
| C) Cold welding | D) Explosion welding |

47. Which law relates to voltage, current and resistance in an electrical circuit?

- | | |
|-----------------|------------------|
| A) Lenz s law | B) Ohm s law |
| C) Newton s law | D) Faraday s law |

48. Which capacitor is disconnected by relay in capacitor start and induction run motor?

- | | |
|--------------------------------------|-----------------------|
| A) Starting capacitor | B) Boosting capacitor |
| C) Power factor correction capacitor | D) Running capacitor |

49. What is the temperature maintained in the refrigerator freezer?

- | | |
|---------------------------|---------------------------|
| A) - 45 Degree Centigrade | B) - 65 Degree Centigrade |
| C) - 15 Degree Centigrade | D) 0 Degree Centigrade |

50. Which component is used in frost free refrigerator?

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

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

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

52. Which distribution system is absent in VRV operation compared to central AC plant?

- | | |
|-----------------------|---------------------|
| A) Interlocked wiring | B) Refrigerant flow |
| C) Refrigeration | D) Ducting system |

53. What is the load resistance in an electrical circuit, if current, $I = 2 \text{ amp}$ and supply, $V = 10 \text{ volt}$?

- | | |
|-----------|-----------|
| A) 4 Ohms | B) 2 Ohms |
| C) 5 Ohms | D) 3 Ohms |

54. What type of material is used to support the tubes on both sides of air cooled condenser?

- | | |
|---------------------------|---------------------|
| A) Copper sheets | B) Mild steel sheet |
| C) Galvanised iron sheets | D) Aluminium sheets |

55. What is the benefit of VRV system?

- | | |
|-------------------|-----------------------|
| A) Energy saving | B) Many controls |
| C) Bigger in size | D) Saving refrigerant |

56. What is the resistance level of start winding in a refrigerator s compressor motor?

- A) Zero resistance
C) Medium resistance

- B) High resistance
D) Low resistance

- A) 400 micron
C) 200 micron

- B) 300 micron
D) 500 micron

57. What is the effect of partially choked thermostatic expansion valve in central AC plant?

- A) Hot expansion valve
C) Iced condenser
- B) Frosted evaporator
D) Frosted expansion valve

58. How much is the maximum capacity of refrigerant to be filled in a returnable service cylinder?

- A) Up to 85%
C) Up to 90%
- B) Up to 80%
D) Up to 95%

59. What is the absolute pressure of gas cylinder if the gauge reads 15.3 p.s.i.g?

- A) 20 p.s.i.a
C) 10 p.s.i.a
- B) 30 p.s.i.a
D) 40 p.s.i.a

60. What is the reason for poor condensation in split AC?

- A) High ambient temperature
C) Condenser tube leaky
- B) Low ambient temperature
D) Blower motor failure

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

- A) POE
C) Mineral oil
- B) SAE - 40
D) Servo 20

62. Which winding has more inductance in refrigerator compressor motor?

- A) Common
C) Run
- B) Start
D) Start and common

63. What is the advantage of periodical cleaning of air filter?

- A) Decrease the cooling capacity
C) Increase the cooling capacity
- B) Increase the speed of fan motor
D) Decrease the volume of air handling

64. How many diodes are required for making a bridge rectifier circuit?

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

65. Which stabilizer capacity is used for 1 Ton window air conditioner?

- A) 5 KVA
C) 4 KVA
- B) 2 KVA
D) 3 KVA

66. Which level of vacuum is required before charging HFC 134a in car AC?

67. What is the method of converting AC to DC power supply with two diodes and a step down transformer?

- A) Full wave rectifier
C) Half wave rectifier
- B) Bridge rectifier
D) Medium wave rectifier

68. What is the cause for noisy fan motor in outdoor unit of split AC?

- A) Shaft struck
C) Blade bent
- B) Motor Burnt
D) Bearing worn out

69. What is the purpose of evacuating the system before gas charging?

- A) Flush oil particles
C) Remove moisture and non-condensable
- B) Charge refrigerant
D) Remove refrigerant

70. Which horizontal distance is preferred between indoor and outdoor units in ductable split AC installation?

- A) 25 meters
C) 20 meters
- B) 12 meters
D) 15 meters

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

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

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

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

73. How to safe guard the hands while handling glass wool?

- A) Using mask
C) Wearing gloves
- B) Using shoes
D) Wearing goggles

74. What is the boiling point of pure water in centigrade scale?

- A) 32 Degree Centigrade
C) 100 Degree Centigrade
- B) 212 Degree Centigrade
D) 0 Degree Centigrade

75. Which material is used to make ducts in split AC?

- A) Fibre
C) GI sheet
- B) Thermocole
D) Wood

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

- A) Zinc
B) Rubber

C) Plastic

D) Copper

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

A) Thermistor

B) Thyristor

C) Resistor

D) Transistor

78. What is the purpose of gland packing in water line valves of chiller AC plant?

A) Smooth handling of valve B) Reduce valve noise

C) Control water flow D) Prevent leakage

79. What is the purpose of using the water cooled condenser in industrial AC plant?

A) Absorb less heat from system

B) Reject more heat to water

C) Increase the temperature D) Reduce the pressure

80. Which operating condition opens the HPC control switch in car AC?

A) If evaporator pressure exceeds safe limit

B) If there is continuous air velocity

C) If there is continuous rain outside D) If condenser pressure exceeds safe limit

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

A) Brass

B) Stainless steel

C) Aluminium

D) Galvanised iron

82. What is the advantage of air washer compared to cooling coil of AHU?

A) Can be used in small systems

B) No eliminators are required

C) Faster heat transfer D) Quick dehumidification

83. Why the LP cut out control is bypassed electrically before pump down operation?

A) Prevent liquid entry to compressor

B) To lower the suction pressure close to 0.5 kg/cm²

C) Increase current of the compressor motor

D) Avoid oil foaming

84. Where the filter drier is installed in window AC refrigerant circuit?

A) Service line

B) Suction line

C) Discharge line

D) Liquid line

85. How much minimum gap is left on either side of the refrigerator from the wall during installation?

A) 5 cm

B) 25 cm

C) 15 cm

D) 10 cm

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

A) Less power consumption

B) Less noise and vibration

C) Excess of wear and tear

D) Silent operation

87. Which parameter of heater element is increased in OLP due to hot compressor dome?

A) Resistance

B) Magnetic field

C) Voltage

D) Capacitance

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

A) Increase the air contact

B) Decrease the air circulation

C) Increase the water dripping

D) Produce more ice

89. What is the effect of pressure drop at the inlet of the evaporator?

A) Boiling of oil

B) Freezing of liquid

C) Freezing of liquid refrigerant

D) Flashing of liquid refrigerant

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

A) Crankcase heater

B) Compressor starting

C) Thermostat

D) Blower motor

91. Which is the numerical designation of ammonia refrigerant?

A) 700 + (Molecular mass of NH₃) = 718

B) 700 + (Molecular mass of NH₃) = 717

C) 700 + (Molecular mass of NH₃) = 719

D) 700 + (Molecular mass of NH₃) = 720

92. Which electrical control cuts off heating element in frost free refrigerator?

A) Relay

B) Thermostat

C) Timer

D) Bimetal thermo

93. Which device protects the compressor motor from drawing more current?

A) Thermostat

B) Relay

C) Door switch

D) OLP

94. Which material is used for making service valve?

A) Brass

B) Cast iron

C) Stainless steel

D) Aluminium

95. Which is indicated by the arrow mark on filter drier

component?

- | | |
|----------------------------------|--|
| A) Flow direction of refrigerant | B) Flow direction of air |
| C) Position of capillary tube | D) Arrangement of desiccant and filter |

96. Which refrigerant blend is highly flammable?

- | | |
|---------|--------|
| A) HCFC | B) HFC |
| C) CFC | D) HC |

97. What is the reverse break down voltage range of zener diode?

- | | |
|--------------------|-----------------|
| A) 0.5 to 1 volt | B) 1 to 3 volt |
| C) 0.1 to 0.5 volt | D) 3 to 18 volt |

98. Which instrument is used to measure atmospheric pressure?

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

99. Where the filter drier is installed in a car AC system?

- | | |
|-------------------|-----------------|
| A) Discharge line | B) Service line |
| C) Liquid line | D) Suction line |

100. Which components maintain the pressure difference in RAC system?

- | | |
|------------------------------------|---------------------------|
| A) Compressor and expansion device | B) Receiver and condenser |
| C) Evaporator and motor | D) Condenser and filter |