

Duration: 60 Mins

Total Marks: 250

ID: ITISKILL9792BX

Student Name: _____	Roll No: _____
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1. Which valve is used for gas charging and pressure checking in central AC plants?

- A) Service valve B) Solenoid valve
C) Safety valve D) Non return valve

2. What is the unit of heat in M.K.S system?

- A) K.W (Kilo Watt) B) B.T.U (British thermal unit)
C) K.Cal (Kilo Calorie) D) KV (Kilo Volt)

3. What is the working condition of component during defrost cycle in frost free refrigerator?

- A) Compressor is not running B) Relay activated
C) Thermostat cuts off D) Evaporator fan motor is running

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

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

5. How the ability of a conductor is called if it induces the voltage in the same conductor?

- A) Self inductance B) Conductance
C) Capacitance D) Resistance

6. Which tool is used for skinning the insulation of cables and cleaning the wire surface?

- A) Firmer chisel B) Electrician's knife
C) Combination pliers D) Hacksaw

7. What is the reason for Compressor does not start ?

- A) Defective oscillation motor B) Defective OLP
C) Defective fan motor D) Defective fresh air damper

8. What is the benefit of VRV system?

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

9. What is the purpose of accumulator in a refrigerator?

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

10. Which colour is used for painting condenser coil?

- A) Red B) Blue
C) Black D) Green

11. Which is the effective method for refrigerant recovery?

- A) Use of system's compressor B) Push pull recovery
C) Condensing unit D) Charge migration

12. Which tool is used for bending, seaming and forming of sheet metal?

- A) Stakes B) Bench vice
C) Shear D) Hand vice

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

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

14. What is the revolving part of induction motor?

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

15. Where does the ozone layer exist in atmosphere?

- A) Exosphere B) Mesosphere
C) Ionosphere D) Stratosphere

16. What is the physical state of refrigerant at the outlet of condenser in vapour compression cycle?

- A) High pressure liquid B) High pressure vapour
C) Low pressure vapour D) Low pressure liquid

17. What is the method of starting a 3 phase slip ring induction motor?

- A) With running capacitor B) With starting relay
C) Adding resistance to rotor winding D) Using starting capacitor

18. Which instrument is used to identify the terminals of a compressor motor?

- A) Anemometer B) Ohm meter
C) Ammeter D) Voltmeter

19. Which is the green house gas?

- A) Oxygen of atmospheric air B) Helium of atmospheric air
C) Neon of atmospheric air D) Chlorofluoro carbon in air

20. What is the category of R 502 refrigerant?

- A) Halocarbon B) Azeotropes
C) Organic compounds D) Hydrocarbon

21. Which component belongs to indoor unit of split AC?

- A) Condenser B) Compressor
C) Drier D) Evaporator

22. 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

23. Which two components do the compressor function in vapour absorption system?

- A) Generator and separator B) Generator and evaporator
C) Generator and absorber D) Generator and condenser

24. 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

25. What is the remedy for defective heating element in a frost free refrigerator?

- A) Repair heater B) Readjust the heater
C) Reuse the heater and over load protector D) Replace heater and bimetal thermo

26. Which type of insulating material is used for making ice box to cool beverages?

- A) Fibre glass B) Glass wool
C) Tar felt D) Thermocole

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

- A) Thermostat B) Timer
C) Bimetal thermo D) Relay

28. Which refrigerant is used with VRF AC system?

- A) R 11 B) R 410A
C) R 12 D) R 502

29. Which control switch is connected in series with magnetic clutch in Car AC wiring?

- A) Thermostat control B) Piston pin
C) Thermostatic expansion valve D) Automatic expansion valve

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

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

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

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

32. What is the reason for the compressor motor burn out in a window air conditioner?

- A) Defective blower B) Defective fan capacitor
C) Defective OLP D) Defective fan motor

33. What is the reason for excessive frost on evaporator coil in window AC?

- A) Blower rotating at higher speed B) More air circulation in evaporator
C) Evaporator fins not blocked by dust D) Air filter blocked completely

34. Why the idler pulley is used in belt driven car AC?

- A) Increase the feathering B) Decrease the belt tension
C) Decrease the belt vibration D) Increase the belt tension

35. Which instrument is used to measure pressure on both high and low side of the system?

- A) Instrument manifold B) Gauge manifold
C) Pipe manifold D) Pressure manifold

36. Where the refrigerant is stored in split AC during pump down operation?

- A) Condenser B) Evaporator
C) Compressor D) Accumulator

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

- A) Suction line
- C) Discharge line

- B) Liquid line
- D) Service line

- C) Vapour

- D) Liquid

38. Which component is replaced to prevent air entering the refrigerator cabinet?

- A) Door gasket
- C) Door hinges

- B) Thermostat
- D) Door paint

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

- A) Reduce capacity of compressor
- C) Allow liquid to enter into compressor

- B) Reduce noise of compressor
- D) Increase noise of compressor

40. What is the purpose of operating the fan motor first and then the compressor motor in Air conditioners?

- A) Stop the high starting current by both motors

- B) Minimise the noise of motors

- C) Cool the coils first by fan

- D) Cool the compressor by fan

41. Which type of evaporator is used in frost free refrigerator?

- A) Wire mesh
- C) Plate type

- B) Shell and tube
- D) Finned tube

42. Which part of tube cutter is used for removing the burrs from copper tubes?

- A) Cutter
- C) Roller

- B) Reamer
- D) Bender

43. What is the purpose of relay used in window air conditioner?

- A) Disconnect the running capacitor
- C) Disconnect the fan capacitor

- B) Disconnect the starting capacitor
- D) Disconnect the winding

44. What is the temperature set in thermostat that stops the compressor motor?

- A) Cut out
- C) Cut in

- B) Differential
- D) Range

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

- A) Ducting system
- C) Refrigeration

- B) Refrigerant flow
- D) Interlocked wiring

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

- A) Solid

- B) Semi solid

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

- A) Copper
- C) Brass

- B) Aluminium
- D) Zinc

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

- A) 0.1 to 0.5 volt
- C) 1 to 3 volt

- B) 3 to 18 volt
- D) 0.5 to 1 volt

49. Which is disconnected by centrifugal switch is RSIR motor?

- A) Running capacitor
- C) Starting winding

- B) Common winding
- D) Running winding

50. Which type of diode is used for communication circuits?

- A) Rectifier diode
- C) Zener diode

- B) Signal diode
- D) Switching diode

51. What is the material composition of a Tin man s solder?

- A) 50% Tin 50% Bronze
- C) 50% Tin 50% Zinc

- B) 50% Zinc 50% lead
- D) 50% Tin 50% lead

52. Where the dehydrator is installed in a refrigeration system?

- A) Liquid line
- C) Capillary line

- B) Discharge line
- D) Suction line

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

- A) Voltage
- C) Resistance

- B) Current
- D) Conductance

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

- A) OLP
- C) Door switch

- B) Relay
- D) Thermostat

55. What is the unit of electric current?

- A) Volt
- C) Ohm

- B) Ampere
- D) Farad

56. How the refrigerants are classified based on heat absorption by latent and sensible heat?

- A) Organic and inorganic
- C) Halocarbons and hydrocarbons

- B) Primary and secondary
- D) Zeotropic and azeotropic

57. What is the effect of bimetal thermo sticks in ON position in frost free refrigerator?

- A) Accumulation of frost
- B) Poor cooling
- C) More cooling
- D) No cooling

58. What is the maximum capacity of 3 phase squirrel cage induction motor used with direct on line (DOL) starter?

- A) 20 HP
- B) 15 HP
- C) 10 HP
- D) 5 HP

59. What is the rotor speed with respect to stator field speed in an induction motor?

- A) More than the fly wheel
- B) Equal to the stator speed
- C) More than the stator speed
- D) Less than the stator speed

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

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

61. What is the reason for poor compression?

- A) Lapped valve plate and reed seat
- B) Good lubrication on the moving parts
- C) Less clearance volume
- D) Scratches on the piston surface

62. 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) Multiply 700 to molecular mass of compound
- D) Subtracting 700 from molecular mass of compound

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

- A) Zeotropes
- B) Organic
- C) Inorganic
- D) Azeotropes

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

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

65. What is the cooling capacity of 1 TR in K Cal / hr?

- A) 4000
- B) 5000
- C) 6000
- D) 3000

66. What is the process of accumulation of ice on the surface of evaporator?

- A) Evacuating
- B) Frosting

- C) Defrosting
- D) Melting of frost

67. What is the angle of the tip of centre punch?

- A) 30 Degree
- B) 60 Degree
- C) 120 Degree
- D) 90 Degree

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

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

69. Which domestic system uses automatic defrost?

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

70. What is the rate of doing work?

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

71. Which device equalizes the system pressure in frost free refrigerator?

- A) Capillary tube
- B) Compressor
- C) Condenser
- D) Evaporator

72. Which tool is used for bending long sheet metal?

- A) Shear
- B) Folding bar
- C) Bench vice
- D) Hand vice

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

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

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

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

75. How long the filter drier unit is used in car AC?

- A) 3 years
- B) 1 year
- C) 2 years
- D) 4 years

76. Which tool is used for descaling the condenser tubes in shell and tube condenser?

- A) Steel brush
- B) Brass brush
- C) Sponge brush
- D) Teflon fibre brush

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

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

78. What is the remedy for broken bimetal thermo in a frost free refrigerator?

- A) Readjust the bimetal thermo B) Reuse the bimetal thermo
C) Repair the bimetal thermo D) Replace the bimetal thermo

79. Which type of compressor is used for domestic refrigerator?

- A) Open type compressor B) Centrifugal compressor
C) Hermetic compressor D) Semi sealed compressor

80. Which motor is used to drive the condenser fan of outdoor unit in ductable split air conditioner?

- A) Capacitor start capacitor run motor B) Permanent split motor (PSC)
C) Shaded pole motor D) Three phase induction motor

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

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

82. Which property is desirable for an ideal refrigerant?

- A) High freezing point B) High specific volume
C) High latent heat value D) High boiling point

83. How the level of heat in a substance is expressed?

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

84. Which thermodynamic process the temperature is kept constant?

- A) Constant volume process B) Constant pressure process
C) Isobaric process D) Isothermal process

85. What is the category of R 290 refrigerant?

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

86. Which is a positive displacement compressor?

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

87. Which extinguishes the fire on electrical equipment?

- A) Water B) Halon
C) Foam D) Oil

88. Which motor has the least starting torque?

- A) CSR B) CSIR
C) RSIR D) PSC

89. Which device maintains a constant DC output?

- A) Load regulators B) Voltage regulators
C) Rectifier circuits D) Current limiters

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

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

91. Which gas is used for pressure testing the compressor dome?

- A) Air B) Refrigerant
C) Nitrogen D) Oxygen

92. What is the name of process that changes the used refrigerant to new product?

- A) Reclaim B) Recover
C) Manufacture D) Recycle

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

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

94. Which component is used in frost free refrigerator?

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

95. Which is used to clean the condenser fins of a refrigerator?

- A) Painting brush B) Soap solution
C) Fin comb D) Diluted acid

96. Which type of conductor is used for bus bars?

- A) Thermal conductor B) Stranded conductor
C) Solid conductor D) Standard conductor

97. Which version of motors are used in ductless multisplit system?

- A) Variable frequency drive B) Bioptional drive
C) Constant frequency drive D) Trioptional drive

98. What type of material is used to support the tubes on

both sides of air cooled condenser?

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

99. What is the reason for swash plate compressor failure in car AC?

- A) Thermostat not working
- B) Oil level is medium
- C) Refrigerant charge normal
- D) Oil level is low

100. Which insulating material is poured as liquid?

- A) Poly Urethane Foam (PUF)
- B) Wood Shave
- C) Glass Wool
- D) Cork Board

101. Which set of components are used in FCU?

- A) Air filter, blower, condenser
- B) Compressor, fan, condenser
- C) Air filter, cooling coil, blower motor
- D) Cooling coil, condenser, fan motor

102. What is the physical condition of refrigerant in hermetic dome of rotary compressor?

- A) HP Vapour
- B) LP Vapour
- C) LP Liquid
- D) HP Liquid

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

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

104. Where the refrigerant vapour is compressed in scroll compressor?

- A) Fixed and reciprocating scroll
- B) Eccentric and cylinder
- C) Between fixed and orbiting scrolls
- D) Crank and connecting rod

105. Which type of evaporator is used in window air conditioner?

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

106. Which type of condenser is directly placed on water spray and air?

- A) Shell and tube condenser
- B) Water cooled condenser
- C) Air cooled condenser
- D) Evaporative condenser

107. What is the benefit of preventive maintenance in AC plant?

- A) Decrease refrigerant charge
- B) Prevent plant's break down
- C) Reduce water flow
- D) Increase running cost

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

- A) 5 cm
- B) 10 cm
- C) 15 cm
- D) 25 cm

109. What is the desirable property of POE lubricant?

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

110. Which causes the clogged orifice in TEV of car AC system?

- A) Moisture
- B) Nitrogen
- C) Non condensable gases
- D) Oxygen

111. What is the cause of reduced supply air throw though air filter is clean in window AC?

- A) Dust accumulated in the condenser
- B) No dust accumulated in the evaporator
- C) Frost accumulated in the evaporator
- D) No frost in the evaporator

112. Which part connects the piston with small end of connecting rod in a reciprocating compressor?

- A) Piston sleeve
- B) Piston bolt
- C) Piston pin
- D) Piston rings

113. Which type of drier filter is suitable for HFC refrigerants?

- A) Activated carbon
- B) Activated alumina
- C) Silica gel
- D) Molecular sieve type

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

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

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

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

116. Which gas is used to flush out the coils of air cooled condenser?

- A) kaksr
- B) Pure dry air
- C) Dry nitrogen
- D) Oxygen

117. Which material is used for making zener diode?

- A) Silicon
- C) Lead

- B) Titanium
- D) Platinum

- A) Capillary chocking
- C) Less charge of refrigerant

- B) Over charge of refrigerant
- D) Air filter blocked

118. What is the name of active component used in electronic circuit?

- A) DIAC
- C) Transistor

- B) TRIAC
- D) SCR

119. What is the advantage of sealed system compared to open type system?

- A) Any refrigerant can be used
- C) Cylinder lubrication is easier

- B) Mechanical efficiency is greater
- D) No shaft seal is required

120. Which device switches ON/OFF the car AC compressor?

- A) Magnetic clutch
- C) Crank shaft

- B) Blower unit
- D) Rotor winding

121. What is the reason for Very high condenser temperature in a window air conditioner?

- A) More air flows into the condenser
- C) Water splashes condenser

- B) Dust accumulated in the condenser fins
- D) Fan motor working in good condition

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

- A) Defective fan motor
- C) Under charge of refrigerant

- B) Defective timer
- D) Over charge of refrigerant

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

- A) Automatic expansion valve
- C) King valve

- B) Relief valve
- D) Low side float valve

124. Which is the numerical designation of ammonia refrigerant?

- A) 700 + (Molecular mass of NH₃) = 719
- C) 700 + (Molecular mass of NH₃) = 718

- B) 700 + (Molecular mass of NH₃) = 717
- D) 700 + (Molecular mass of NH₃) = 720

125. Which type of compressor is used in window air conditioner?

- A) Sealed type
- C) Swash plate

- B) Belt drive
- D) Open type

126. Why frost accumulates in window AC evaporator?

127. Which valve is used to release the non condensable gases from AC plant?

- A) Solenoid valve
- C) Check valve

- B) Purge valve
- D) Service valve

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

- A) Air filter blocked
- C) Partially chocked drier filter

- B) More air flows through the evaporator
- D) Dust accumulated on condenser

129. Which power supply has the fixed polarity?

- A) Signal voltage
- C) Signal ripples

- B) Direct current
- D) Alternating current

130. Which gas is universally taken as the basic reference for GWP?

- A) SO₂
- C) AIR

- B) CO₂
- D) NH₃

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

- A) Total heat
- C) Sensible heat

- B) Specific heat
- D) Latent heat

132. What is the cut out temperature of bimetal thermo in frost free refrigerator?

- A) 20 Degree Centigrade
- C) 5 Degree Centigrade

- B) 10 Degree Centigrade
- D) 25 Degree Centigrade

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

- A) Evacuate the system deeply
- C) Clean the evaporator fins

- B) Over gas charge in the system
- D) Clean the condenser fins

134. Which compressor is used only in central AC systems?

- A) Centrifugal
- C) Scroll

- B) Screw
- D) Rotary

135. Which application uses the digital ICs?

- A) Tuned circuits
- C) Voltage regulator

- B) Amplifier
- D) Logic gates

136. Which semiconductor material is used to make diodes?

- A) Steel
- C) Aluminium

- B) Copper
- D) Silicon

137. Which instrument is used for measuring heat?

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

138. Which refrigerant is used in vapour compression cycle?

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

139. What is the ozone depleting potential of R 134a Refrigerant?

- A) 1
- B) 3
- C) 0
- D) 2

140. Which position is safe for storing refrigerant cylinder?

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

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

- A) To lower the suction pressure close to 0.5 kg/cm²
- B) Increase current of the compressor motor
- C) Avoid oil foaming
- D) Prevent liquid entry to compressor

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

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

143. Which component controls the thermostat and defrost heater in frost free refrigerator?

- A) Relay
- B) Defrost timer
- C) OLP
- D) Thermoheater

144. What is the effect on defective thermostat sensor in split AC?

- A) Unit consumes less power
- B) Relay malfunctions
- C) AC unit runs continuously
- D) Increases super heat

145. Which component is used as a switching device in electronic circuit?

- A) SCR
- B) Capacitor
- C) Zener diode
- D) Diode

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

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

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

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

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

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

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

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

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

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

151. 1 Which control device is used to maintain the room air temperature?

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

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

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

153. Which component is turned off while defrost heater is energised?

- A) Cabinet bulb
- B) Evaporator fan
- C) Thermostat sensor
- D) Over load protector

154. Which material is used to avoid oxidation between aluminium conductor and the terminal?

- A) Grease
- B) Kerosene
- C) Petrol
- D) Shellac

155. Which condition is maintained for refrigerant in high side of vapour compression system?

- A) Below its freezing temperature
- B) Above its freezing temperature
- C) Above its critical temperature
- D) Below its critical temperature

156. What is the barometer reading at sea level in Hg column?

- A) 740 mm
- B) 760 mm

C) 750 mm

D) 730 mm

157. What are the active components used in electronic circuits?

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

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

- | | |
|-----------------------------------|-----------------------|
| A) Freezing of liquid refrigerant | B) Boiling of oil |
| C) Flashing of liquid refrigerant | D) Freezing of liquid |

159. What is the effect of pouring water on electrodes resistance in earth pit?

- | | |
|-----------------|--------------|
| A) Increases | B) Decreases |
| C) Remains same | D) Equalises |

160. Why universal numbering system is adopted for different refrigerants?

- | | |
|--|---------------------------------|
| A) Identifying the refrigerant's names | B) Fixing the drier combination |
| C) Mixing the lubricant combination | D) Identify the systems |

161. What is the expansion of HVAC?

- | | |
|--|---|
| A) Heavy Vehicle Air Conditioning | B) Heating, Ventilation Automatic Control |
| C) Heating, Ventilation and Air Conditioning | D) Heating, Vibration, Auto Correction |

162. Which relay is used in capacitor start, capacitor run (CSR) compressor motor?

- | | |
|------------------|-------------------|
| A) Current relay | B) Voltage relay |
| C) Thermal relay | D) Amperage relay |

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

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

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

- | | |
|---|---|
| A) All grille temperatures | B) Temperatures in chilled water system |
| C) Inlet and outlet temperature of chillier | D) Liquid line temperature |

165. Which valve is first closed to start the pump down

operation in central AC plant?

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

166. Which electronic component is the voltage regulator?

- | | |
|----------------|---------------|
| A) Zener diode | B) Diac |
| C) Triac | D) Transistor |

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

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

168. What is the unit of capacitance?

- | | |
|------------|-----------|
| A) Volt | B) Ampere |
| C) Coulomb | D) Farad |

169. Which joint is made in either single or multi - strand conductors?

- | | |
|------------------------|-------------------|
| A) Western union joint | B) Rat tail joint |
| C) Britannia joint | D) Scarfed joint |

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

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

171. Which material is used for making ICs?

- | | |
|---------------|-------------|
| A) Silicon | B) Carbon |
| C) Mild steel | D) Platinum |

172. Which movement of plunger energises the start winding in relay operation?

- | | |
|----------------------|--------------------|
| A) Horizontally left | B) Vertically up |
| C) Bottom side | D) Vertically down |

173. Which law is related to the constant PV at constant T?

- | | |
|-----------------|------------------|
| A) Renaults law | B) Pascal s law |
| C) Boyles law | D) Charles s law |

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

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

175. Which speed is recommended for checking optimum performance in car AC?

- | | |
|-------------|-------------|
| A) 4600 rpm | B) 2600 rpm |
| C) 1600 rpm | D) 3600 rpm |

176. What is the name of the caliper having one leg with an adjustable divider point and other leg is bent?

- A) Inside Caliper
- B) Jenny Caliper
- C) Spring joint caliper
- D) Outside caliper

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

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

178. How pressure drop is achieved in capillary tube of refrigeration cycle?

- A) The friction between refrigerant and tube
- B) The friction between piston and cylinder
- C) The friction between belt and pulley
- D) The friction between refrigerant and oil

179. What is the total resistance if two resistors R1 and R2 are connected in series?

- A) $(R1 + R2)$ Ohms
- B) $(R1 / R2)$ Ohms
- C) $(R1 \times R2)$ Ohms
- D) $(R1 - R2)$ Ohms

180. What is the cause of oil foaming in compressor crankcase at the time of starting?

- A) Defective oil heater/circuit
- B) Poor condensation
- C) Damaged oil separator
- D) Excess oil in crankcase

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

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

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

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

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

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

184. Which method of refrigeration system is adopted in frost free refrigerator?

- A) Vapour compression
- B) Evacuating
- C) Vapour absorption
- D) Water vapour

185. What is the effect on system performance if the AC system is at undercharged condition?

- A) Excess cooling
- B) Compressor over loading
- C) Compressor trips by HP cut out
- D) Poor cooling

186. What is the effect of moist air present inside the hermetic system?

- A) Capacity of compressor will increase
- B) Increase the life of compressor
- C) Less wear and tear in compressor
- D) Harmful to the compressor and motor

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

- A) 10-12 farad
- B) 10-6 farad
- C) 10-3 farad
- D) 10-9 farad

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

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

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

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

190. What is the advantage of using capillary tube as an expansion device?

- A) Complicate design
- B) Volume balancing is easy
- C) Temperature balancing is easy
- D) Pressure balancing is easy

191. Which file is used for filing wood?

- A) Single cut file
- B) Rasp cut file
- C) Double cut file
- D) Smooth file

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

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

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

- A) Vane|
- B) Axial
- C) Blower
- D) Guide vane

194. Which safety device is used for compressor motor in window air conditioner?

- A) Relay
- B) Running capacitor
- C) Over load protector
- D) Starting capacitor

195. What is the use of capacitor in PSC operated induction motor?

- A) Cancel the starting torque
- B) Decrease the power factor
- C) Improve the power factor
- D) Decrease the starting torque

196. 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

197. Where the manually defrosted water is stored in refrigerator?

- A) Top of the freezer
- B) Bottom of the evaporator
- C) Tray on top of the compressor
- D) Bottom of the condenser

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

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

199. Which method is used to connect the swaged joint in copper tubes?

- A) Silver brazing
- B) TIG welding
- C) Fusion welding
- D) Lead soldering

200. What is the equivalent absolute scale for centigrade?

- A) Fahrenheit
- B) Celsius
- C) Rankine
- D) Kelvin

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

- A) Float valve
- B) Thermostatic expansion valve
- C) Automatic expansion valve
- D) Capillary tube

202. What is the condition of compressor motor if Ohm meter reads infinity across common and start terminals?

- A) Starting winding shorted
- B) Running winding shorted
- C) Starting winding open
- D) Running winding open

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

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

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

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

205. Which evaporator is known as extended surface evaporator?

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

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

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

207. Which is indicated by the arrow mark on filter drier component?

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

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

- A) Rubber
- B) Plastic
- C) Copper
- D) Zinc

209. Which compressor dome handles high pressure and high temperature vapour?

- A) Semi hermetic reciprocating compressor
- B) Hermetic rotary compressor
- C) Open type reciprocating compressor
- D) Hermetic reciprocating compressor

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

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

211. What is the least count of a metric micrometer?

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

212. What is effect of compression process on refrigerant vapour?

- A) Cool the vapour above saturation
- B) Increase the pressure and temperature
- C) Heat the vapour below saturation
- D) Decrease the pressure and temperature

213. What is the supply voltage if a current of 2 ampere flows through 10 Ohm resistor in a circuit?

- A) 20 Volt
- B) 55 Volt
- C) 45 Volt
- D) 65 Volt

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

- A) $N_s = (120f/P)$
- B) $N_s = (150f/P)$

C) Ns=(150P/f)

D) Ns=(120P/f)

215. What is the unit of electrical energy?

A) Volt

B) Ampere

C) Kilo watt hour

D) Watt

216. How electrons flow in a battery circuit?

A) Phase to earth

B) Phase to neutral

C) Positive to negative polarity

D) Negative polarity to positive polarity

217. What is the desiccant used in dehydrator of hydrocarbon charged RAC unit?

A) Calcium chloride

B) Ammonia

C) Silica gel

D) Sulphur dioxide

218. What is the load resistance in an electrical circuit, if current, I = 2 amp and supply, V = 10 volt?

A) 2 Ohms

B) 4 Ohms

C) 3 Ohms

D) 5 Ohms

219. Which process is done to remove the oil and other impurities from the condenser tubes?

A) Purging

B) Evacuation

C) Pressurising

D) Flushing

220. Which factors produce work?

A) Time and distance

B) Force and distance

C) Force and power

D) Force and time

221. Which device equalizes the pressure between low and high side of split AC during ?OFF? cycle?

A) Discharge tube

B) Suction tube

C) Copper tube

D) Capillary tube

222. Which movement of the scroll compresses the low pressure vapour in scroll compressor?

A) Orbital

B) Centrifugal

C) Reciprocating

D) Rotating

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

A) 18000

B) 24000

C) 12000

D) 6000

224. What is top dead centre in reciprocating compressor cylinder?

A) The piston moves down from the point of cylinder

B) The piston moves up from the point of cylinder

C) The piston starts in cylinder at bottom

D) The piston stops in cylinder at bottom

225. Which refrigerant is inactive to ozone layer?

A) R 22

B) R 13

C) R 12

D) R 134a

226. How the capacity of refrigerator is expressed?

A) Weightage

B) Wattage

C) Litres

D) Tonnage

227. Why CFC 12 system is replaced by HFC 134a system in car AC?

A) Increase ODP

B) GWP becomes zero

C) ODP becomes zero

D) Increase GWP

228. What is the expansion of PMV used in VRV system?

A) Phase Modulate Valve

B) Pass Modulate Valve

C) Pulse Modulating Valve

D) Prime Mover Valve

229. What is the melting temperature of silver brazing rod?

A) 1250 Degree F

B) 1200 Degree F

C) 1120 Degree F

D) 1300 Degree F

230. 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

231. Which is used to connect the rotor bars in 3phase squirrel cage induction motor?

A) Welded

B) Nut and bolt

C) End ring

D) Screw

232. What is the name of electronic circuit?

A) Half wave rectifier

B) Quarter wave rectifier

C) Bridge rectifier

D) Full wave rectifier

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

A) Discharge vapour

B) Water

C) Liquid refrigerant

D) Suction vapour

234. Which component defrosts in frost free refrigerator?

A) Capillary tube

B) Thermostat

C) Bulb

D) Heater

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

A) Increase the air contact

B) Decrease the air circulation

C) Produce more ice

D) Increase the water dripping

A) -76

B) -14.7

C) -760

D) -10.33

236. Where the thermal bulb is fixed in frost free refrigerator?

A) Liquid line

B) Last coil of condenser

C) Last coil of evaporator

D) Discharge line

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

A) Central plant AC

B) Package AC

C) VAV AC system

D) VRV AC system

237. What is the reason for poor cooling effect in multi split air conditioner?

A) Good insulation

B) Efficient compressor

C) Proper condensation

D) Dirty air filter

245. Which parameter of power supply reduces the starting current in VFD motor?

A) Lower frequency operation

B) Increased supply voltage

C) Decreased resistance mode

D) Decreased power factor

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

A) Auxiliary winding

B) Running winding

C) Starting winding

D) Common winding

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

A) Power factor correction capacitor

B) Boosting capacitor

C) Running capacitor

D) Starting capacitor

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

A) Semi conductors and transistors

B) Transformers and semiconductors

C) Transistors, diodes and SCRs

D) Resistors, capacitors and inductors

247. Which type of insulation material is used in modern refrigerators?

A) Poly urethane foam

B) Thermocole

C) Glass wool

D) Saw dust

240. Which materials are used to make mallets?

A) Rubber, brass

B) Wood, brass

C) Wood, rubber

D) Wood, cast iron

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

A) Study about the plant

B) Judge quality of water

C) Checking the hardness of water

D) Fix descaling time for condenser

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

A) 4 KVA

B) 3 KVA

C) 2 KVA

D) 5 KVA

249. Why there is no frosting at the bottom only in plate coil evaporator used with refrigerator?

A) Excess of refrigerant

B) Shortage of refrigerant

C) Liquid in the coil

D) Oil present in the coil

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

A) 150 p.s.i.a

B) 160 p.s.i.a

C) 130 p.s.i.a

D) 140 p.s.i.a

250. Which application uses the capillary tube expansion device?

A) Commercial AC plants

B) Domestic RAC units

C) Industrial ice plants

D) Hospital IAQ systems

243. What is the value of absolute vacuum in millimeters of mercury?