

Duration: 60 Mins

Total Marks: 100

ID: ITISKILL62834P

Student Name: _____	Roll No: _____
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1. Which part connects the piston with small end of connecting rod in a reciprocating compressor?

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

- A) Series                            B) Starting  
C) Running                         D) Main

2. Which motor has the least starting torque?

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

10. 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) 130 p.s.i.a  
C) 140 p.s.i.a                      D) 160 p.s.i.a

3. What is the revolving part of induction motor?

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

11. 1 Which control device is used to maintain the room air temperature?

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

4. What is the capacity of compressor motor used in 1Ton window air conditioner?

- A) 0.50 HP                         B) 0.75 HP  
C) 0.95 HP                         D) 1.00 HP

12. Which thermodynamic process the temperature is kept constant?

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

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

- A) Disconnect the running capacitor    B) Disconnect the starting capacitor  
C) Disconnect the fan capacitor         D) Disconnect the winding capacitor

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

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

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

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

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

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

7. Which refrigerant is inactive to ozone layer?

- A) R 13                                B) R 12  
C) R 22                                D) R 134a

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

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

8. What is the equivalent absolute scale for centigrade?

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

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

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

9. Which winding is made of thin wire in single phase motor?

17. Which component controls the thermostat and defrost

heater in frost free refrigerator?

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

18. What is the effect of releasing HCFC refrigerants to atmosphere?

- A) Decreases TEWI
- B) Inactive to TEWI
- C) Decreases GWP and ODP
- D) Increases ODP and GWP

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

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

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

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

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

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

22. What is the desirable property of POE lubricant?

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

23. Which domestic system uses automatic defrost?

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

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

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

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

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

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

- A) Cylinder lubrication is easier
- B) Mechanical efficiency is greater
- C) No shaft seal is required
- D) Any refrigerant can be used

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

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

28. Which material is used for making fins of condenser in a window air conditioner?

- A) Cast iron
- B) Copper
- C) Aluminium
- D) Brass

29. Which is connected in series with start capacitor in motor circuit?

- A) Running Terminal
- B) Running winding
- C) Common terminal
- D) Starting winding

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

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

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

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

32. Which component actuates the defrost cycle in frost free refrigerator?

- A) Bimetal thermo
- B) Defrost heater
- C) Relay
- D) Timer

33. Which winding has high inductance value in CSR compressor motor?

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

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

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

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

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

36. Which component is used in frost free refrigerator?

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

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

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

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

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

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

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

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

- A) Sealed type
- B) Open type
- C) Belt drive
- D) Swash plate

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

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

42. Which factors produce work?

- A) Force and time
- B) Force and power
- C) Force and distance
- D) Time and distance

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

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

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

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

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

- A) Primary and secondary
- B) Halocarbons and hydrocarbons
- C) Zeotropic and azeotropic
- D) Organic and inorganic

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

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

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

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

48. 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

49. Which capacity of fan motor is used in 1Ton window air conditioner?

- A) 1/20 HP
- B) 1/16 HP
- C) 1/5 HP
- D) 1/10 HP

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

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

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

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

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

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

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

- A) Shell and tube
- B) Finned tube
- C) Plate type
- D) Wire mesh

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

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

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

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

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

- A) No capacitor is connected
- B) Run capacitor

C) Fan capacitor

D) Start capacitor

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

A) Solid rotor

B) Squirrel cage rotor

C) Laminated rotor

D) Shaded pole rotor

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

A) Evaporator fan motor is running

B) Thermostat cuts off

C) Compressor is not running

D) Relay activated

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

A) Cool the compressor by fan

B) Stop the high starting current by both motors

C) Cool the coils first by fan

D) Minimise the noise of motors

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

A) Flow direction of air

B) Position of capillary tube

C) Arrangement of desiccant and filter

D) Flow direction of refrigerant

61. Which is the green house gas?

A) Helium of atmospheric air

B) Chlorofluoro carbon in air

C) Neon of atmospheric air

D) Oxygen of atmospheric air

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

A) Orbital

B) Reciprocating

C) Centrifugal

D) Rotating

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

A) Vapour

B) Semi solid

C) Liquid

D) Solid

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

A) Plate and coil

B) Bare tube

C) Fins and tube

D) Plate and tube

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

A) Identifying the refrigerant's names

B) Identify the systems

C) Fixing the drier combination

D) Mixing the lubricant combination

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

A) More air flows into the condenser

B) Fan motor working in good condition

C) Water splashes condenser

D) Dust accumulated in the condenser fins

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

A) Evaporator and motor

B) Compressor and expansion device

C) Condenser and filter

D) Receiver and condenser

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

A) Decrease the pressure and temperature

B) Increase the pressure and temperature

C) Heat the vapour below saturation

D) Cool the vapour above saturation

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

A) Nut and bolt

B) End ring

C) Welded

D) Screw

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

A) Make good appearance

B) Easy to identify

C) Prevent corrosion on cylinder

D) Provide extra strength to cylinder

71. Which substance absorbs heat and directly changes its state from solid to vapour?

A) Primary refrigerants

B) Ice

C) Secondary refrigerants

D) Dry ice

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

A) Rubber

B) Zinc

C) Plastic

D) Copper

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

A) Mechanical refrigeration

B) Vapour absorption refrigeration

C) Vapour compression refrigeration

D) Jet refrigeration

74. Which position is safe for storing refrigerant cylinder?

- A) Horizontal
- C) Upside down

- B) Inclined
- D) Upright

- C) Potential energy

- D) Wind energy

75. How many hydrogen atoms are present in R 134a?

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

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

- A)  $NH_3$
- C) AIR
- B)  $SO_2$
- D)  $CO_2$

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

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

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

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

79. What is the effect of releasing HFC refrigerants to the atmosphere?

- A) Increase global warming potential
- C) Decrease green house effect
- B) Improve water pollution
- D) Increase ozone depleting potential

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

- A) 5 Degree Centigrade
- C) 10 Degree Centigrade
- B) 25 Degree Centigrade
- D) 20 Degree Centigrade

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

- A) Liquid line
- C) Discharge line
- B) Last coil of evaporator
- D) Last coil of condenser

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

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

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

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

84. What is the energy of a body by virtue of its position?

- A) Electrical energy
- B) Kinetic energy

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

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

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

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

87. What is the reason for poor compression?

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

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

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

89. Which property is desirable for an ideal refrigerant?

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

90. Which component defrosts in frost free refrigerator?

- A) Bulb
- C) Heater
- B) Thermostat
- D) Capillary tube

91. Where does the ozone layer exist in atmosphere?

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

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

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

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

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

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

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

95. What is the absolute zero temperature in degree centigrade?

- A) 100 Degree Centigrade    B) -273 Degree Centigrade  
C) 0 Degree Centigrade    D) 212 Degree Centigrade
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**96.** Which valve is closed during compression stroke in reciprocating compressor?

- A) Discharge valve    B) Liquid line valve  
C) Service valve    D) Suction valve
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**97.** What does the number 4 of R 134a indicate?

- A) Number of chlorine atoms    B) Number of hydrogen atoms  
C) Number of carbon atoms    D) Number of fluorine atoms
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**98.** How the difference between the synchronous speed and the actual rotor speed is specified?

- A) Trip    B) Lag  
C) Slip    D) Lead
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**99.** What is the cooling capacity of 1 TR in K Cal / hr?

- A) 3000    B) 5000  
C) 6000    D) 4000
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**100.** Which instrument is used to measure atmospheric pressure?

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