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Trinity ITI Udyavara

Answer Key

Duration: 60 Mins

Total Marks: 100

Q.ID: ITISKILL0252JC

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

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

Answer: A) 3 to 18 volt

2. Which factors produce work?

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

Answer: A) Force and distance

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

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

Answer: C) Capillary tube

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

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

Answer: D) The friction between refrigerant and tube

5. Which cooling medium is used to condense the refrigerant vapour in plate and tube condenser?

- A) Water B) Natural Air
C) Brine solution D) Forced Air

Answer: B) Natural Air

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

- A) Ammonia B) Calcium chloride
C) Sulphur dioxide D) Silica gel

Answer: D) Silica gel

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

- A) Saw dust B) Thermocole
C) Glass wool D) Poly urethane foam

Answer: D) Poly urethane foam

8. 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) Terminal B B) Earth Terminal
C) Terminal A D) Terminal C

Answer: C) Terminal A

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

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

Answer: B) Temperature

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

- A) 760 mm B) 740 mm
C) 750 mm D) 730 mm

Answer: A) 760 mm

11. Which power supply has the fixed polarity?

- A) Signal ripples B) Alternating current
C) Direct current D) Signal voltage

Answer: C) Direct current

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

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

Answer: D) Squirrel cage

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

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

Answer: A) Stranded conductor

14. 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

Answer: D) Flashing of liquid refrigerant

15. What is the physical change of refrigerant in evaporator?

- A) Solid to liquid B) Vapour to solid
C) Vapour to liquid D) Liquid to vapour

Answer: D) Liquid to vapour

16. Which component is connected in series with defrost heater in a frost free refrigerator?

- A) Door switch
- B) Bimetal thermo
- C) Heating element
- D) Cabinet bulb

Answer: B) Bimetal thermo

17. Which type of defrosting method is used in frost free refrigerator?

- A) Hot water defrosting
- B) Hot gas defrosting
- C) Manual defrosting
- D) Electric defrosting

Answer: D) Electric defrosting

18. Which evaporator is known as extended surface evaporator?

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

Answer: D) Finned evaporator

19. How many terminals are there in a Silicon Controlled Rectifier (SCR)?

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

Answer: B) Three

20. Which is the constant reference for the working of AEV?

- A) Oil temperature
- B) Volume expansion
- C) Suction pressure
- D) Discharge pressure

Answer: C) Suction pressure

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

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

Answer: C) Electrician's knife

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

- A) Defrosting
- B) Evacuating
- C) Melting of frost
- D) Frosting

Answer: D) Frosting

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

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

Answer: B) Dry nitrogen

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

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

Answer: A) Four

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

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

Answer: B) 5 Ohms

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

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

Answer: A) Grease

27. What is the equivalent absolute scale for centigrade?

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

Answer: C) Kelvin

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

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

Answer: A) Resistors, capacitors and inductors

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

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

Answer: A) Generator and absorber

30. 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

Answer: B) Capillary tube

31. What is the rate of doing work?

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

Answer: B) Power

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

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

Answer: B) Ohm s law

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

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

Answer: D) Capacitor start and capacitor run

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

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

Answer: D) Replace heater and bimetal thermo

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

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

Answer: C) Rat tail joint

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

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

Answer: D) Boyles law

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

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

Answer: B) K.Cal (Kilo Calorie)

38. Which semiconductor material is used to make diodes?

- | | |
|------------|--------------|
| A) Copper | B) Aluminium |
| C) Silicon | D) Steel |

Answer: C) Silicon

39. What is the unit of electric current?

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

Answer: B) Ampere

40. What is the use of dehydrator?

- | | |
|--------------------|-----------------------|
| A) Absorb oil | B) Absorb refrigerant |
| C) Absorb moisture | D) Absorb heat |

Answer: C) Absorb moisture

41. Which material is used for making zener diode?

- | | |
|-------------|-------------|
| A) Titanium | B) Lead |
| C) Silicon | D) Platinum |

Answer: C) Silicon

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

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

Answer: C) Voltage

43. Which electronic component is the voltage regulator?

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

Answer: D) Zener diode

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

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

Answer: A) Dry nitrogen

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

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

Answer: C) Molecular sieve type

46. Which type of evaporator is used in house hold refrigerator?

- | | |
|------------------------------|------------------------------|
| A) Shell and coil evaporator | B) Shell and tube evaporator |
| C) Plate evaporator | D) Tube in tube evaporator |

Answer: C) Plate evaporator

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

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

Answer: C) Starting winding open

48. What is the unit of capacitance?

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

Answer: C) Farad

49. Which application uses the capillary tube expansion device?

- | | |
|-------------------------|--------------------------|
| A) Commercial AC plants | B) Industrial ice plants |
| C) Hospital IAQ systems | D) Domestic RAC units |

Answer: D) Domestic RAC units

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

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

Answer: A) Defective fan motor

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

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

Answer: D) Prevents liquid flood back to compressor

52. Which instrument is used to measure atmospheric pressure?

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

Answer: C) Barometer

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

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

Answer: A) $(R1 + R2)$ Ohms

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

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

Answer: A) 100 Degree Centigrade

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

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

Answer: A) Defrost heater

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

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

Answer: C) Increase the air contact

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

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

Answer: A) Defrost timer

58. 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

Answer: A) Wire mesh

59. What is the process involved for converting AC to DC power supply?

- A) Rectification
- B) Convection
- C) Inversion
- D) Regulation

Answer: A) Rectification

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

- A) 1250 Degree F
- B) 1300 Degree F
- C) 1200 Degree F
- D) 1120 Degree F

Answer: D) 1120 Degree F

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

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

Answer: D) Automatic expansion valve

62. What is the unit of inductance?

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

Answer: C) Henry

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

- A) Excess of refrigerant
- B) Oil present in the coil
- C) Shortage of refrigerant
- D) Liquid in the coil

Answer: B) Oil present in the coil

64. What is the purpose of chemical spraying on finned condenser?

- A) Correct the bends in fins
- B) Blow the dust from the fins
- C) Remove the rust on the fins
- D) Flush out the condenser tubes

Answer: C) Remove the rust on the fins

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

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

Answer: B) Compressor and expansion device

66. Why frost accumulates in window AC evaporator?

- A) Over charge of refrigerant
- B) Less charge of refrigerant
- C) Capillary chocking
- D) Air filter blocked

Answer: D) Air filter blocked

67. How the maximum reverse voltage across the diode is termed in reverse biased condition?

- A) Ripple frequency
- B) Peak rectification voltage
- C) Diode voltage
- D) Peak inverse voltage

Answer: D) Peak inverse voltage

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

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

Answer: C) 5 HP

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

- A) Transistor
- B) TRIAC
- C) SCR
- D) DIAC

Answer: A) Transistor

70. Which application uses the digital ICs?

- A) Logic gates
- B) Amplifier
- C) Voltage regulator
- D) Tuned circuits

Answer: A) Logic gates

71. What is the unit of electrical energy?

- A) Ampere
- B) Kilo watt hour
- C) Watt
- D) Volt

Answer: C) Watt

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

- A) 0 Degree Centigrade
- B) 212 Degree Centigrade
- C) -273 Degree Centigrade
- D) 100 Degree Centigrade

Answer: C) -273 Degree Centigrade

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

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

Answer: B) The piston moves down from the point of cylinder

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

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

Answer: B) High pressure liquid

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

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

Answer: A) 15 cm

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

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

Answer: A) Vapour absorption refrigeration

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

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

Answer: B) Moisture and wax from oil

78. What is the atmospheric pressure at sea level?

- A) 1.3 Kg/cm²
- B) 1.6 Kg/cm²
- C) 1.5 Kg/cm²
- D) 1.033 kg/cm²

Answer: D) 1.033 kg/cm²

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

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

Answer: A) Aluminium

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

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

Answer: D) 20 Volt

81. What is the name of electronic circuit?

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

Answer: B) Bridge rectifier

82. Which is the constant operating condition of TEV?

- A) Evaporator pressure at its inlet
- B) Enthalpy at the evaporator outlet
- C) Entropy at the condenser outlet
- D) Super heat at suction line point

Answer: D) Super heat at suction line point

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

- A) Signal diode
- B) Rectifier diode
- C) Zener diode
- D) Switching diode

Answer: A) Signal diode

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

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

Answer: D) Defective timer

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

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

Answer: A) Running winding

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

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

Answer: C) Pressure balancing is easy

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

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

Answer: D) Replace the bimetal thermo

88. Why the supply air throw is decreased in window AC?

- A) Clean air filter
- B) Refrigerant leaks
- C) Normal RPM of fan motor
- D) Frost blocks air circulation

Answer: D) Frost blocks air circulation

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

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

Answer: C) Less than the stator speed

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

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

Answer: D) Decreases

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

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

Answer: D) Watt meter

92. How electrons flow in a battery circuit?

- A) Positive to negative polarity
- B) Negative polarity to positive polarity
- C) Phase to earth
- D) Phase to neutral

Answer: B) Negative polarity to positive polarity

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

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

Answer: C) Silver brazing

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

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

Answer: D) SCR

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

- A) Capillary line
- B) Discharge line
- C) Liquid line
- D) Suction line

Answer: C) Liquid line

96. Which colour is used for painting condenser coil?

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

Answer: B) Black

97. Which type of condenser is used in window Air conditioner?

- A) Evaporative
- B) Water cooled
- C) Forced convection
- D) Natural convection

Answer: C) Forced convection

98. Why the capillary tube is preferred as an expansion device?

- A) Expensive and more moving parts
- B) No system pressure equalising
- C) Inexpensive and has no moving parts
- D) Periodical servicing is required

Answer: C) Inexpensive and has no moving parts

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

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

Answer: A) Run

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

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

Answer: B) Increase the pressure and temperature