



RRB ALP 2024 CBT 2

Assistant Loco Pilot · CEN 01/2024 · CBT 2 · Refrigeration & AC Mechanic Trade · Part B
(Refrigeration & AC Mechanic) · Question Paper

English

All 4 Shifts (Sets) · Part B (Refrigeration & AC Mechanic) Section · Official Answer Key

About this Compilation

This booklet contains all 4 shift papers of the RRB ALP 2024 CBT 2 (Refrigeration & AC Mechanic) examination in English (Part B (Refrigeration & AC Mechanic) section only), with the correct option marked as per the official answer key.

✓ Correct option (highlighted green)

How to use

- Use the **Index** page to jump directly to any set (clickable).
- Questions appear section by section in the order of the paper, numbered 1 onward.
- Diagram and wide-table questions appear at full width at the end of their section.
- The correct answer is highlighted in green with a tick.

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02 May 2025
9:30 AM - 12:00 PM

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Set 4

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Part B (Refrigeration & AC Mechanic)

75 Questions • Answer Key

Q1 Part B (Refrigeration & AC Mechanic)

Which of the following parts of a thermostatic expansion valve transmits the diaphragm force to spring to control the flow?

A. Push rod and ball valve



B. Spring retainer

C. Body sealing gasket

D. Superheat spring

Q2 Part B (Refrigeration & AC Mechanic)

What is the primary reason for electrical injuries when a person comes in contact with electrical equipment?

A. Electrical equipment is not properly grounded.

B. Current flows through the body causing harm.



C. Devices are used for too long.

D. Electrical devices are too powerful.

Q3 Part B (Refrigeration & AC Mechanic)

In which of the following types of cooling towers are the eliminators fitted just below the fan and spray nozzles fitted just below the eliminator?

A. Natural draft cooling tower

B. Hyperbolic draft cooling tower

C. Induced draft cooling tower



D. Forced draft cooling tower

Q4 Part B (Refrigeration & AC Mechanic)

Which of the following components of a storage-type water cooler gives initial power for starting winding at the compressor needed and cuts off power supply at running?

A. Fan motor

B. Relay



C. Thermostat

D. Overload protector

Q5 Part B (Refrigeration & AC Mechanic)

Which of the following components of the flake ice machine is a vertically placed drum-shaped stainless-steel container, equipped with the rotating blade?

A. Condenser

B. Evaporator



C. Compressor

D. Tube ice generator

Q6 Part B (Refrigeration & AC Mechanic)

When measuring the resistance of a resistor using an ohmmeter, what does a reading of zero resistance indicate?

A. The resistor is functioning normally.

B. The resistor is open-circuited.

C. The resistor is short-circuited.



D. The ohmmeter is malfunctioning.

Q7 Part B (Refrigeration & AC Mechanic)

Which of the following is INCORRECT regarding the cleaning and care of split AC systems?

A. When removing and replacing the air filters, be sure to touch the heat exchanger



B. Before cleaning the AC, be sure to turn it off and disconnect the power supply cord

C. After washing, allow it to dry thoroughly in a shaded place

D. Be sure the intake grille is installed securely

Q8 Part B (Refrigeration & AC Mechanic)

In a refrigeration system, an electronic expansion valve is a _____.

A. device that meters or regulates the flow of liquid refrigerant to the evaporator



B. device used to measure the moisture content of the air

C. device used to store heat during normal operation of the cycle

D. device used to remove the frost by melting



Q9 Part B (Refrigeration & AC Mechanic)

In refrigeration and air conditioning systems, balance valves are also called the ____.

- ☒ A. circuit setter
- ☐ B. circuit breaker
- ☐ C. coil setter
- ☐ D. fan coil setter

Q10 Part B (Refrigeration & AC Mechanic)

What is the purpose of an emergency evacuation plan?

- ☒ A. To ensure safe and orderly evacuation during emergencies
- ☐ B. To avoid safety drills
- ☐ C. To increase productivity
- ☐ D. To allow workers to leave early

Q11 Part B (Refrigeration & AC Mechanic)

Which of the following electrical components is used in the refrigeration system to protect the compressor from abnormal operating condition?

- ☒ A. Overload protector
- ☐ B. Defrost heater
- ☐ C. Fan motor
- ☐ D. PTC relay

Q12 Part B (Refrigeration & AC Mechanic)

Which of the following vices consists of a handle and a small collet chuck at one end?

- ☐ A. Hand vice
- ☒ B. Pin vice
- ☐ C. Pipe vice
- ☐ D. Toolmaker's vice

Q13 Part B (Refrigeration & AC Mechanic)

Read the given statements carefully and select the correct option.

Statement 1: In frost-free refrigerator, evaporator fan and condenser fan produces uniform cooling.
Statement 2: In conventional type refrigerator, no fan is provided hence the cooling is not uniform cooling/freezing.

- ☐ A. Statement 2 is correct and Statement 1 is incorrect.
- ☐ B. Statement 1 is correct and Statement 2 is incorrect.
- ☐ C. Both Statement 1 and Statement 2 are incorrect.
- ☒ D. Both Statement 1 and Statement 2 are correct.

Q14 Part B (Refrigeration & AC Mechanic)

In an air-conditioning system, butterfly dampers and multiple vane dampers are ____.

- ☐ A. evaporators
- ☐ B. duct water-flow controls
- ☒ C. duct air-flow controls
- ☐ D. condensers

Q15 Part B (Refrigeration & AC Mechanic)

What is a key advantage of using MOSFETs in electronic circuits compared to other types of transistors?

- ☐ A. High frequency response
- ☒ B. High input impedance and low power consumption
- ☐ C. Ability to handle higher voltages and currents than BJTs
- ☐ D. Ability to amplify both AC and DC signals

Q16 Part B (Refrigeration & AC Mechanic)

Arrange the following steps in the correct order to draw an equilateral triangle with each side of 35 mm.

1. Join CA and CB.
2. Draw a line and mark AB 35 mm as the side of the triangle.
3. With radius AB and center A and B, draw arcs cutting at C.
4. ABC is the required triangle.

- ☒ A. 2, 3, 1, 4
- ☐ B. 1, 2, 4, 3
- ☐ C. 2, 1, 3, 4
- ☐ D. 3, 2, 1, 4

Q17 Part B (Refrigeration & AC Mechanic)

Match the components in Column A with those in Column B.

Column A	Column B
Thermometer (A)	Measuring solar intensity (P)
Pyrometer (B)	Measuring pressure (Q)
Barometer (C)	Measuring high temperatures (R)
Pyrometer (D)	Measuring ordinary temperatures (S)

- ☒ A. A-S, B-R, C-Q, D-P
- ☐ B. A-Q, B-R, C-S, D-P
- ☐ C. A-P, B-R, C-Q, D-S
- ☐ D. A-S, B-Q, C-R, D-P



Q18 Part B (Refrigeration & AC Mechanic)

Which of the following components of a walk-in cooler is required on freezers to prevent drain line freeze up?

- ☒ A. Drain line heater
- ☐ B. Condensate water evaporator
- ☐ C. Condenser unit rack
- ☐ D. Heat exchanger

Q19 Part B (Refrigeration & AC Mechanic)

Which of the following types of compressors has up to 10 cylinders and is most frequently used in car air-conditioning systems?

- ☒ A. Swash plate compressor
- ☐ B. Scroll type compressor
- ☐ C. Hermetic compressor
- ☐ D. Wobble plate compressor

Q20 Part B (Refrigeration & AC Mechanic)

In a velocity-time graph, the negative slope represents ____.

- ☒ A. retardation
- ☐ B. displacement
- ☐ C. acceleration
- ☐ D. distance

Q21 Part B (Refrigeration & AC Mechanic)

Which of the following statements is/are correct about a commercial refrigeration system?

Statement 1: Condenser water inlet picks up heat from the gas so that it condenses.
Statement 2: Condenser water outlet connects hot water to the cooling tower.

- ☐ A. Only statement 1 is correct.
- ☐ B. Neither statement 1 nor statement 2 is correct.
- ☐ C. Only statement 2 is correct.
- ☒ D. Both statement 1 and statement 2 are correct.

Q22 Part B (Refrigeration & AC Mechanic)

The liquid can get sub-cooled below the saturation temperature in the:

- ☐ A. evaporator
- ☐ B. compressor
- ☐ C. expander
- ☒ D. condenser

Q23 Part B (Refrigeration & AC Mechanic)

In Duct Insulation of Refrigeration and Air-Conditioning, EPDM stands for _____.

- ☐ A. Ethyl Propylene Dual Monomer
- ☐ B. Ethylene Propylene Diene Material
- ☒ C. Ethylene Propylene Diene Monomer
- ☐ D. Ethylene Polymer Diene Monomer

Q24 Part B (Refrigeration & AC Mechanic)

Which of the following hand-operated drilling machines is used for drilling small diameter holes up to 6 mm?

- ☐ A. Electric hand drill
- ☐ B. Ratchet drilling machine
- ☐ C. Breast drilling machine
- ☒ D. Bevel gear type drilling machine

Q25 Part B (Refrigeration & AC Mechanic)

If the current flowing through a conductor is 5 A and the resistance of the conductor is 10 ohms, what will be the voltage across the conductor, according to Ohm's Law?

- ☐ A. 15 V
- ☒ B. 50 V
- ☐ C. 5 V
- ☐ D. 10 V

Q26 Part B (Refrigeration & AC Mechanic)

_____ is the process of adding moisture to the air without affecting its dry bulb temperature.

- ☐ A. Isothermal process
- ☒ B. Humidification
- ☐ C. De-humidification
- ☐ D. Adiabatic process



Q27 Part B (Refrigeration & AC Mechanic)

Which of the following processes of maintaining central AC always follows the detailed instructions provided by equipment manufactures or system designers?

- A. Log sheets
- B. Starting procedure ✓
- C. Post start-up checks
- D. Pre-start-up checks

Q28 Part B (Refrigeration & AC Mechanic)

The low side component of the vapour compression refrigeration system, where the refrigerant absorbs heat by evaporating, is _____.

- A. compressor
- B. suction line ✓
- C. discharge line
- D. condenser

Q29 Part B (Refrigeration & AC Mechanic)

Which of the following factors is responsible for the maintenance of any desired temperature within an enclosed space even though the temperature of the outside air is above or below the desired room temperature?

- A. Temperature of air ✓
- B. Motion of air
- C. Humidity of air
- D. Purity of air

Q30 Part B (Refrigeration & AC Mechanic)

_____ is the space where heat exchange takes place in direct expansion plants of Central Industrial Air Conditioning systems.

- A. Aerosol Handling Unit
- B. Air Handling Unit ✓
- C. Automotive Handling Unit
- D. Automobile Handling Unit

Q31 Part B (Refrigeration & AC Mechanic)

In industrial air conditioning systems, a pipe line is provided from the condenser to the cooling tower to circulate _____.

- A. gas
- B. chlorine
- C. water ✓
- D. air

Q32 Part B (Refrigeration & AC Mechanic)

The unit for specific gravity is _____.

- A. m/s^2
- B. g/cm^3
- C. kg/m^3
- D. no unit (dimensionless) ✓

Q33 Part B (Refrigeration & AC Mechanic)

_____ exists when a system changes its state due to temperature difference between the system and its surroundings.

- A. Diffusion
- B. Work
- C. Mass flow
- D. Heat ✓

Q34 Part B (Refrigeration & AC Mechanic)

What are 'Thermal insulators' in Refrigeration and Air Conditioning systems?

- A. Materials that retard or offer resistance to the flow of air through it
- B. Materials that retard or offer resistance to the flow of water through it
- C. Materials that retard or offer resistance to the flow of heat through it ✓
- D. Materials that retard or offer resistance to the friction

Q35 Part B (Refrigeration & AC Mechanic)

In which of the following types of refrigeration system, a lighter gas compared to the refrigerant vapour is introduced into the system?

- A. Three fluid absorption system ✓
- B. Ice refrigeration system
- C. Liquid gas refrigeration system
- D. Dry ice refrigeration system

Q36 Part B (Refrigeration & AC Mechanic)

When using a multimeter to measure current, which of the following is correct?

- A. The multimeter is connected directly to the power source.
- B. The multimeter is connected in series with the load. ✓
- C. The multimeter is connected only across resistive components.
- D. The multimeter is connected in parallel with the load.



Q37 Part B (Refrigeration & AC Mechanic)

In horizontal type bottle coolers, _____ air convection is present inside the storage cooling compartment.

- A. neutral
- B. natural
- C. forced
- D. obligatory

Q38 Part B (Refrigeration & AC Mechanic)

The ____ in an air-conditioning system allows heat to flow from the hot refrigerant to the cooler outside air.

- A. condenser
- B. evaporator
- C. turbine
- D. compressor

Q39 Part B (Refrigeration & AC Mechanic)

What is the advantage of giving heat treatment to a material?

- A. To decrease the melting point of the material
- B. To increase the weight of the material
- C. To change it from one element to another element
- D. To make surgical knives of sharp edges

Q40 Part B (Refrigeration & AC Mechanic)

Which of the following files is used for filing narrow grooves and angles above 10°?

- A. Knife-edge file
- B. Half round file
- C. Square file
- D. Triangular file

Q41 Part B (Refrigeration & AC Mechanic)

In the refrigeration system, ____ refrigerants are the heat carriers that directly cool the material by absorbing latent heat.

- A. highly flammable
- B. secondary
- C. primary
- D. nitrogen

Q42 Part B (Refrigeration & AC Mechanic)

Which of the following organisations is responsible for enforcing workplace safety regulations in India?

- A. World Health Organization (WHO)
- B. Food and Drug Administration (FDA)
- C. Directorate General of Factory Advice Service and Labour Institutes (DGFASLI)
- D. Environmental Protection Agency (EPA)

Q43 Part B (Refrigeration & AC Mechanic)

A circuit consists of three resistors; 15 ohms, 10 ohms, and 20 ohms. The 15-ohm resistor is in series with the parallel combination of the 10-ohm and 20-ohm resistors. If a 24 V battery is applied across the circuit, what is the total current flowing through the circuit?

- A. 3.1 A
- B. 0.1 A
- C. 1.1 A
- D. 2.1 A

Q44 Part B (Refrigeration & AC Mechanic)

According to BIS SP 46-2003, which of the following applications is correctly represented by a chain-thin line in engineering drawings?

- A. Center lines
- B. Hidden edges
- C. Dimension lines
- D. Visible edges

Q45 Part B (Refrigeration & AC Mechanic)

In the operations of a cold storage plant, _____ is used to protect the plant components against unusual working conditions.

- A. Temperature control
- B. Safety control
- C. Moisture control
- D. Fluid control

Q46 Part B (Refrigeration & AC Mechanic)

_____ moves from one point to another through air in air conditioning systems.

- A. Air borne sound
- B. Structure borne sound
- C. Water borne sound
- D. Refrigerent borne sound



Q47 Part B (Refrigeration & AC Mechanic)

The _____ device is used for producing cold in a refrigeration system.

- A. manifold gauge tool
- B. condenser
- C. economiser
- D. vortex tube



Q48 Part B (Refrigeration & AC Mechanic)

Why is it important for every person to follow safety procedures in the workplace?

- A. To increase overall production efficiency
- B. To minimise risks and avoid accidents
- C. To reduce operational costs significantly
- D. To limit the need for frequent supervision



Q49 Part B (Refrigeration & AC Mechanic)

In a vapor compression system, the condensed liquid refrigerant from the condenser is stored in a vessel known as _____.

- A. receiver
- B. evaporator
- C. condenser
- D. expansion valve



Q50 Part B (Refrigeration & AC Mechanic)

Which of the following motors is used for condensing units and cooling coils of bottle coolers?

- A. Slip ring induction motor
- B. Capacitor-start capacitor-run induction motor
- C. Squirrel cage induction motor
- D. Shaded pole induction motor



Q51 Part B (Refrigeration & AC Mechanic)

For what purpose are pins and clips used in engineering drawings?

- A. To transfer dimensions and dividing lines into a number of equal parts
- B. To draw horizontal lines, parallel lines and to guide/hold the set squares
- C. To fasten the drawing sheet on to the drawing board firmly so that it does not shake
- D. To support the drawing paper/tracing paper for making drawings



Q52 Part B (Refrigeration & AC Mechanic)

In a lead-acid battery, what is the chemical composition of the material used for the positive plate during discharge?

- A. Sulphuric acid (H_2SO_4)
- B. Lead (Pb)
- C. Lead dioxide (PbO_2)
- D. Lead sulfate (PbSO_4)



Q53 Part B (Refrigeration & AC Mechanic)

When selecting a sheet size for an original drawing, what should be the primary consideration?

- A. The standard size of the drawing office.
- B. The clarity and resolution required.
- C. The orientation of the drawing (horizontal or vertical).
- D. The size of the reproduction.



Q54 Part B (Refrigeration & AC Mechanic)

If the diameter of the bare tube coil evaporators is too small, then:

- A. the system efficiency increases
- B. the system efficiency reduces
- C. the pressure drop due to friction becomes too low
- D. the pressure drop due to friction becomes zero



Q55 Part B (Refrigeration & AC Mechanic)

Which of the following advantages of AC motor over DC motor is INCORRECT?

- A. AC motors have higher startup power demands.
- B. AC motors are more durable and have a longer life expectancy than DC motors.
- C. AC motors are more efficient than DC motors.
- D. AC motors have fewer moving parts than DC motors.



Q56 Part B (Refrigeration & AC Mechanic)

Match the refrigerant control expansion valves with their correct functions.

Refrigerant controls	Functions
A. Suction-line regulators	P. Limit the flow of gas to the compressor to prevent surge or excessive loads
B. Check valves	Q. Interrupt the flow on demand from any one of several types of temperature or pressure-sensing devices
C. Solenoid valves	R. Prevent the flow of gas from the condenser
D. Hold back valves	S. Control the flow of refrigerant gas from the evaporator coil

A. A-P, B-R, C-Q, D-S



B. A-S, B-P, C-Q, D-R

C. A-S, B-R, C-Q, D-P

D. A-S, B-R, C-P, D-Q

Q57 Part B (Refrigeration & AC Mechanic)

Which of the following are the two methods of charging refrigerants into systems?

A. Charging by specific volume and Charging by diffusivity

B. Charging by viscosity and Charging by volume

C. Charging by density and Charging by colour

D. Charging by weight and Charging by volume

**Q58 Part B (Refrigeration & AC Mechanic)**

In refrigeration systems, 'FCU' stands for ____.

A. Fan Coil Unit



B. Fan Control Unit

C. Freezer Coil Unit

D. Freezer Control Unit

Q59 Part B (Refrigeration & AC Mechanic)

Non-functional dimensions are _____.

A. not essential for the function of the space or component



B. essential for the function of the space or component

C. derived from the values of the related features of a drawing

D. directly derived from the values given on a drawing

Q60 Part B (Refrigeration & AC Mechanic)

What is a refrigeration system?

A. The equipment employed to maintain a system at a high temperature.

B. The equipment employed to maintain a system at a low pressure.

C. The equipment employed to maintain a system at a high pressure.

D. The equipment employed to maintain a system at a low temperature.

**Q61 Part B (Refrigeration & AC Mechanic)**

Which of the following parts of a file is the part fitted to the tang for holding the file?

A. Tip or Point

B. Handle



C. Edge

D. Tang

Q62 Part B (Refrigeration & AC Mechanic)

Which of the following factors should be controlled in order to keep constant temperature throughout the conditioned space?

A. Motion of air



B. Humidity of air

C. Temperature of air

D. Purity of air

Q63 Part B (Refrigeration & AC Mechanic)

Which of the following types of pliers is used to shape loops in wires and to form curves in light metal strips?

A. Flat nose pliers

B. Round nose pliers



C. Slip-joint pliers

D. End cutting pliers

Q64 Part B (Refrigeration & AC Mechanic)

Gaskets, seals and spacers are made using:

A. centre punch

B. hollow punch



C. pin punch

D. prick punch



Q65 Part B (Refrigeration & AC Mechanic)

Which of the following components of an automotive AC system store refrigerant, filter particles, absorb moisture and separate vaporous R134a from liquid R134a?

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

Q66 Part B (Refrigeration & AC Mechanic)

_____ is a type of refrigerated cabinet that displays merchandise as well as cools it.

- A. Visible heater
- B. Undercounter cooler
- C. Visible cooler
- D. Hidden cooler

Q67 Part B (Refrigeration & AC Mechanic)

In an automotive air conditioning system compressor, the pistons are operated by a _____, which moves them backwards and forwards in the cylinders.

- A. crank shaft
- B. gear plate
- C. connecting rod
- D. wobble plate

Q68 Part B (Refrigeration & AC Mechanic)

What is the function of a condenser in air-conditioning systems?

- A. Prevents chocking of cooling air
- B. Blows the cool air to the duct
- C. Rejects heat from refrigerant vapour and turns it to liquid
- D. Picks up heat from return air

Q69 Part B (Refrigeration & AC Mechanic)

Which of the following parts of the softy machine admits and shuts the flow of an ice cream?

- A. Shaft bearing
- B. Churner shaft with conveyor
- C. Sight glass
- D. Ice cream outlet valve

Q70 Part B (Refrigeration & AC Mechanic)

A drawing instrument box is used to carry all _____ instruments.

- A. drawing
- B. screening
- C. drilling
- D. casting

Q71 Part B (Refrigeration & AC Mechanic)

A circular hole of radius 3 cm is cut from a rectangular sheet of dimensions 12 cm × 10 cm. Find the remaining area.

(Take $\pi = 3.14$)

- A. 100 cm²
- B. 91.74 cm²
- C. 95.86 cm²
- D. 75.74 cm²

Q72 Part B (Refrigeration & AC Mechanic)

What should you do to ensure your personal safety at work?

- A. Wear personal protective equipment.
- B. Work in a hurry without checking equipment.
- C. Ignore warning signs and instructions.
- D. Take risks to finish tasks quickly.

Q73 Part B (Refrigeration & AC Mechanic)

Which of the following is an important safety measure during a power failure?

- A. Using candles for lighting
- B. Continuing to use equipment without verifying power status
- C. Ensuring all machines and electrical equipment are turned off
- D. Ignoring alarm systems



Q74 Part B (Refrigeration & AC Mechanic)

$$\left(\frac{3}{8}\right) + \left(\frac{5}{12}\right)$$

A. $\frac{17}{24}$

B. $\frac{19}{24}$ 

C. $\frac{8}{20}$

D. $\frac{7}{12}$

Q75 Part B (Refrigeration & AC Mechanic)

$$\cos\theta$$

A. $\frac{3}{5}$

B. $\frac{4}{5}$ 

C. $\frac{5}{4}$

D. $\frac{3}{4}$



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Part B (Refrigeration & AC Mechanic)

75 Questions • Answer Key

Q1 Part B (Refrigeration & AC Mechanic)

Which of the following statements is correct about a protractor?

Statements:

1. A protractor can be used to measure angles from both sides.
2. A protractor is typically made of a rigid metal material.

- A. Neither statement is true
- B. Only statement 2 is true
- C. Only statement 1 is true ✓
- D. Both statements are true

Q2 Part B (Refrigeration & AC Mechanic)

In a car air-conditioning system, the ____ separates the liquid and gas refrigerant and removes moisture.

- A. condenser
- B. receiver-drier ✓
- C. compressor
- D. blower

Q3 Part B (Refrigeration & AC Mechanic)

The capacity of a cooling tower can be expressed as:

- A. flow rate * specific heat * temperature difference ✓
- B. specific heat * temperature difference
- C. flow rate * temperature difference
- D. flow rate * temperature

Q4 Part B (Refrigeration & AC Mechanic)

Which of the following types of AC motors is a three-phase induction motor?

- A. Split phase induction motor
- B. Shaded pole induction motor
- C. Capacitor start induction motor
- D. Slip ring induction motor ✓

Q5 Part B (Refrigeration & AC Mechanic)

What is waste?

- A. Natural resources for living organisms
- B. Valuable substances for agriculture
- C. Useful materials for industries
- D. Unwanted or unusable materials ✓

Q6 Part B (Refrigeration & AC Mechanic)

Which of the following punch marks is used for the correct location and seating of the divider point?

- A. Centre punch marks of 30°
- B. Centre punch marks of 60°
- C. Prick punch marks of 120°
- D. Prick punch marks of 30° ✓

Q7 Part B (Refrigeration & AC Mechanic)

If a machine has an efficiency of 80%, it means:

- A. the machine produces more output than input
- B. the machine has a velocity ratio and mechanical advantage both equal to 80
- C. the machine does not have any loss in input energy
- D. the machine loses 20% of the input ✓

Q8 Part B (Refrigeration & AC Mechanic)

Which of the following benefits of forced draft cooling in frost-free refrigerators is INCORRECT?

- A. Even cooling
- B. No frost buildup
- C. Slower cooling ✓
- D. Faster cooling

Q9 Part B (Refrigeration & AC Mechanic)

Which of the following features of automatic control in air conditioning is INCORRECT?

- A. It can be integrated with security access control systems, fire alarm systems and more.
- B. It cannot adjust pressures to reduce demand when spaces are unoccupied. ✓
- C. It maintains a comfortable temperature.
- D. It can regulate heating and cooling to provide comfort conditions while limiting energy usage.



Q10 Part B (Refrigeration & AC Mechanic)

When did India implement the Hazardous Wastes (Management and Handling) Rules to regulate the disposal and handling of hazardous waste?

- A. 1987
- B. 2000
- C. 1989
- D. 1982

Q11 Part B (Refrigeration & AC Mechanic)

Match the columns and select the correct option from the following.

Thermodynamic Law/Concept	Brief Description
(A) First law of Thermodynamics	(P) Hypothetical envelope enclosing the system
(B) Second law of Thermodynamics	(Q) Deals with thermal equilibrium
(C) Zeroth law of Thermodynamics	(R) Principle of increase of entropy
(D) Boundary	(S) Deals with concept of internal energy

- A. A-P, B-R, C-Q, D-S
- B. A-S, B-R, C-Q, D-P
- C. A-S, B-R, C-P, D-Q
- D. A-R, B-S, C-Q, D-P

Q12 Part B (Refrigeration & AC Mechanic)

Which of the following types of wooden mallets are used for general purpose work such as flattening and bending?

- A. Bossing mallets
- B. Side-faked mallets
- C. Standard wooden mallets
- D. End-faked mallets

Q13 Part B (Refrigeration & AC Mechanic)

Which of the following is NOT classified as a type of cold storage system of refrigerator?

- A. Frozen storage
- B. De-frozen storage
- C. Long-term cold storage
- D. Temporary storage

Q14 Part B (Refrigeration & AC Mechanic)

In direct expansion type bottle coolers, ____ is the cooling coil around the storage tank.

- A. copper tube
- B. ice cube
- C. wind
- D. water

Q15 Part B (Refrigeration & AC Mechanic)

Identify the type that is NOT classified under deep freezers in the refrigerator system.

- A. Chest type deep freezers
- B. Upright freezers
- C. High temperature deep freezers
- D. Display deep freezers

Q16 Part B (Refrigeration & AC Mechanic)

Which of the following parts of the softy machine holds the churner in position and dries the refrigerant?

- A. Master tank
- B. Sight glass
- C. Filter dryer
- D. Shaft bearing

Q17 Part B (Refrigeration & AC Mechanic)

Which of the following punches is used to make deeper witness marks on scribed lines and make it easier for the drill to start correctly?

- A. Solid punch
- B. Centre punch
- C. Pin punch
- D. Prick punch

Q18 Part B (Refrigeration & AC Mechanic)

What is the chemical effect that occurs in a battery during the charging process of a Lead Acid battery?

- A. Lead reacts with sulphur to form lead sulphate
- B. Water dissociation into hydrogen and oxygen
- C. Lead sulphate decomposes into lead and sulphuric acid
- D. Sulphuric acid dissociates into hydrogen and sulphate ions



Q19 Part B (Refrigeration & AC Mechanic)

The drying material used in refrigerators is called _____.

- A. condenser
- B. humidifier
- C. desiccant
- D. stabiliser



Q20 Part B (Refrigeration & AC Mechanic)

What is the function of air washers in an air conditioning system?

- A. Cleans and humidifies the refrigerant
- B. Cleans and humidifies the condensers
- C. Cleans and humidifies the evaporators
- D. Cleans and humidifies the air



Q21 Part B (Refrigeration & AC Mechanic)

In a Heating, Ventilation, and Air Conditioning (HVAC) control system, AHUs stands for _____.

- A. American Handling Units
- B. Atom Handling Units
- C. Automobile Handling Units
- D. Air Handling Units



Q22 Part B (Refrigeration & AC Mechanic)

If the coefficient of linear expansion of a material is $2 \times 10^{-5} \text{ }^{\circ}\text{C}^{-1}$, what does it mean?

- A. The material expands by 2×10^{-5} times its original area per degree Celsius
- B. The material expands by 2×10^{-5} times its original volume per degree Celsius
- C. The material expands by 2×10^{-5} times its original length per degree Celsius
- D. The material always increases by 2×10^{-5} kg when temperature is increased by 1°C



Q23 Part B (Refrigeration & AC Mechanic)

Which of the following expansion valves is a modified thermostatic expansion valve with an electrical heater incorporated in its feeler bulb?

- A. High-side float valve
- B. Level master control
- C. Electronic expansion valve
- D. Low side float valve



Q24 Part B (Refrigeration & AC Mechanic)

In a refrigeration system, the defrost cycle will not start until the _____ switch turns the compressor on and off.

- A. velocity control
- B. pressure control
- C. temperature control
- D. volume control



Q25 Part B (Refrigeration & AC Mechanic)

In the cycles of a car air-conditioning system, the _____ component cools the refrigerant gas.

- A. expansion valve
- B. condenser
- C. compressor
- D. receiver-drier



Q26 Part B (Refrigeration & AC Mechanic)

The overall heat of steam is the sum of ____ + internal latent heat + external work of evaporation.

- A. dryness fraction
- B. hidden heat
- C. sensible heat
- D. latent heat



Q27 Part B (Refrigeration & AC Mechanic)

Which of the following statements is/are correct?

Statement I - The annealing process uses heat to reduce the hardness and increase the ductility and toughness of various steels, cast iron, and alloys.

Statement II - Quenching is a rapid cooling process that alters specific properties of materials by manipulating the cooling rate.

- A. Statement (I) is correct but Statement (II) is incorrect.
- B. Statement (I) and (II) both are correct.**
- C. Statement (I) is incorrect but Statement (II) is correct.
- D. Statement (I) and (II) both are incorrect.

Q28 Part B (Refrigeration & AC Mechanic)

Which of the following statements correctly describes the placement and purpose of orientation marks on a drawing sheet?

1. Orientation marks are placed at two opposite corners of the drawing sheet to indicate the correct orientation on the drawing board.
2. Orientation marks consist of arrow heads placed across the frame, with one at the shorter side and one at the longer side, coinciding with the centering marks.
3. One of the orientation marks always points towards the draughtsman, indicating the direction in which the drawing sheet should be placed.
4. Orientation marks are used to mark the midpoint of each side of the drawing sheet for accurate centering.

- A. 1, 2, and 3 only
- B. 1 and 4 only
- C. 2 and 3 only**
- D. 1, 2, and 4 only

Q29 Part B (Refrigeration & AC Mechanic)

Ton of refrigeration can be expressed as:

- A. BTU per hour heat gain/6000
- B. BTU per hour heat gain/10000
- C. BTU per hour heat gain/12000**
- D. BTU per hour heat gain/1000

Q30 Part B (Refrigeration & AC Mechanic)

Which of the following is a component of the high side of a vapour compression cycle?

- A. Accumulator
- B. Compressor**
- C. Suction line
- D. Evaporator

Q31 Part B (Refrigeration & AC Mechanic)

In engineering drawing, what is defined as the path of a moving point with no thickness?

- A. Angle
- B. Curve
- C. Point
- D. Line**

Q32 Part B (Refrigeration & AC Mechanic)

Which of the following is an example of a p-type semiconductor?

- A. Silicon doped with phosphorus
- B. Silicon doped with arsenic
- C. Silicon doped with boron**
- D. Germanium doped with phosphorus

Q33 Part B (Refrigeration & AC Mechanic)

The instrument used to measure high temperature is a _____.

- A. manometer
- B. barometer
- C. pyrometer**
- D. vacuum pressure gauge

Q34 Part B (Refrigeration & AC Mechanic)

Electromagnetic clutches in car air conditioning systems operates electrically but transmits _____ type of torque.

- A. potential
- B. chemical
- C. mechanical**
- D. kinetic

Q35 Part B (Refrigeration & AC Mechanic)

Identify the two main types of thermistors used in an air-conditioning system.

- A. Positive thermal coefficient (PTC) and negative time coefficient (NTC)
- B. Programmable temperature coefficient (PTC) and negligible temperature coefficient (NTC)
- C. Positive temperature coefficient (PTC) and negative temperature coefficient (NTC)**
- D. Positive temperature calibration (PTC) and negative temperature calibration (NTC)



Q36 Part B (Refrigeration & AC Mechanic)

Pencils are rated in engineering drawings based on the _____.

A. hardness or softness of the lead



B. colour of the lead

C. durability of the lead

D. shape of the lead

Q37 Part B (Refrigeration & AC Mechanic)

Why is it important to follow proper disposal procedures for industrial waste?

A. To allow waste to decompose anywhere

B. To reduce the number of trash bins needed

C. To save time and effort in sorting waste

D. To comply with environmental regulations and reduce pollution

**Q38 Part B (Refrigeration & AC Mechanic)**

Which of the followings effects of suction pressure in V.C system is INCORRECT?

A. Evaporator pressure drops due to frictional resistance

B. Increases the refrigerating effect



C. Decreases the refrigerating effect

D. Increases the compressor work

Q39 Part B (Refrigeration & AC Mechanic)

What does an optical pyrometer measure?

A. The relative density of liquids

B. The temperature of the surface



C. The volume of liquids

D. The pressure of gases

Q40 Part B (Refrigeration & AC Mechanic)

Match the electrical equipment of central Air Conditioning plant system with their correct functioning.

Equipment Name	Functioning
Electronic expansion valve (A)	(P) Fan is operated at step rotation speed by using the inverter
Solenoid valve (B)	(Q) Used to switch outdoor heat exchanger to evaporator
Four-way valve (C)	(R) Used to return oil from the oil separator to the compressor
Inverter fan (D)	(S) Control the refrigerant amount to cool the diode bridge

A. A-S, B-R, C-P, D-Q

B. A-S, B-P, C-Q, D-R

C. A-P, B-R, C-Q, D-S

D. A-S, B-R, C-Q, D-P

**Q41 Part B (Refrigeration & AC Mechanic)**

Match the correct length and breadth of the Trimmed sizes of sheets.

Designation	Trimmed size
A. A0	P. 297 × 420
B. A1	Q. 420 × 594
C. A2	R. 594 × 841
D. A3	S. 841 × 1189

A. A - R, B - S, C - Q, D - P

B. A - P, B - R, C - Q, D - S

C. A - S, B - R, C - P, D - Q

D. A - S, B - R, C - Q, D - P

**Q42 Part B (Refrigeration & AC Mechanic)**

Which of the following is a key advantage of using Thyristors in power control applications?

A. High frequency switching



B. High efficiency and low power loss

C. Small size and low cost

D. Low voltage handling capabilities



Q43 Part B (Refrigeration & AC Mechanic)

Which of the following uses of wire gauge is INCORRECT?

- A. It measures the diameter of a wire.
- B. It does not help determine how much current a wire can carry. ✓
- C. Using the wrong wire gauge can damage appliances and electronic devices.
- D. It is used in electrical installations, welding and other applications.

Q44 Part B (Refrigeration & AC Mechanic)

Which of the following parts of a hammer-head is used for shaping and forming work like riveting and bending?

- A. Face
- B. Eyehole
- C. Pein ✓
- D. Cheek

Q45 Part B (Refrigeration & AC Mechanic)

In a refrigeration system, ____ are shut-off valves used to control the flow of the refrigerant.

- A. thermistors
- B. cocks
- C. ducts
- D. strainers ✓

Q46 Part B (Refrigeration & AC Mechanic)

What is the blade length of the T1 'T' square, as per IS:1360-1989?

- A. 500 mm
- B. 1500 mm
- C. 700 mm
- D. 1000 mm ✓

Q47 Part B (Refrigeration & AC Mechanic)

Which of the following components of a reciprocating compressor is welded at the top of the bottom dome or at the top dome of the compressor?

- A. Piston pin
- B. Process tube ✓
- C. Discharge tube
- D. Suction tube

Q48 Part B (Refrigeration & AC Mechanic)

A device operates at 240 V and consumes 480 W of power. What is the current flowing through the device?

- A. 2 A ✓
- B. 1 A
- C. 1.5 A
- D. 2.5 A

Q49 Part B (Refrigeration & AC Mechanic)

Which of the following is INCORRECT about the compartment maintenance of walk-in coolers?

- A. Use a soft cleaning cloth with a mild detergent to wipe away dirt and stains.
- B. Use a soft dry cloth to dry up finishes.
- C. Use abrasive and corrosive type of cleaners. ✓
- D. Use a clean damp cloth to remove any chemical residue.

Q50 Part B (Refrigeration & AC Mechanic)

Which of the following components of thermostatic expansion valve covers all external parts and prevents refrigerant leakage to atmosphere?

- A. Diaphragm
- B. Sensing bulb
- C. Equalizer tube connection
- D. Valve body ✓

Q51 Part B (Refrigeration & AC Mechanic)

What force (effort) will be required to push a load, initially at rest, of mass 500 g, so that at a distance of 20 m, its final velocity is 20 m/sec [Assume that there is no friction and 'g' = 10 m/s²].

- A. 5 J
- B. 10 N
- C. 5 N ✓
- D. 10 J



Q52 Part B (Refrigeration & AC Mechanic)

When drawing a curved line of a specific length in an engineering drawing, which tool is most appropriate for ensuring accuracy?

- A. Protractor
- B. Straightedge
- C. French Curve
- D. Compass

**Q53 Part B (Refrigeration & AC Mechanic)**

A refrigeration is obtained when one ton of ice at 32°F is melted into water at 32° F in ____.

- A. 6 hours
- B. 1 hour
- C. 24 hours
- D. 12 hours

**Q54 Part B (Refrigeration & AC Mechanic)**

Which of the following types of wooden mallets are used for hollowing panel beatings?

- A. Standard wooden mallets
- B. End-faked mallets
- C. Side-faked mallets
- D. Bossing mallets

**Q55 Part B (Refrigeration & AC Mechanic)**

Match the Parts Identified with their Functions in cold storage systems in refrigerator systems.

Parts Identified	Functions
A. Cold room	P. Indicates the room temperature (cold room)
B. Main cold room door	Q. Controls the flow of liquid refrigerant
C. Expansion valve	R. Keeps the room air tight
D. Dial thermometer	S. Product storing area

- A. A-S, B-R, C-P, D-Q
- B. A-R, B-S, C-Q, D-P
- C. A-S, B-R, C-Q, D-P
- D. A-P, B-R, C-Q, D-S

**Q56 Part B (Refrigeration & AC Mechanic)**

What is the primary principle behind the generation of electrical energy in a piezoelectric device?

- A. Conversion of thermal energy into electrical energy
- B. Conversion of chemical energy into electrical energy
- C. Conversion of light energy into electrical energy
- D. Conversion of mechanical stress into electrical energy

**Q57 Part B (Refrigeration & AC Mechanic)**

A thermostat is a ____ standard control serving as an 'ON' and 'OFF' switch for the compressor in a refrigeration system.

- A. humidity
- B. density
- C. pressure
- D. temperature

**Q58 Part B (Refrigeration & AC Mechanic)**

Which of the following parts of a chilling tank contains direct expansion coils, equally distributed throughout the tank?

- A. Insulation of ice tank
- B. Ice tank
- C. Ice block
- D. Cooling coil



Q59 Part B (Refrigeration & AC Mechanic)

Match the columns and select the correct option from the following.

Types of System	Characteristics of System
(A) Open system	(P) A system which consists of a single phase
(B) Isolated system	(Q) System is one which is thermally insulated from its surroundings
(C) Adiabatic system	(R) System which exchanges neither energy nor matter with environment
(D) Homogeneous system	(S) System is one in which matter flows into or out of the system

A. A-S, B-R, C-Q, D-P



B. A-S, B-R, C-P, D-Q

C. A-P, B-R, C-Q, D-S

D. A-Q, B-R, C-S, D-P

Q60 Part B (Refrigeration & AC Mechanic)

The element of the humidity control changes as the humidity changes in an air conditioning system. This element is called _____.

A. hydroscopic element

B. freezing element

C. hygroscopic element



D. sonic element

Q61 Part B (Refrigeration & AC Mechanic)

In engineering drawing (lettering and numbering), a single stroke means that the _____.

A. thickness of the line of the letter or number is obtained in one stroke of the pencil



B. thickness of the line of the letter or number is obtained in three strokes of the pencil

C. thickness of the line of the letter or number is obtained in no strokes of the pencil

D. thickness of the line of the letter or number is obtained in two strokes of the pencil

Q62 Part B (Refrigeration & AC Mechanic)

Match the correct function of parts of a refrigerator.

Refrigerator Part	Function
(A) Deep freezer	(P) meters out the required amount of refrigerant
(B) Compressor	(Q) reservoir for excess liquid refrigeration
(C) Receiver	(R) provides the pumping action to the refrigerant
(D) Capillary tube	(S) keeps food frozen for extended periods of time

A. A-P, B-R, C-Q, D-S

B. A-S, B-R, C-P, D-Q

C. A-Q, B-R, C-S, D-P

D. A-S, B-R, C-Q, D-P

**Q63 Part B (Refrigeration & AC Mechanic)**

In the condenser, the vapour refrigerant at high pressure and at high temperature is condensed to the liquid refrigerant at _____ and _____.

A. high pressure; low temperature



B. high temperature; low pressure

C. low pressure; low volume

D. high temperature; high volume

Q64 Part B (Refrigeration & AC Mechanic)

A compressor is controlled by a _____ control switch during refrigeration cycle and defrost.

A. temperature



B. pressure

C. density

D. volume

Q65 Part B (Refrigeration & AC Mechanic)

Which of the following is a fundamental unit?

A. newton

B. metre



C. pascal

D. watt



Q66 Part B (Refrigeration & AC Mechanic)

Which of the following care and maintenance methods of air compressor in refrigeration system is INCORRECT?

- ☒ A. Ensure that the belt guards are not fitted properly.
- ☐ B. Ensure that the drive belts are in good condition.
- ☐ C. The recommended grade of oil should be used.
- ☐ D. The level of the oil should be maintained at specified marks shown on the dip stick.

Q67 Part B (Refrigeration & AC Mechanic)

The process where moisture is removed from the air, keeping its dry bulb temperature constant, is called the _____.

- ☐ A. radiation process
- ☐ B. sensible heating process
- ☐ C. humidification process
- ☒ D. dehumidification process

Q68 Part B (Refrigeration & AC Mechanic)

In a refrigeration system, cocks refer to _____.

- ☐ A. devices that separate the liquid and gas refrigerant, and remove moisture
- ☐ B. devices installed in the piping to filter out solid particles
- ☒ C. manual shut-off valves used to control the flow of the refrigerant
- ☐ D. devices that increase the pressure and temperature of the refrigerant gas

Q69 Part B (Refrigeration & AC Mechanic)

In _____ type of drier, the shell charged with moisture absorbing chemical is permanently sealed.

- ☐ A. Reusable
- ☒ B. Sealed
- ☐ C. Unsealed
- ☐ D. Refillable

Q70 Part B (Refrigeration & AC Mechanic)

_____ of air conditioning are the diagrams for HVAC components and control systems.

- ☐ A. Blueprints
- ☐ B. HVAC drawings
- ☒ C. Schematics drawings
- ☐ D. Orthogonal drawings

Q71 Part B (Refrigeration & AC Mechanic)

_____ is the process of preserving food stuffs on a large scale by refrigeration.

- ☐ A. Godown storage
- ☐ B. Hot storage
- ☒ C. Cold storage
- ☐ D. Clinical storage

Q72 Part B (Refrigeration & AC Mechanic)

In Refrigeration and Air-Conditioning systems, a shell and tube type evaporator is also known as _____.

- ☐ A. fouling factor
- ☐ B. sensible heat
- ☒ C. chiller
- ☐ D. latent heat

Q73 Part B (Refrigeration & AC Mechanic)

Which of the following components is provided in the freezer to control the temperature of the unit?

- ☐ A. Compressor
- ☒ B. Thermostat
- ☐ C. Capillary tube
- ☐ D. Condenser fan motor

Q74 Part B (Refrigeration & AC Mechanic)

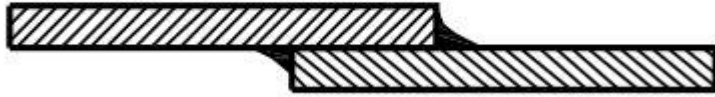
Which of the following is the key difference between a fuse and a circuit breaker?

- ☐ A. A fuse can be reset after tripping, while a circuit breaker must be replaced.
- ☐ B. A fuse is used for high-voltage circuits, while a circuit breaker is used for low-voltage circuits.
- ☐ C. A fuse is a mechanical device, while a circuit breaker is an electronic device.
- ☒ D. A fuse is a one-time-use device, while a circuit breaker can be reset and reused.



Q75 Part B (Refrigeration & AC Mechanic)

Identify the type of brazed joint shown below.



A. Joggle Lap

B. Simple Lap



C. Strapped Lap

D. Butted Flange



Part B (Refrigeration & AC Mechanic)

75 Questions • Answer Key

Q1 Part B (Refrigeration & AC Mechanic)

Which of the following screwdrivers has cross-shaped tips that are unlikely to slip from the cruciform slots in Philips recessed head screws?

- A. Stumpy screwdriver
- B. Offset screwdriver
- C. Cross-recess screwdriver ✓
- D. Ratchet screwdriver

Q2 Part B (Refrigeration & AC Mechanic)

What is the primary reason for conducting a vehicle road test?

- A. To test how fast the vehicle can go
- B. To avoid the need for inspections
- C. To increase fuel efficiency
- D. To ensure the vehicle is functioning safely and correctly ✓

Q3 Part B (Refrigeration & AC Mechanic)

Which of the following statements is/are true about Non-Functional Dimensions (NF) in engineering drawing?

Statement 1: Non-functional Dimensions are shown without limits, as they do not affect the functionality of the component or space.

Statement 2: Non-Functional Dimensions are typically used for reference purposes only, and do not impact the assembly or performance of the component or space.

- A. Only statement 2 is true ✓
- B. Only statement 1 is true
- C. Both statements are true
- D. Neither statement is true

Q4 Part B (Refrigeration & AC Mechanic)

Identify the correct throttling device used in the operation of cold storage plant of refrigerator.

- A. Orifice meter
- B. Manometer
- C. Pressure gauge
- D. Expansion valve ✓

Q5 Part B (Refrigeration & AC Mechanic)

Which of the following condensers of an ice cube machine cools the refrigerant vapour by using heat exchanger between the condenser pipes and the evaporated water?

- A. Air cooling condenser
- B. Water cooling condenser
- C. Surface condenser
- D. Evaporative condenser ✓

Q6 Part B (Refrigeration & AC Mechanic)

In the Automotive Air conditioning system, a/an _____ is used to transmit the power from the engine crankshaft to the compressor by means of a drive belt.

- A. clutch ✓
- B. bearing
- C. air filter
- D. evaporator

Q7 Part B (Refrigeration & AC Mechanic)

A 100-mm centre-punch could have a 10-mm diameter body and a 6-mm diameter point ground to an angle of _____.

- A. 120°
- B. 90° ✓
- C. 60°
- D. 30°

Q8 Part B (Refrigeration & AC Mechanic)

What is the primary reason for the heating effect in a conductor when an electric current passes through it?

- A. The electric field in the conductor causes heat generation.
- B. The movement of electrons causes heat generation. ✓
- C. The conductor absorbs heat from the surrounding environment.
- D. The movement of protons causes heat generation.



Q9 Part B (Refrigeration & AC Mechanic)

Which of the following compressors is mainly used in large industrial systems running at high speeds through the use of step-up gears?

- A. Centrifugal compressor
- B. Screw compressor** ✓
- C. Scroll compressor
- D. Reciprocating compressor

Q10 Part B (Refrigeration & AC Mechanic)

In a refrigerator, the cold vapour continues to absorb heat and gets superheated in the last portion of the ____.

- A. expansion valve
- B. condenser
- C. evaporator** ✓
- D. compressor

Q11 Part B (Refrigeration & AC Mechanic)

_____ recommend(s) 20 mm wide margins for sheet sizes AO and A1 in engineering drawings.

- A. Borders and frames: SP: 46 (2003)** ✓
- B. Geographic coordinate systems
- C. Custom grids
- D. Grid reference system

Q12 Part B (Refrigeration & AC Mechanic)

Match the components in Column A with those in Column B.

Column A Column B

Thermometer pyrometer (A) Thermometric property resistance (P)

Mercury-in-glass (B) Electromotive force (Q)

Thermocouple (C) Length (R)

Electric resistance (D) Intensity of radiation (S)

- A. A-S, B-R, C-Q, D-P** ✓
- B. A-P, B-R, C-Q, D-S
- C. A-S, B-R, C-P, D-Q
- D. A-R, B-S, C-Q, D-P

Q13 Part B (Refrigeration & AC Mechanic)

A Carnot refrigeration cycle absorbs heat at 270 K and rejects it at 300 K. What will be the coefficient of performance of this refrigeration cycle?

- A. 2
- B. 4
- C. 9** ✓
- D. 6

Q14 Part B (Refrigeration & AC Mechanic)

Which of the following is a key electrical safety tip in a workshop?

- A. Operate machines with wet hands
- B. Ignore frayed wires if the device is still working
- C. Use water to clean electrical panels
- D. Ensure electrical equipment is properly grounded** ✓

Q15 Part B (Refrigeration & AC Mechanic)

Cold storages are provided with _____ to preserve the food beverages.

- A. air-tight insulated rooms** ✓
- B. water sealed insulated rooms
- C. rock wool made insulated rooms
- D. fire bricks insulated rooms

Q16 Part B (Refrigeration & AC Mechanic)

Refrigeration means the removal of _____ from a system.

- A. liquid
- B. pressure
- C. volume
- D. heat** ✓

Q17 Part B (Refrigeration & AC Mechanic)

In a refrigeration system, a 'cold storage' is a _____ refrigeration application.

- A. high temperature
- B. low temperature** ✓
- C. high melting temperature
- D. high boiling temperature



Q18 Part B (Refrigeration & AC Mechanic)

In a commercial refrigeration system, relative humidity (R.H.) is defined as the ____.

- A. ratio of the actual amount of water present in one cubic foot to the amount of moisture needed to saturate the water at that same temperature
- B. ratio of the actual amount of oxygen present in one cubic foot to the amount of moisture needed to saturate the air at that same temperature
- C. ratio of the actual amount of moisture present in one cubic foot to the amount of moisture needed to saturate the air at that same temperature ✓
- D. ratio of the actual amount of refrigerant present in one cubic foot to the amount of moisture needed to saturate the refrigerant at that same temperature

Q19 Part B (Refrigeration & AC Mechanic)

Humidification process is represented by a/an _____ line on the psychrometric chart.

- A. intersecting
- B. vertical ✓
- C. diagonal
- D. curved

Q20 Part B (Refrigeration & AC Mechanic)

In a refrigeration system, which of the following functions is NOT performed by valves?

- A. Regulating pressure
- B. Regulating temperature ✓
- C. Throttling flow
- D. Preventing backflow

Q21 Part B (Refrigeration & AC Mechanic)

The accuracy of measurement by a try square is about:

- A. 0.02 mm per 10 mm length
- B. 0.001 mm per 10 mm length
- C. 0.004 mm per 10 mm length
- D. 0.002 mm per 10 mm length ✓

Q22 Part B (Refrigeration & AC Mechanic)

Which of the following is a major risk associated with fuel spillage?

- A. Fire hazards and environmental contamination ✓
- B. Better lubrication for workshop floors
- C. Increased productivity
- D. Reduced need for ventilation

Q23 Part B (Refrigeration & AC Mechanic)

Which option shows the correct answer when 27°C is converted to the kelvin scale?

- A. - 300 K
- B. 246 K
- C. 300 K ✓
- D. - 246 K

Q24 Part B (Refrigeration & AC Mechanic)

Match the List-I (Chillers) to the List-II (Compression processes) in Air conditioning.

Chiller	Compression Process
(A) Reciprocating	(P) Spiral Rotors
(B) Centrifugal	(Q) Helical Rotors
(C) Screw	(R) Rotating Impeller
(D) Scroll	(S) Uses Piston

- A. A-S, B-R, C-Q, D-P ✓
- B. A-S, B-R, C-P, D-Q
- C. A-R, B-S, C-Q, D-P
- D. A-S, B-Q, C-R, D-P

Q25 Part B (Refrigeration & AC Mechanic)

What is the primary purpose of shielding in electrical cables?

- A. To increase the voltage capacity of the cable
- B. To increase the current-carrying capacity of the cable
- C. To protect the cable from external electromagnetic interference ✓
- D. To prevent heat loss from the cable

Q26 Part B (Refrigeration & AC Mechanic)

In which of the following parts of the vapour compression system does the liquid vapour refrigerant absorb its latent heat of vaporisation from the medium that is to be cooled?

- A. Compressor
- B. Condenser
- C. Expansion valve
- D. Evaporator ✓



Q27 Part B (Refrigeration & AC Mechanic)

Which of the following actions is a part of the emergency response team's responsibilities during an active emergency?

- A. Preparing reports on emergency incidents
- B. Rescuing persons in immediate danger ✓
- C. Conducting routine safety checks
- D. Scheduling regular evacuation drills

Q28 Part B (Refrigeration & AC Mechanic)

A 'halide torch' is used to detect the leak of ____ vapour.

- A. water
- B. acrolein
- C. freon ✓
- D. formaldehyde

Q29 Part B (Refrigeration & AC Mechanic)

Which of the following parts is NOT seen in cold storage plants of a refrigeration system?

- A. Condenser
- B. Evaporator
- C. Boiler ✓
- D. Compressor

Q30 Part B (Refrigeration & AC Mechanic)

In which of the following valves is the inlet located at the outlet of the condenser coil and outlet is located to the inlet of the evaporator coil?

- A. Low side float valve
- B. High side float valve ✓
- C. Electronic expansion valve
- D. Level master control

Q31 Part B (Refrigeration & AC Mechanic)

In a circuit with a NTC type thermistor and a fixed resistor connected in series connected to a DC power supply, what will happen to the output voltage if there is a rise in temperature?

- A. The output voltage will increase. ✓
- B. The output voltage will remain constant.
- C. The output voltage will fluctuate depending on the resistor value.
- D. The output voltage will decrease.

Q32 Part B (Refrigeration & AC Mechanic)

In which of the following types of bottle coolers is pre cool storage space created and circulation of cooling of bottles even?

- A. Vertical type bottle coolers ✓
- B. Visible coolers
- C. Commercial type bottle coolers
- D. Horizontal type bottle coolers

Q33 Part B (Refrigeration & AC Mechanic)

When a cold store is used to store different types of foods, then that cold storage is called ____.

- A. frozen storage
- B. mixed storage ✓
- C. uniform storage
- D. common storage

Q34 Part B (Refrigeration & AC Mechanic)

What is the solution of the causes of valves being bent in train ACs?

- A. Install a new condenser.
- B. Replace the compressor from the AC system.
- C. Evacuate the incondensable gases and moisture from the AC system. ✓
- D. Recover the refrigerant from the AC system.

Q35 Part B (Refrigeration & AC Mechanic)

In a refrigeration system, the heat rejection factor for a condenser is defined as the ratio of ____.

- A. $\frac{\text{heat rejected at the condenser}}{\text{the refrigerating effect}}$ ✓
- B. $\frac{\text{increase in load on the condenser}}{\text{to the increase in compression ratio}}$
- C. $\frac{\text{increase in work done by the condense}}{\text{to the refrigerating effect}}$
- D. $\frac{\text{refrigerating effect}}{\text{to the heat rejected at the condenser}}$

Q36 Part B (Refrigeration & AC Mechanic)

Which of the followings refrigeration systems use non-poisonous liquid (Nitrogen) to cool the space?

- A. Liquid gas refrigeration system ✓
- B. Ice refrigeration system
- C. Dry ice refrigeration system
- D. Water vapour system



Q37 Part B (Refrigeration & AC Mechanic)

Which of the following electrical components of refrigerator is used to activate the defrost heater periodically?

- A. Overload protector
- B. Fan motor
- C. PTC relay
- D. Defrost timer**

**Q38 Part B (Refrigeration & AC Mechanic)**

Which of the following is INCORRECT about the refrigeration unit maintenance of walk-in coolers?

- A. Need not check that the voltage is within system design limits or not**
- B. Check to see whether wire mounting nuts are secure
- C. Heat exchanger inspection and maintenance
- D. Check the contactor for proper operation and for worn contact points

**Q39 Part B (Refrigeration & AC Mechanic)**

The ____ in a car AC cools the cabin by absorbing heat from the car's interior.

- A. accumulator
- B. compressor
- C. evaporator**
- D. condenser

**Q40 Part B (Refrigeration & AC Mechanic)**

In the electrical equipment of refrigeration and air conditioning systems, 'PWM' stands for ____.

- A. Pulse Wide Modelling
- B. Program Width Modulation
- C. Pulse Width Modulation**
- D. Pulse Wide Monitoring

**Q41 Part B (Refrigeration & AC Mechanic)**

Match the Mechanical Components (List-I) of central Air-Conditioning system to its Functions (List-II).

Mechanical Components (List-I)	Functions (List-II)
(A) Ducts	(P) Cool the condensing water
(B) Drier strainer	(Q) Collect liquid refrigerant coming from the condenser
(C) Liquid receiver	(R) Prevent moisture and dust particles
(D) Cooling tower	(S) Carry air from one place to another place

- A. A-S, B-P, C-Q, D-R
- B. A-P, B-R, C-Q, D-S
- C. A-S, B-Q, C-R, D-P
- D. A-S, B-R, C-Q, D-P**

**Q42 Part B (Refrigeration & AC Mechanic)**

Match the columns and select the correct option from the following.

Term	Brief Description
(A) Refrigeration	(P) (Actual C.O. P / theoretical C.O. P)
(B) Refrigerated system	(Q) Equipment employed to maintain the system at a low temperature
(C) Refrigerating system	(R) System which is kept at lower temperature
(D) Relative C.O.P	(S) Cooling or removal of heat from a system

- A. A-S, B-R, C-P, D-Q
- B. A-R, B-S, C-Q, D-P
- C. A-P, B-R, C-Q, D-S
- D. A-S, B-R, C-Q, D-P**

**Q43 Part B (Refrigeration & AC Mechanic)**

High side float valve is a refrigeration control device whose inlet is located at the:

- A. outlet of the condenser coil and outlet is located at the inlet of the evaporator coil**
- B. outlet of the receiver coil and outlet is located at the inlet of the economiser coil
- C. inlet of the condenser coil and outlet is located at the outlet of the evaporator coil
- D. outlet of the compressor coil and outlet is located at the inlet of the condenser coil



Q44 Part B (Refrigeration & AC Mechanic)

Which of the following compressors is a positive displacement machine that compress with two inter fitting, spiral shaped scroll members?

A. Scroll type compressor



B. Screw compressor

C. Centrifugal compressor

D. Axial compressor

Q45 Part B (Refrigeration & AC Mechanic)

In Industrial Air Conditioning, the control is defined as:

A. a device used in commercial HVAC machineries to cool secondary refrigerants

B. starting, stopping or regulation of heating, ventilating, and air conditioning system



C. a microprocessor that continuously monitors data from a network of sensors

D. a device used to generate steam and supply to Air Conditioning system

Q46 Part B (Refrigeration & AC Mechanic)

What is the function of a drier/strainer in a refrigerator?

A. Removes the heat carried by the refrigerant

B. Provides the necessary pumping action to the refrigerant

C. Purifies the refrigerant and eliminates moisture



D. Metres out the required amount of refrigerant to pick the heat from the evaporator

Q47 Part B (Refrigeration & AC Mechanic)

In a logic circuit, three SPST (Single Pole Single Throw) switches are used to implement a logic gate. The switches are connected in series. What is the output of the circuit if all switches are closed?

A. Undefined

B. 1



C. The output will depend on the type of gate used

D. 0

Q48 Part B (Refrigeration & AC Mechanic)

A fire damper in an air-conditioning system is a ____.

A. safety device installed within the ductwork that automatically closes valves when detecting high pressure water flow

B. safety device installed within the ductwork that automatically closes when detecting high heat or smoke from a fire



C. safety device installed within the ductwork that automatically opens when detecting high heat or smoke from a fire

D. safety device installed within the ductwork that automatically opens when detecting high air flow

Q49 Part B (Refrigeration & AC Mechanic)

For which of the following calipers, a screw and nut are provided for opening and closing the caliper legs?

A. Spring joint calipers



B. Firm joint calipers

C. Simple calipers

D. Leg and point calipers

Q50 Part B (Refrigeration & AC Mechanic)

An angle greater than 180 degrees is referred to as

A. a right angle

B. an acute angle

C. an obtuse angle

D. a reflex angle



Q51 Part B (Refrigeration & AC Mechanic)

Which of the following design section is used in inverters to give a steady output voltage of 230 or 110 V AC, irrespective of the load?

A. Pulse width modulation



B. DC converter

C. Power factor correction

D. IGBT transistors



Q52 Part B (Refrigeration & AC Mechanic)

Which of the following equipment of an air conditioning system directs the conditioned air from the circulating fan to the space to be air conditioned at proper point?

- A. Return outlets
- B. Supply outlets
- C. Supply duct
- D. Circulation fan

**Q53 Part B (Refrigeration & AC Mechanic)**

What is the primary goal of the 5S concept?

- A. To replace traditional safety measures
- B. To increase the number of safety regulations
- C. To improve workplace organisation and efficiency
- D. To eliminate the need for maintenance

**Q54 Part B (Refrigeration & AC Mechanic)**

Which of the following care and maintenance of a marking table is INCORRECT?

- A. The marking table should be protected from damage.
- B. The marking table should be protected from rust.
- C. After use, the marking table should be cleaned with a soft cloth.
- D. The surface of the marking table should not be given a thin layer of oil.

**Q55 Part B (Refrigeration & AC Mechanic)**

A rectangular floor measuring 10 m × 8 m is to be tiled. If each tile covers 0.25 m², how many tiles are needed?

- A. 200
- B. 300
- C. 320
- D. 250

**Q56 Part B (Refrigeration & AC Mechanic)**

Which of the following is INCORRECT about line standard?

- A. More accurate due to line thickness
- B. Subject to parallax error
- C. Quick measurements over a wide range
- D. Used to measure the distance between two engraved lines

**Q57 Part B (Refrigeration & AC Mechanic)**

Match the correct meanings/definitions with the respective thermal properties of insulating materials in refrigeration and air conditioning systems.

Thermal properties	Definition
(A) Thermal conductivity	(P) Characterised by flash point, smoke index, fire point
(B) Heat capacity	(Q) Measure of the rate of progression of temperature rise in an insulating material
(C) Thermal diffusivity	(R) Measure of the heat absorbed for a certain temperature rise
(D) Combustibility	(S) Ability of a material to retard the flow of heat

- A. A-P, B-R, C-Q, D-S
- B. A-S, B-Q, C-R, D-P
- C. A-S, B-R, C-P, D-Q
- D. A-S, B-R, C-Q, D-P

**Q58 Part B (Refrigeration & AC Mechanic)**

Which of the following is a primary difference between a primary and a secondary electrochemical cell?

- A. A secondary cell produces more energy than a primary cell.
- B. A primary cell can be recharged, while a secondary cell cannot be recharged.
- C. A primary cell cannot be recharged, while a secondary cell can be recharged.
- D. There is no difference between primary and secondary cells.

**Q59 Part B (Refrigeration & AC Mechanic)**

Why do cars have treaded tyres?

- A. To increase friction and grip on the road
- B. To reduce weight
- C. To decrease friction
- D. To increase speed

**Q60 Part B (Refrigeration & AC Mechanic)**

Which of the following applications of a vapour compression system use the refrigerated cabinets to store the perishable food products at the required temperature levels between -10°C to 30°C?

- A. Visible cooler
- B. Deep freezer
- C. Water cooler
- D. Bottle cooler



Q61 Part B (Refrigeration & AC Mechanic)

Which of the following ducts carries the used air from the air-conditioned room and supplies it to the AHU?

- A. Fresh air duct
- B. Extended plenum duct
- C. Supply duct
- D. Return duct



Q62 Part B (Refrigeration & AC Mechanic)

The automatic device that controls the temperature of the refrigeration unit is _____.

- A. barometer
- B. thermostat
- C. regulator
- D. manometer



Q63 Part B (Refrigeration & AC Mechanic)

What is the primary purpose of preventive maintenance?

- A. To increase the workload of employees
- B. To reduce unexpected equipment failures
- C. To delay repairs until breakdowns occur
- D. To eliminate the need for regular inspections



Q64 Part B (Refrigeration & AC Mechanic)

Which of the following commercial compressors consists of two meshing helically grooved rotors with very close tolerance within a housing?

- A. Twin screw compressor
- B. Scroll compressor
- C. Reciprocating compressor
- D. Centrifugal compressor



Q65 Part B (Refrigeration & AC Mechanic)

In Refrigeration and Air Conditioning systems, the 'refrigeration process' refers to _____ cycle.

- A. closed
- B. cooling
- C. heating
- D. open



Q66 Part B (Refrigeration & AC Mechanic)

A statement and conclusion for pictorial drawing are given below. Determine the logical relationship between them.

Statement: Pictorial drawings are three-dimensional and provide a visual representation of an object.

Conclusion: Therefore, pictorial drawings are useful for describing the shape of a piece part or component.

- A. The conclusion does not logically follow from the statement.
- B. The conclusion is partially supported by the statement.
- C. The conclusion is unrelated to the statement.
- D. The conclusion logically follows from the statement.



Q67 Part B (Refrigeration & AC Mechanic)

Match the following designations of sheets with their respective trimmed sizes in length and breadth.

Designation Trimmed Size

- A) A0 P) 297 × 420
- B) A1 Q) 420 × 594
- C) A2 R) 594 × 841
- D) A3 S) 841 × 1189

- A. A-S ; B-R ; C-Q ; D-P
- B. A-Q ; B-R ; C-S ; D-P
- C. A-S ; B-P ; C-Q ; D-R
- D. A-P ; B-R ; C-Q ; D-S



Q68 Part B (Refrigeration & AC Mechanic)

Sine bars are used when a high degree of accuracy less than _____ is needed for measuring angles.

- A. 1 degree
- B. 30 degrees
- C. 1 minute
- D. 30 minutes



Q69 Part B (Refrigeration & AC Mechanic)

The compressor is controlled by a _____ switch during both the defrost and refrigeration cycle.

- A. velocity control
- B. volume control
- C. pressure control
- D. temperature control



Q70 Part B (Refrigeration & AC Mechanic)

What is the term used to describe programs that distinguish between uppercase and lowercase letters, treating "yes" and "YES" as different inputs?

- A. Case-insensitive
- B. Numerical
- C. Case-sensitive ✓
- D. Alphabetical

Q71 Part B (Refrigeration & AC Mechanic)

In HVAC systems, a ____ is a self-contained cooling device that has all required parts, such as condenser, compressor, and evaporator in a single enclosure.

- A. screw chiller
- B. packaged chiller ✓
- C. flooded type chiller
- D. scroll chiller

Q72 Part B (Refrigeration & AC Mechanic)

The SI unit of 'ultimate stress' is _____.

- A. pascal (Pa) ✓
- B. newton (N)
- C. newton per meter (N/m)
- D. joule per square meter (J/m^2)

Q73 Part B (Refrigeration & AC Mechanic)

Which of the following conversions are correct?

- A. $1 \text{ L} = 1000 \text{ dm}^3$ and $1 \text{ mL} = 1000 \text{ cm}^3$
- B. $1000 \text{ L} = 1 \text{ dm}^3$ and $1000 \text{ mL} = 1 \text{ cm}^3$
- C. $1 \text{ L} = 1 \text{ dm}^3$ and $1 \text{ mL} = 1 \text{ cm}^3$ ✓
- D. $1000 \text{ L} = 1 \text{ dm}^3$ and $1 \text{ mL} = 1000 \text{ cm}^3$

Q74 Part B (Refrigeration & AC Mechanic)

What will be the COP of a refrigeration system if the work input is 80 kJ/kg and refrigeration effect produced is 160 kJ/kg of refrigerant flowing?

- A. 4
- B. 1
- C. 2 ✓
- D. 3

Q75 Part B (Refrigeration & AC Mechanic)

Natural rubber is soft at high temperatures and brittle at low temperatures; hence raw rubber is heated with sulphur and other additives at a temperature range between 373 – 415 K to make it strong. This process is called ____ of rubber.

- A. vulcanisation ✓
- B. molding
- C. latex
- D. extrusion



Part B (Refrigeration & AC Mechanic)

75 Questions • Answer Key

Q1 Part B (Refrigeration & AC Mechanic)

When creating 10 mm single-stroke capital letters in vertical style, what does the 10 mm distance between horizontal parallel lines represent?

- A. Letter width
- B. Letter height
- C. Stroke thickness
- D. Interline spacing

Q2 Part B (Refrigeration & AC Mechanic)

Which of the following colours is commonly used for caution signs?

- A. Blue
- B. Yellow
- C. Red
- D. Green

Q3 Part B (Refrigeration & AC Mechanic)

Which of the following is the primary reason why copper is widely used as a conductor in electrical wiring?

- A. Copper has low resistance and high conductivity.
- B. Copper has a low melting point.
- C. Copper is abundant and inexpensive.
- D. Copper has high resistance to electricity.

Q4 Part B (Refrigeration & AC Mechanic)

Which of the following components of a walk-in cooler is used to mount condensing unit assembly?

- A. Condensate water evaporator
- B. Condenser unit rack
- C. Drain line heater
- D. Heat exchanger

Q5 Part B (Refrigeration & AC Mechanic)

Which of the following expansion valves functions to maintain a constant pressure in the evaporator?

- A. Electronic expansion valve
- B. Level master control
- C. Automatic expansion valve
- D. Thermostatic expansion valve

Q6 Part B (Refrigeration & AC Mechanic)

Which of the following care and maintenance of car air-conditioning is INCORRECT?

- A. Do not replace the evaporator coil to prevent ice formation.
- B. Vacuum the filter if it is dirty from driving in dusty or polluted areas.
- C. Replace the cabin air filter regularly to prevent dust and pollen from clogging the system.
- D. Perform electrical repairs to resolve issues with the electrical components of the AC unit.

Q7 Part B (Refrigeration & AC Mechanic)

A 100-mm prick punch with a 7-mm diameter body could have a 2.5-mm diameter point ground to an angle of _____.

- A. 90°
- B. 30°
- C. 120°
- D. 45°

Q8 Part B (Refrigeration & AC Mechanic)

In which of the following components of ice cube machine, is the water frozen in tubes, extended vertically within a surrounding casing?

- A. Compressor
- B. Condenser
- C. Tube ice generator
- D. Capillary tube

Q9 Part B (Refrigeration & AC Mechanic)

The SI Unit of heat is _____.

- A. kilogram
- B. Ohm
- C. Watt
- D. Joule



Q10 Part B (Refrigeration & AC Mechanic)

Convert 8.5% into a decimal.

- A. 0.85
- B. 8.5
- C. 0.085
- D. 85

Q11 Part B (Refrigeration & AC Mechanic)

Removal of moisture from the air, without change in its dry bulb temperature (DBT), is called _____.

- A. latent heat
- B. humidification
- C. dehumidification
- D. sensible heat

Q12 Part B (Refrigeration & AC Mechanic)

A machine working on a Carnot cycle operates between 305 K and 260 K. What will be the COP when it is operated as a refrigerating machine?

- A. 3.84
- B. 5.78
- C. 4.25
- D. 2.67

Q13 Part B (Refrigeration & AC Mechanic)

HVAC system selection does NOT depend on the _____.

- A. owner's desire
- B. building configuration
- C. number of tubes
- D. climate condition

Q14 Part B (Refrigeration & AC Mechanic)

For a given subcooling in °C, the increase in refrigeration effect is _____.

- A. proportional to the specific heat of the liquid
- B. proportional to the entropy of the liquid
- C. inversely proportional to the specific heat of the liquid
- D. proportional to the irreversibility of the liquid

Q15 Part B (Refrigeration & AC Mechanic)

In a series circuit, three resistors of 10 ohms, 20 ohms, and R ohms are connected in series with a 12 V battery. What is the value of resistance R if current flowing in the circuit is 0.2 A?

- A. 10 ohms
- B. 20 ohms
- C. 30 ohms
- D. 40 ohms

Q16 Part B (Refrigeration & AC Mechanic)

The SI unit of temperature is/are _____.

- A. both kelvin and celsius
- B. celsius
- C. kelvin
- D. fahrenheit

Q17 Part B (Refrigeration & AC Mechanic)

_____ controllers uses compressed air to control Central Industrial Air Conditioning Systems.

- A. Robotic
- B. Automated
- C. Pneumatic
- D. Hydraulic

Q18 Part B (Refrigeration & AC Mechanic)

Refrigeration controls are the refrigeration tools used to control the _____.

- A. flow of refrigerant at various points throughout the refrigeration cycle
- B. pressure of refrigerant at various points throughout the refrigeration cycle
- C. heat of refrigerant at various points throughout the refrigeration cycle
- D. temperature of refrigerant at various points throughout the refrigeration cycle

Q19 Part B (Refrigeration & AC Mechanic)

Which type of line is used to represent hidden edges or surfaces in a technical drawing, as per BIS SP 46-2003?

- A. Continuous thin line
- B. Continuous thick line
- C. Dashed thin line
- D. Chain thin line



Q20 Part B (Refrigeration & AC Mechanic)

Which of the following calipers are used for marking lines, parallel to inside and outside edges and for locating the centre of round bars?

A. Spring joint calipers

B. Leg and point calipers



C. Simple calipers

D. Firm joint calipers

Q21 Part B (Refrigeration & AC Mechanic)

Who is authorised to conduct road tests on workshop vehicles?

A. Only trained and certified personnel



B. Visitors to the workshop

C. Any employee

D. The company accountant

Q22 Part B (Refrigeration & AC Mechanic)

Which of the following statements is INCORRECT about end standard?

A. It measures the distance between two parallel flat surfaces.

B. Faces are subject to wear.

C. It is slower but more accurate.

D. It is used to measure the distance between two engraved lines.



Q23 Part B (Refrigeration & AC Mechanic)

What is the effect of scaling in a water cooled condenser?

A. Scale coating prevents the heat transfer from the hot gas to the water.



B. Scale coating acts as a reservoir for excess liquid refrigeration.

C. Scale coating provides necessary pumping action to the refrigerant.

D. Scale coating increases the heat transfer from the hot gas to the water.

Q24 Part B (Refrigeration & AC Mechanic)

During which of the following processes of the working of a bus AC system does the cool liquid through the expansion valve become gas and the gaseous refrigerant absorb a lot of heat energy?

A. Evaporation



B. Throttling

C. Condensation

D. Compression

Q25 Part B (Refrigeration & AC Mechanic)

The latent heat of fusion of ice is ____ kJ/kg.

A. 536

B. 436

C. 336



D. 236

Q26 Part B (Refrigeration & AC Mechanic)

What is the function of ducts in Central Industrial Air Conditioning System?

A. Used to carry air from one place to another place



B. Located in the liquid line to prevent moisture and dust particles in Air Conditioning System

C. Reducing the pressure and amount of liquid refrigerant into the evaporator

D. Collect liquid refrigerant coming from condenser and supply to the expansion valve

Q27 Part B (Refrigeration & AC Mechanic)

What is the typical temperature range of a mercury-based clinical thermometer?

A. 0°C to 100°C

B. 35°C to 42°C



C. 0°C to 50°C

D. -10°C to 110°C

Q28 Part B (Refrigeration & AC Mechanic)

Isobutane (R-600a) is never used for _____ of existing CFC-12 or HFC-134 a systems.

A. heating

B. conversion/retrofitting



C. cooling

D. expansion

Q29 Part B (Refrigeration & AC Mechanic)

A voltmeter with a resistance of 10,000 ohms is connected across a circuit that has a voltage of 50 V. What is the current flowing through the voltmeter?

A. 2 mA

B. 1 mA

C. 5 mA



D. 4 mA



Q30 Part B (Refrigeration & AC Mechanic)

Identify the correct statement(s) regarding the Industrial Air-Conditioning System.

Statement 1: Three-way valves are traditionally used in constant-flow pumping systems.

Statement 2: In three-way valves, unused water is bypassed at the coil.

- A. Only Statement 2 is correct.
- B. Both Statement 1 and Statement 2 are correct.**
- C. Both Statement 1 and Statement 2 are incorrect.
- D. Only Statement 1 is correct.

Q31 Part B (Refrigeration & AC Mechanic)

In refrigeration and air conditioning systems, manual valves regulate the flow of _____ throughout the piping system.

- A. air
- B. milk
- C. refrigerant**
- D. nitrogen

Q32 Part B (Refrigeration & AC Mechanic)

In air conditioning systems, screw chiller uses _____ compression process.

- A. zigzag rotors
- B. spiral rotors
- C. rotating impeller
- D. helical rotors**

Q33 Part B (Refrigeration & AC Mechanic)

Which of the following units of a train AC consists of pressure gauges and pressure cutouts to protect the compressor against high pressure?

- A. Gauge board**
- B. Condenser
- C. Evaporator unit
- D. Compressor

Q34 Part B (Refrigeration & AC Mechanic)

The pencil type double mouth filter drier, used in the refrigerator is made of _____.

- A. titanium
- B. silicon
- C. brass
- D. copper**

Q35 Part B (Refrigeration & AC Mechanic)

If the length of a resistor is doubled, what happens to its resistance, assuming all other factors remain constant?

- A. The resistance is doubled.**
- B. The resistance remains the same.
- C. The resistance is halved.
- D. The resistance quadruples.

Q36 Part B (Refrigeration & AC Mechanic)

Find the lateral surface area of a cube with side length 5 cm.

- A. 125 cm²
- B. 150 cm²
- C. 200 cm²
- D. 100 cm²**

Q37 Part B (Refrigeration & AC Mechanic)

Which of the following parts of a vapour compression system allows the liquid refrigerant under high pressure and temperature to pass at a controlled rate after reducing its pressure and temperature?

- A. Evaporator
- B. Condenser
- C. Receiver
- D. Expansion valve**

Q38 Part B (Refrigeration & AC Mechanic)

Which of the following terms in the 5S concept refers to making a habit of maintaining the established procedures?

- A. Shine
- B. Set
- C. Sort
- D. Sustain**

Q39 Part B (Refrigeration & AC Mechanic)

Which of the following metals has the lowest melting point?

- A. Mercury**
- B. Iron
- C. Lead
- D. Gold



Q40 Part B (Refrigeration & AC Mechanic)

Squirrel cage induction motor is _____ phase induction motor.

- A. not a
- B. a two
- C. a single
- D. a three

**Q41 Part B (Refrigeration & AC Mechanic)**

Match the given halocarbon refrigerants with their correct refrigerant numbers.

Chemical names	Refrigerant numbers
A. Methyl chloride	P. R-14
B. Dichlorodifluoromethane	Q. R-13
C. Monochlorotrifluoromethane	R. R-12
D. Carbon tetrafluoride	S. R-40

- A. A-S, B-Q, C-R, D-P
- B. A-S, B-R, C-Q, D-P
- C. A-S, B-R, C-P, D-Q
- D. A-R, B-S, C-Q, D-P

**Q42 Part B (Refrigeration & AC Mechanic)**

The wave set of hacksaw teeth set has a pitch of _____.

- A. 2.0 mm
- B. 0.5 mm
- C. 0.8 mm
- D. 1.0 mm

**Q43 Part B (Refrigeration & AC Mechanic)**

The temperature at which air becomes saturated with water vapour is called:

- A. dry bulb temperature
- B. wet bulb depression
- C. dew point temperature
- D. wet bulb temperature

**Q44 Part B (Refrigeration & AC Mechanic)**

Which of the following types of chisels is used for separating metals after chain drilling?

- A. Cross-cut chisel
- B. Flat chisel
- C. Web chisel
- D. Diamond point chisel

**Q45 Part B (Refrigeration & AC Mechanic)**

The _____ part in a frost-free refrigerator provides pumping action to the refrigerant.

- A. compressor
- B. capillary tube
- C. receiver
- D. condenser

**Q46 Part B (Refrigeration & AC Mechanic)**

What is the minimum age for employment in factories or mines or other hazardous employment, according to Article 24 of the Indian Constitution?

- A. 14 years
- B. 12 years
- C. 16 years
- D. 18 years

**Q47 Part B (Refrigeration & AC Mechanic)**

Which of the following remote controllers in split AC quickly maximises the cooling effect in any operation mode?

- A. Powerful operation
- B. Swing
- C. Mode selector button
- D. Timer cancel

**Q48 Part B (Refrigeration & AC Mechanic)**

In the case of ammonia, the power consumption per ton refrigeration with wet compression as compared with that of dry compression is _____.

- A. 20% more
- B. 10% less
- C. 20% less
- D. 10% more



Q49 Part B (Refrigeration & AC Mechanic)

When passing stationary vehicles, keep a watch on _____ who may come out suddenly from the front of the stationary vehicle. While overtaking, it should be done on the _____ side. Always keep a good _____ between your vehicle and others.

A. cyclists; left; interval

B. vehicles; right; gap

C. drivers; left; space

D. pedestrians; right; distance



Q50 Part B (Refrigeration & AC Mechanic)

What is the SI unit of 'volume'?

A. Litres

B. Cubic centimetre

C. Cubic metre



D. Millilitres

Q51 Part B (Refrigeration & AC Mechanic)

Which of the following statements about title block is/are true?

Statement 1: The title block is situated in the bottom right-hand corner of the drawing sheet.

Statement 2: The contents of the title block are standardised and cannot be modified to suit individual company needs.

A. Both statements are false

B. Statement 1 is false, but statement 2 is true

C. Statement 1 is true, but statement 2 is false



D. Both statements are true

Q52 Part B (Refrigeration & AC Mechanic)

Which of the following applications of a vapour compression system is a type of refrigerated cabinet that displays merchandise as well as cools it?

A. Bottle cooler

B. Visible cooler



C. Deep freezer

D. Water cooler

Q53 Part B (Refrigeration & AC Mechanic)

Which of the following properties of lubricant oils is a measure of the resistance that the oil offers to the flow of electric current?

A. Cloud point

B. Viscosity

C. Dielectric strength



D. Chemical stability

Q54 Part B (Refrigeration & AC Mechanic)

What is the function of Air flapper or Louver in refrigeration systems?

A. Increasing the pressure and temperature of the refrigerant gas

B. Controlling the influx of cold air into a refrigerating chamber



C. Lowering the pressure of the refrigerant from high to low

D. Cooling the refrigerant gas, changing it to a liquid

Q55 Part B (Refrigeration & AC Mechanic)

Vertical type bottle coolers employ _____ convection of air inside storage cooling compartment.

A. gravitational

B. forced



C. natural

D. buoyant



Q56 Part B (Refrigeration & AC Mechanic)

Match the following types of lines with their correct descriptions according to their orientation and characteristics.

Description	Type of Line
A. A line that is neither parallel to a horizontal plane nor perpendicular to it.	1. Horizontal line
B. A line that is perpendicular to horizontal lines.	2. Vertical line
C. A line that changes its direction continuously.	3. Inclined line
D. A line that is parallel to a horizontal plane.	4. Curved line

A. A - 1, B - 2, C - 3, D - 4

B. A - 2, B - 3, C - 4, D - 1

C. A - 3, B - 2, C - 4, D - 1

D. A - 2, B - 1, C - 4, D - 3

Q57 Part B (Refrigeration & AC Mechanic)

Which of the following remote controllers in split AC is used to start or stop the fast cooling?

A. Timer off button

B. Timer on button

C. Power saver button

D. Turbo button

Q58 Part B (Refrigeration & AC Mechanic)

In which of the following unitary air conditioners, are all components in one unit, like a rooftop package unit?

A. Window air conditioners

B. Ducted split systems

C. Ductless systems

D. Central air conditioners

Q59 Part B (Refrigeration & AC Mechanic)

Which of the following parts of VRF or VRV system is used to return oil from the oil separator to the compressor?

A. Solenoid valve

B. Electronic expansion valve

C. High pressure sensor

D. Four-way valve

Q60 Part B (Refrigeration & AC Mechanic)

Which of the following chemicals is NOT added to ordinary water for making brine solution?

A. Sodium chloride

B. Ethylene glycol

C. Propylene glycol

D. Hydrochloric acid

Q61 Part B (Refrigeration & AC Mechanic)

Which of the following regarding ventilation inspection and commissioning is INCORRECT?

A. Proper ventilation is crucial for maintaining good indoor air quality

B. A well-balanced ventilation system cannot help optimise energy usage by preventing unnecessary over-ventilation

C. Testing the functionality of automated controls that regulate the ventilation system, such as sensors and actuators

D. Many building codes and standards require regular ventilation system checks to ensure compliance

Q62 Part B (Refrigeration & AC Mechanic)

The automatic expansion valve is a ____ reducing device in a refrigeration system.

A. temperature

B. density

C. pressure

D. volume

Q63 Part B (Refrigeration & AC Mechanic)

Which of the following types of control is NOT used in air-conditioning system?

A. Electric

B. Electronics

C. Pneumatic

D. Hydraulic



Q64 Part B (Refrigeration & AC Mechanic)

It is always desirable to sub cool the liquid refrigerant before the _____.

A. expansion valve



B. condenser

C. evaporator

D. compressor

Q65 Part B (Refrigeration & AC Mechanic)

Which of the following information is necessary to construct a rectangle?

A. Length of two adjacent sides



B. Length of one side and the area of the rectangle

C. Only the length of one side

D. Only the length of the diagonal

Q66 Part B (Refrigeration & AC Mechanic)

In a logic circuit, two inputs A and B are applied to an AND gate, and the output of the AND gate is connected to the input of a NOT gate. If the inputs A and B are both at logic 0, what will be the output of the entire circuit?

A. Undefined

B. 0

C. 1



D. 2

Q67 Part B (Refrigeration & AC Mechanic)

_____ type of controllers have semiconductor sensors in Air conditioning system.

A. Electronic



B. Electric

C. Pneumatic

D. Hydraulic

Q68 Part B (Refrigeration & AC Mechanic)

For your safety at work, which of the following should be ensured?

1. All the required protective clothing and equipment are used.
2. Training and instruction necessary for performing tasks safely have been received.

A. Only statement 1

B. Neither statement 1 nor 2

C. Only statement 2

D. Both statements 1 and 2



Q69 Part B (Refrigeration & AC Mechanic)

In an air-conditioning system, control systems are used to _____.

A. clean air, either fresh, recirculated or both

B. regulate automatically the amount of cooling or warming



C. connect to heat exchange surfaces

D. direct the air to the room through the outlets

Q70 Part B (Refrigeration & AC Mechanic)

Which of the following electrical components is NOT used by hydrocarbon appliances?

A. The overload protector is sealed bimetal.

B. The compressor relay is in solid state.

C. ON/OFF and door switches should be of non-sealed type.



D. The thermostat is either located in a sealed electrical box or a solid state.

Q71 Part B (Refrigeration & AC Mechanic)

In a refrigeration system, _____ equipment is used for measuring the dry bulb and wet bulb temperature simultaneously.

A. orificemeter

B. psychrometer



C. barometer

D. manometer

Q72 Part B (Refrigeration & AC Mechanic)

Which of the following 'V' blocks will have one 'V' groove and two grooves (slots) on either side for clamping in two positions?

A. Double level single groove 'V' block

B. Matched pair 'V' block

C. Single level double groove 'V' block



D. Single level single groove 'V' block



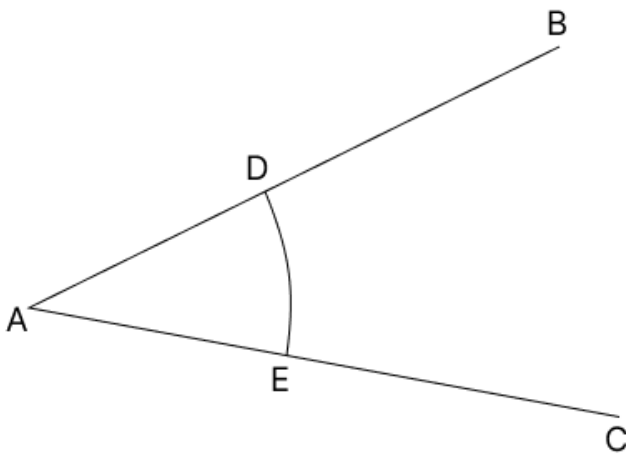
Q73 Part B (Refrigeration & AC Mechanic)

Which of the following statements is NOT correct for using scribes?

- A. Scribe points are very sharp, so they are to be handled very carefully.
- B. While scribing lines, the scribe is used like a pencil.
- C. Do not put the scribe in your pocket.
- D. Place a cork on the point when in use to prevent accidents. ☒

Q74 Part B (Refrigeration & AC Mechanic)

In the process of bisecting angle BAC in the given figure, why do we draw arcs from points D and E?

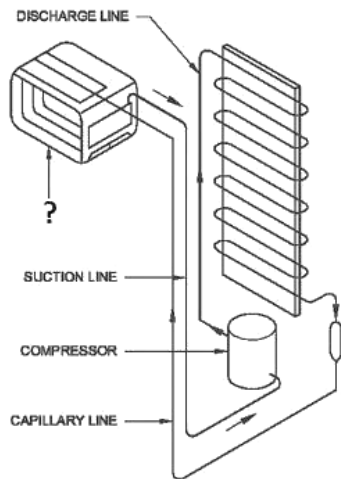


- A. To find midpoint AB
- B. To mark equal lengths
- C. To intersect line AC
- D. To intersect above A ☒



Q75 Part B (Refrigeration & AC Mechanic)

Identify the part labelled with a question mark (?) from the skeleton of conventional household refrigerator.



A. Heating coil

B. Cooling coil



C. Steam engine

D. Turbine

