

S No.	NOS	Element	Difficulty Level	Type of Question	Question	Option A	Option B	Option C	Option D	Correct Answer	
1	ELE/MCR-0001: Essentials of Refrigeration and Air Conditioning	Environmental Impact and Fundamentals of Air-Conditioning	Easy	Direct Concept Based MCQ	Which refrigerant has Zero Ozone Depletion Potential (ODP)?	HCFC-22	CFC-12	R-32	R-11	C	
2			Easy	Direct Concept Based MCQ	Which instrument is used to measure refrigerant pressure during servicing?	Clamp Meter	Manifold Gauge Set	Vacuum Pump	Multimeter	B	
3			Easy	Direct Concept Based MCQ	Which component rejects heat to the outdoor air?	Evaporator	Capillary Tube	Condenser	Filter Drier	C	
4						5	Easy	Direct Concept Based MCQ	Before brazing copper tubes, what should be done first?	Clean tube surface	Charge refrigerant
6			Good Service Practices and Alternative Refrigerants	Easy	Direct Concept Based MCQ	Which PPE is essential while brazing?	Helmet only	safety goggles and gloves	Ear plugs	Apron only	B
7		Easy		Direct Concept Based MCQ	Which gas is used for pressure testing?	Oxygen	Nitrogen	CO2	Hydrogen	B	
8		Medium		Logical MCQ	During installation of a split AC, which instrument is used by the technician to remove moisture and air from the system before refrigerant charging?	Manifold gauge	Recovery machine	Charging scale	Vacuum pump	D	
9		Medium		Logical / Concept Based MCQ	A technician has completed refrigerant charging in a split AC and observes bubbles in the sight glass. What should be the next correct action to ensure proper charging and sealing of the system?	Immediately disconnect the charging hose without closing the valves	Add more refrigerant without checking system pressure	Close the manifold valve, allow the system to stabilize, and then cool the	Turn off the compressor and vent refrigerant to the atmosphere	C	
10		Medium		Logical / Concept Based MCQ	A technician recommends replacing an HCFC-22 air-conditioner with an HFC-32 system. Which factor is the MOST important while selecting HFC-32 as an alternative refrigerant for safe operation?	High ozone depletion potential	Lower global warming potential with mild flammability	Low energy efficiency	Compatibility with water as lubricant	B	
11		Servicing Practices for Room Air-Conditioners with Flammable Refrigerants	Medium	Sequencing	Correct order after brazing?	Charging-Leak-Evacuation	Pressure Test-Leak Test-Evacuation-Charging	Evacuation-Charging-Leak	Leak-Charging	B	
12			Medium	Assertion-Reason	Assertion (A): Evacuation using a vacuum pump removes moisture from the refrigeration system. Reason (R): Moisture can form ice and block the expansion device.	Both A and R are true and R is the correct explanation of A	Both A and R are true but R is not the correct explanation of A	A is true but R is false	A is false but R is true	A	
13			Medium	Logical / Concept Based MCQ (Job-role based)	After replacing a defective compressor, the technician performs system flushing. What is the main reason for this step?	To increase refrigerant flow	To remove acid and carbon deposits from the pipeline	To cool the condenser coil	To reduce power supply voltage	B	
14			Easy	Direct Concept Based MCQ	Which machine safely recovers refrigerant?	Vacuum pump	Recovery machine	Charging scale	Leak detector	B	
15			Easy	Direct Concept Based MCQ	Which tool permanently joins copper tubes?	Flaring tool	Swaging tool	Brazing torch	Pipe cutter	C	
16		Copper Tube Processing and Installation of Split Air-Conditioners	Medium	Logical / Concept Based MCQ	Why does a technician use a tube bender instead of bending a copper tube by hand?	To increase refrigerant pressure	To avoid flattening and maintain proper refrigerant flow	To reduce tube length	To increase tube temperature	B	
17			Medium	Assertion-Reason	Assertion (A): Cleaning the copper tube surface before brazing ensures a strong joint. Reason (R): Oxide layers on the tube surface prevent proper bonding of filler material.	Both A and R are true and R is the correct explanation of A	Both A and R are true but R is not the correct explanation of A	A is true but R is false	A is false but R is true	A	
18			Easy	Direct Concept Based MCQ	Which material is commonly used by a technician as a filler metal while brazing copper tubes in an air-conditioning system?	Soft solder	Silver brazing alloy	Aluminium wire	PVC glue	B	
19			Medium	Logical / Concept Based MCQ	A technician is selecting a location for installing the indoor unit (IDU) of a split AC. Which condition is MOST suitable for proper cooling and airflow?	Near the ceiling with unobstructed air circulation and away from heat sources	Directly above a window exposed to sunlight	In a closed cabinet for better aesthetics	Very close to the floor for easy servicing	A	
20			Medium	Rearrangement / Sequencing	Select the correct sequence followed by a technician after mounting the IDU and ODU during split AC installation.	Refrigerant charging → Leak testing → Evacuation → Performance testing	Leak testing → Refrigerant charging → Evacuation → Performance testing	Leak testing → Evacuation → Refrigerant charging → Performance testing	Evacuation → Leak testing → Refrigerant charging → Performance testing	C	
21		Energy Efficiency, Soft Skills, and Technician Certification	Hard level	Case Study Based MCQ	A customer complains about higher electricity bills and poor cooling. The technician finds a dirty condenser coil and low refrigerant charge. How do these issues contribute to global warming?	Increased airflow reduces emissions	Higher power consumption and refrigerant leakage increase indirect and	Reduced compressor running time lowers emissions	Clean filters increase cooling load	B	
22			Hard level	Case Study Based MCQ	A technician advises a customer to set the AC at 26°C, clean filters regularly, and keep doors closed. What is the combined effect of these practices?	Reduced cooling capacity only	Increased refrigerant pressure	Energy-efficient operation and reduced electricity consumption	Increased compressor cycling	C	
23			Hard level	Multi-Concept MCQ	A 5-star rated inverter AC replaces a 2-star non-inverter AC of the same capacity. What will be the MOST likely outcome when operated at 24°C for the same duration?	Higher power consumption due to inverter	Less energy consumption due to higher ISEER value	Same energy consumption as capacity is equal	Lower cooling performance	B	
24			Hard level	Case Study Based MCQ	While explaining repair charges to a customer, the technician maintains eye contact, uses simple language, and provides a written estimate. What professional competency is being demonstrated?	Only technical servicing skill	Effective communication and professional behaviour	Refrigerant handling practice	Safety during brazing	B	
25			Hard level	Numerical Based MCQ	A company hires only certified RAC technicians and observes that refrigerant leakage during servicing is reduced from 20% to 5%. If the total refrigerant handled in a month is 100 kg, how much refrigerant emission is	5 kg	10 kg	15 kg	20 kg	C	