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39	A	B	C	D	E

PRACTICE QUESTIONS

National Inspection Testing and Certification Corporation

SCRM

STAR Commercial Refrigeration Mastery

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for National Inspection Testing and Certification Corporation **SCRM**, each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

If something looks wrong

Send us three things and we will check it:

- the exam code, **SCRM**
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

QUESTION 1

MULTIPLE CHOICE

A technician is servicing a low-temperature commercial freezer that operates with a cascade refrigeration system. Which of the following refrigerants are commonly used as the low-stage refrigerant in commercial cascade systems? (Choose two.)

- ☒ **A** R-744 (CO₂)
- ☐ **B** R-290 (propane)
- ☒ **C** R-23 (CHF₃)
- ☐ **D** R-134a
- ☐ **E** R-12

ANSWER A - C

WHY Cascade low-temperature stages commonly use R-744 (CO₂) or R-23 to achieve the very low evaporator temperatures required for low-temperature commercial freezers. R-12 is obsolete under the Montreal Protocol, R-134a is generally used in medium-temperature applications, and R-290 (propane) is a hydrocarbon with flammability concerns that limit its use in large commercial systems like this.

QUESTION 2

MULTIPLE CHOICE

A walk-in cooler uses an electric defrost system to clear ice from the evaporator coil. Which of the following components are typically part of an electric defrost circuit? (Choose two.)

- ☒ **A** Defrost heater elements
- ☐ **B** Liquid line solenoid valve
- ☒ **C** Defrost termination thermostat
- ☐ **D** Compressor crankcase heater
- ☐ **E** TXV sensing bulb

ANSWER A - C

WHY Electric defrost circuits include the defrost heater elements that melt ice from the evaporator coil and the defrost termination thermostat that ends the defrost cycle once the coil reaches the target temperature. The liquid line solenoid, crankcase heater, and TXV sensing bulb are not defrost-circuit components.

QUESTION 3

TRUE FALSE

The high-pressure safety control on a commercial refrigeration system is designed to shut the compressor down if the discharge pressure exceeds the control's cut-out setting, in order to protect the compressor from overpressure conditions.

☒ **A** True☐ B False**ANSWER A**

WHY True. The high-pressure safety (high-pressure cut-out) control monitors discharge pressure and breaks the compressor control circuit when pressure exceeds its cut-out setting, protecting the compressor and system from dangerous overpressure conditions.

QUESTION 4

SINGLE CHOICE

Which component in a commercial refrigeration system is responsible for removing heat from the refrigerant by rejecting it to the outdoor ambient air?

☐ A Evaporator☒ **B** Condenser☐ C Thermostatic expansion valve☐ D Accumulator**ANSWER B**

WHY The condenser rejects heat from the high-pressure, high-temperature refrigerant vapor to the outdoor ambient air (or to a water loop), causing the refrigerant to condense. The evaporator absorbs heat from the conditioned space, the TXV meters refrigerant into the evaporator, and the accumulator protects the compressor from liquid floodback.

QUESTION 5

SINGLE CHOICE

A technician measures the following values at a running medium-temperature case: suction line temperature = 35°F, suction pressure = 68 psig (R-404A saturation $\approx$ 30°F). What is the calculated suction superheat?

- ☐ A 3°F
- ☒ B 5°F
- ☐ C 10°F
- ☐ D 15°F

ANSWER B

WHY Superheat is the difference between the actual suction line temperature and the saturation (dew) temperature at the suction pressure. $35^{\circ}\text{F} - 30^{\circ}\text{F} = 5^{\circ}\text{F}$ of superheat. Low superheat like this indicates a risk of liquid floodback to the compressor.

QUESTION 6

SINGLE CHOICE

Under EPA Section 608 regulations, when a technician is opening a commercial refrigeration system for service, what must be done before the refrigerant is released to the atmosphere?

- ☐ A The refrigerant must be vented outdoors using an approved hose
- ☒ B The refrigerant must be recovered and certified using EPA-approved recovery equipment
- ☐ C The refrigerant must be transferred to a pressurized nitrogen tank for storage
- ☐ D No action is required if the system contains less than 5 pounds of refrigerant

ANSWER B

WHY EPA Section 608 prohibits the knowing release of any refrigerant during maintenance, service, repair, or disposal. Refrigerant must be recovered using EPA-certified recovery equipment before the system is opened. Venting, self-certification thresholds, and nitrogen transfer are not compliant recovery methods.

QUESTION 7 SINGLE CHOICE

A medium-temperature walk-in cooler has a short run time, a frosted/liquid-filled sight glass at the liquid line, and low subcooling. The most likely cause is:

- ☒ **A** A restricted metering device (TXV) or restricted filter-drier
- ☐ **B** An undercharged refrigerant system
- ☐ **C** A flooded evaporator with insufficient superheat
- ☐ **D** An oversized condenser fan motor

ANSWER A

WHY A restriction at the metering device or filter-drier causes a pressure drop in the liquid line, leading to flashing refrigerant before the TXV/evaporator. This produces a frothy/liquid-filled sight glass and low subcooling at the condenser outlet. An undercharge typically presents with low suction pressure and high superheat, not low subcooling at the liquid line.

QUESTION 8 SINGLE CHOICE

A scroll compressor in a commercial rack system has a crankcase heater, a low-pressure safety control, and a discharge line thermostat. The primary purpose of the crankcase heater is to:

- ☐ **A** Increase refrigerant subcooling in the condenser
- ☒ **B** Prevent refrigerant migration into the compressor oil during off-cycles
- ☐ **C** Raise the discharge pressure during startup
- ☐ **D** Melt ice that forms on the compressor body

ANSWER B

WHY The crankcase heater warms the compressor oil during off-cycles so that refrigerant that has migrated into the crankcase boils off and returns to the suction side. This prevents liquid refrigerant from diluting the oil and causing oil foaming, slugging, and mechanical damage at startup. It does not affect subcooling, discharge pressure, or external ice.

QUESTION 9

SINGLE CHOICE

Which defrost initiation method is most appropriate for a low-temperature freezer case where minimizing electric defrost cycles is desired due to high energy costs?

- ☐ A Time-initiated, temperature-terminated electric defrost set for six cycles per day
- ☒ B Demand (frost-sensitive) defrost initiation
- ☐ C Continuous electric defrost
- ☐ D Off-cycle defrost

ANSWER B

WHY Demand (frost-sensitive) defrost initiates a defrost cycle only when actual frost accumulation on the evaporator is detected, minimizing unnecessary defrost cycles and energy use. Time-initiated fixed schedules typically run more cycles than needed, off-cycle defrost is only suitable for above-freezing applications, and continuous electric defrost wastes significant energy.