

# **PRACTICE EXAM 19: SIGNAL MAINTAINER SIMULATION (150 QUESTIONS)**

---

*This 150-question written practice simulation prepares decision sequencing, safety, electrical and electronic reasoning, electro-mechanical equipment, signals, detection, schematics, tools, troubleshooting, and records. The MTA New York City Transit Signal Maintainer assessment includes practical skills; this written set does not reproduce physical equipment handling. Use 65% as a study benchmark. The current official notice, local rules, and authorized training procedures control.*

1. While preparing equipment for a functional test, a signal condition is unclear. What should be preserved first?

- A. The most restrictive known state
- B. The technician's initial guess
- C. The last permissive command
- D. The quickest visible indication

2. When a signal response appears more permissive than expected, a drawing is available but the maintainer remembers a different circuit. Which reference controls?

- A. Personal memory of the circuit
- B. The current authorized drawing
- C. An older printed copy
- D. A nearby equipment label

**3.** After a protective device operates, a planned task involves several workers and a live operating area. What should occur before work begins?

- A. A task briefing and hazard review
- B. A test without communication
- C. A reset of every control
- D. Immediate component removal

**4.** While checking a battery-backed supply, hazardous energy may remain after an isolation step. What is the next safe action?

- A. Remove the warning tag
- B. Assume the isolation worked
- C. Begin probing the load
- D. Verify the expected zero-energy condition

**5.** When two indications do not agree, a test could change an indication seen by operations. What should happen before the test?

- A. Proceed silently to save time
- B. Communicate and obtain required authorization
- C. Disconnect the nearest relay
- D. Clear the indication manually

**6.** During a planned maintenance shift, a temporary jumper is installed during an authorized test. What is essential?

- A. Hide it inside the case
- B. Treat it as a permanent repair
- C. Identify, control, and remove it under procedure
- D. Leave it for the next shift

**7.** Before beginning a wayside inspection, a meter and lead set will be used near electrical energy. What should be checked?

- A. Ratings, condition, and intended measurement
- B. Whether the display is bright
- C. Only the battery level
- D. Only the color of the leads

**8.** While checking a recently restored circuit, an instruction conflicts with the equipment condition or authority is unclear. What is the professional response?

- A. improvise a replacement step
- B. Stop and obtain clarification
- C. Continue until the symptom changes
- D. Ask an unqualified bystander

**9.** When a normal indication is not present, work is near an active trackway. Which priority controls the task?

- A. Keep the cabinet open
- B. Avoid documenting the delay
- C. Protect people and train movement first
- D. Finish the measurement quickly

**10.** While confirming the limits of a work order, poor visibility makes a field observation uncertain. What is the best response?

- A. Ignore the environmental condition
- B. Record a definite result anyway
- C. Move equipment without a briefing
- D. Control the hazard and improve the observation

**11.** When a control-room report conflicts with field evidence, a work order does not clearly include a proposed change. What should the maintainer do?

- A. Expand the work to save a trip
- B. Use a previous job as permission
- C. Confirm the authorized scope before changing equipment
- D. Change the most accessible part

**12.** During a track-detection review, a fault crosses the boundary between two maintenance groups. What makes the handoff useful?

- A. Send the equipment without notes
- B. Repeat every test without results
- C. Report only that it failed
- D. State condition, evidence, limits, and next action

**13.** While reviewing an intermittent failure history, an event log may help explain an intermittent failure. What should happen to the record?

- A. Replace it with a guess
- B. Preserve it before resetting or clearing evidence
- C. Delete old events immediately
- D. Rely on memory after repair

**14.** When an authorized procedure reaches an unclear step, a non-routine bypass appears necessary to continue. What is the proper decision?

- A. Escalate for authorized direction
- B. Install it because it is temporary
- C. Ask the operator to approve it casually
- D. Use it without labeling

**15.** During a post-maintenance return-to-service check, a repair appears complete. What confirms the task is actually closed?

- A. Closing the equipment case only
- B. Removing the work order from the desk
- C. Test, restore, document, and communicate the final state
- D. The original symptom disappearing once

**16.** Before documenting the final condition, what does a voltage measurement between two points describe?

- A. The potential difference between those points
- B. The power rating of the fuse
- C. The current through every branch
- D. The resistance of the entire system

**17.** In a controlled training scenario, what must exist for current to flow through an intended control path?

- A. A ground label alone
- B. An open contact and no return
- C. A meter connected in parallel
- D. A source, a complete path, and a load

**18.** When preparing a handoff to the next maintainer, an open conductor is suspected in a control circuit. What is the defining condition?

- A. The source has doubled
- B. The intended path is interrupted
- C. The fuse becomes larger
- D. Every branch is shorted

**19.** After comparing the field condition with the drawing, what is a likely effect of an unintended low-resistance path across a source?

- A. Improved insulation resistance
- B. Excess current and possible protection operation
- C. Guaranteed lower load current
- D. A permanent open circuit

**20.** Before making any temporary circuit change, a source reads normally with no load but falls at the load. What should be considered?

- A. A perfect circuit with no fault
- B. A change in signal color only
- C. A larger-than-normal conductor
- D. A voltage drop or source-delivery problem

**21.** During a weather-affected inspection, what is common to all elements in a simple series path?

- A. Every branch is independent
- B. No element affects another
- C. The same current flows through each element
- D. Each element has identical voltage

**22.** After a switch movement does not complete, what is a key feature of parallel branches?

- A. They provide separate paths across common nodes
- B. They make every load series-connected
- C. They always carry identical current
- D. They eliminate the need for a return

**23.** Before opening a relay or equipment case, why is polarity important in a DC control circuit?

- A. It determines how devices and protective paths operate
- B. It changes an AC waveform into a fuse
- C. It eliminates the need for a source
- D. It makes an open contact conductive

**24.** During a drawing and terminal audit, which distinction matters when selecting a measurement method?

- A. DC always has zero current
- B. AC alternates while DC maintains a substantially fixed polarity
- C. AC and DC use identical instruments
- D. AC never uses a return

**25.** After a route does not release as expected, what is a transformer commonly used to provide?

- A. A replacement for every fuse
- B. A direct-current short circuit
- C. A changed AC voltage level or isolation
- D. A mechanical switch position

**26.** While isolating a suspected open circuit, what is the intended protective action of a fuse under sufficient overcurrent?

- A. It increases the source voltage
- B. It locks every route
- C. It makes the load more conductive
- D. Its element opens the circuit

**27.** While reviewing a new trouble report, why must ground or reference be identified before measuring?

- A. The reference determines what the reading means
- B. It guarantees zero voltage everywhere
- C. It replaces the circuit drawing
- D. Ground always equals the load

**28.** After an unexpected indication appears, why can a de-energized circuit still require caution?

- A. The meter removes every hazard
- B. De-energized always means discharged
- C. Stored energy exists only in lamps
- D. Stored energy may remain in components or conductors

**29.** During a supervisor-directed diagnostic task, what condition is normally required before measuring resistance in a circuit?

- A. The load is forced on
- B. The fuse is bypassed
- C. The circuit is isolated from energized sources
- D. The meter is placed across a live source

**30.** During a recurring-fault investigation, what can unexpected heat provide during a power investigation?

- A. Evidence that no load exists
- B. A clue that current or resistance is abnormal
- C. A reason to remove protection
- D. Proof that the circuit is healthy

**31.** After a measurement does not match the prediction, what is the basic conduction behavior of a diode?

- A. It creates mechanical travel
- B. It stores every input forever
- C. It opens in both directions
- D. It favors current in one direction

**32.** While preparing equipment for a functional test, why may a zener device appear in a reference circuit?

- A. It provides mechanical locking
- B. It detects rail occupancy directly
- C. It helps maintain a defined voltage region
- D. It replaces every relay contact

**33.** When a signal response appears more permissive than expected, how can a transistor function in a control circuit?

- A. As a permanent open wire
- B. As a controlled electronic switch
- C. As a mechanical limit stop
- D. As a track wheel shunt

**34.** After a protective device operates, what separates a relay coil from its contacts?

- A. The coil's magnetic action controls isolated contacts
- B. The contacts have no circuit function
- C. The contacts are always the source
- D. The coil is a fuse element

**35.** While checking a battery-backed supply, what does normally open describe?

- A. Its voltage while energized
- B. Its guaranteed safe indication
- C. The defined normal condition of a contact
- D. Its resistance under every fault

**36.** When two indications do not agree, what should be considered when an LED indication is dark?

- A. The device, polarity, source, and control path
- B. Only the remote display
- C. A guaranteed track occupancy
- D. Only the label color

**37.** During a planned maintenance shift, what is a useful first inspection of a printed circuit board?

- A. Reset the processor repeatedly
- B. Look for damage, contamination, and abnormal connections
- C. Change every adjustment
- D. Remove all components

**38.** Before beginning a wayside inspection, what can a poorly seated connector cause?

- A. A permanent increase in source voltage
- B. Automatic route release
- C. Guaranteed correct input logic
- D. Intermittent or missing signals

**39.** While checking a recently restored circuit, what is electromagnetic interference likely to produce?

- A. A verified open circuit
- B. A higher fuse rating
- C. Unwanted disturbance coupled into equipment
- D. A mechanical lock position

**40.** When a normal indication is not present, what is a watchdog function intended to detect?

- A. A normal open contact
- B. Loss of expected processor activity
- C. A broken rail by sight
- D. A missing mechanical cover

**41.** While confirming the limits of a work order, why does an electronic input threshold matter?

- A. The input interprets a range as a logic state
- B. It changes a fuse into a relay
- C. It removes every noise source
- D. It proves the field device is aligned

**42.** When a control-room report conflicts with field evidence, what is the purpose of optical isolation?

- A. Create a mechanical throw
- B. Replace a current return
- C. Increase rail shunting
- D. Transfer a signal while limiting direct electrical coupling

**43.** During a track-detection review, why is electrostatic discharge control important around boards?

- A. A small discharge can damage sensitive components
- B. It changes AC into DC
- C. It makes every relay pick up
- D. It improves track ballast

**44.** While reviewing an intermittent failure history, what is the safest way to interpret an HMI indication?

- A. Treat it as physical proof
- B. Ignore the field device
- C. Reset it until it agrees
- D. Compare it with field evidence and the current reference

**45.** When an authorized procedure reaches an unclear step, why is a successful reset not necessarily a repair?

- A. The fault is proven permanent
- B. The underlying cause may still be present
- C. The source has been replaced
- D. A reset always changes wiring

**46.** During a post-maintenance return-to-service check, what sequence best describes a powered switch movement?

- A. Route clearing without position proof
- B. Detection, removal, and guessing
- C. Command, motor action, movement, and detection
- D. Lamp change, fuse removal, and release

**47.** Before documenting the final condition, what may unusually high motor current suggest?

- A. Perfect alignment
- B. No load on the motor
- C. A healthy detection circuit
- D. Obstruction, friction, or mechanical overload

**48.** In a controlled training scenario, what does switch detection help prove?

- A. The route is automatically authorized
- B. The physical position meets the required condition
- C. The lamp has correct color
- D. The motor is always healthy

**49.** When preparing a handoff to the next maintainer, what is the first concern when a mechanism meets resistance?

- A. Protect the equipment and investigate the obstruction
- B. Ignore the resistance
- C. Apply more force immediately
- D. Bypass the lock

**50.** After comparing the field condition with the drawing, why is point alignment important to a switch function?

- A. It only changes cabinet lighting
- B. It removes the need for locking
- C. It affects movement, detection, and safe route conditions
- D. It proves the battery is charged

**51.** Before making any temporary circuit change, what is the purpose of a mechanical or electrical lock?

- A. Create a permissive indication alone
- B. Prevent an unsafe change from the required position
- C. Replace all detection
- D. Increase motor speed

**52.** During a weather-affected inspection, what should a direction contactor provide in a motor circuit?

- A. An automatic work authorization
- B. A permanent short across the motor
- C. A replacement for position detection
- D. Controlled selection of the commanded direction

**53.** After a switch movement does not complete, what can a limit or detection contact reveal?

- A. Whether a defined travel or position condition exists
- B. The weather forecast
- C. The source's full capacity
- D. A guaranteed root cause

**54.** Before opening a relay or equipment case, why can contamination affect a mechanism?

- A. It eliminates lubrication needs
- B. It proves the motor is open
- C. It can add friction or interfere with contacts
- D. It guarantees smoother travel

55. During a drawing and terminal audit, what may repeated thermal protection operation indicate?

- A. A persistent overload or inadequate cooling
- B. A clean contact path
- C. A perfectly unloaded motor
- D. A correct route release

56. After a route does not release as expected, what should happen before dismantling a mechanical assembly?

- A. Remove the detection wires
- B. Force the mechanism by hand
- C. Observe and record the condition first
- D. Reset the remote display

57. While isolating a suspected open circuit, what is required after an adjustment to a switch mechanism?

- A. Immediate release without testing
- B. A complete authorized functional and protective test
- C. A new unrelated adjustment
- D. A visual glance only

58. While reviewing a new trouble report, when is manual movement of a powered mechanism acceptable?

- A. Before notifying operations
- B. Whenever the motor is slow
- C. When the route is unclear
- D. Only when authorized and controlled by procedure

**59.** After an unexpected indication appears, two indications disagree about switch position. What is the best conclusion?

- A. The field indication must be wrong
- B. The position is not yet proven
- C. The remote indication always controls
- D. The route can be cleared anyway

**60.** During a supervisor-directed diagnostic task, what should the maintainer verify before closing a serviced equipment case?

- A. Only the original symptom
- B. Only the work order number
- C. Covers, fasteners, wiring, and restored condition
- D. Only the cabinet color

**61.** During a recurring-fault investigation, what gives a signal aspect its operating meaning?

- A. The brightness by itself
- B. The lamp brand alone
- C. A maintainer's preference
- D. The applicable rule and signal system

**62.** After a measurement does not match the prediction, a signal is dark when a permissive display was expected. What is the safe interpretation?

- A. Treat the condition as restrictive until proven otherwise
- B. Assume the route is clear
- C. Replace the rule with memory
- D. Force the lamp on

**63.** While preparing equipment for a functional test, a signal lamp or LED is dark. What should be isolated?

- A. Only the remote screen
- B. Only the route label
- C. The device, source, control path, and return
- D. Only the lens

**64.** When a signal response appears more permissive than expected, what is the best way to analyze a signal circuit?

- A. Clear the route first
- B. Start with the brightest lamp
- C. Replace every relay
- D. Trace source, logic, output, indication, and return

**65.** After a protective device operates, what does a permissive indication not provide by itself?

- A. Any information about a display
- B. Blanket authorization to ignore governing rules
- C. A reason to read the drawing
- D. A condition that can be tested

**66.** While checking a battery-backed supply, why compare related indications during a fault?

- A. The comparison can reveal where states diverge
- B. It proves a lamp is good
- C. It authorizes a bypass
- D. It replaces all measurements

**67.** When two indications do not agree, a signal appears clear but a required condition is unverified. What is the proper response?

- A. Reset the interlocking
- B. Do not assume the permissive condition is valid
- C. Proceed because the display is visible
- D. Ignore the missing proof

**68.** During a planned maintenance shift, how should an aspect test be designed?

- A. It should force the most permissive state
- B. It should bypass protection
- C. It should verify the response without creating a false indication
- D. It should change several inputs at once

**69.** Before beginning a wayside inspection, why can route conditions affect a signal aspect?

- A. The lens supplies the logic
- B. The indication is independent of occupancy
- C. The lamp chooses the route
- D. The aspect depends on proven route and protection states

**70.** While checking a recently restored circuit, what should be separated when troubleshooting relay and electronic selection logic?

- A. Input conditions, selection logic, and output state
- B. The case cover and label
- C. Only the lamp color
- D. The work order and weather

**71.** When a normal indication is not present, how should color and position be interpreted?

- A. According to a generic internet chart
- B. According to personal experience only
- C. According to the governing local signal rules
- D. According to the nearest wire color

**72.** While confirming the limits of a work order, what should a persistent indication discrepancy become?

- A. A reason to erase the log
- B. A permanent bypass
- C. A hidden informal adjustment
- D. A documented condition for authorized follow-up

**73.** When a control-room report conflicts with field evidence, what is the protective purpose of a train-stop function?

- A. Initiate a restrictive response when required conditions fail
- B. Increase lamp intensity
- C. Guarantee a permissive movement
- D. Replace all track detection

**74.** During a track-detection review, a control-room indication conflicts with the field device. What should guide the next decision?

- A. The more permissive indication
- B. The discrepancy must be protected and investigated
- C. The older maintenance note
- D. A guessed equipment state

**75.** While reviewing an intermittent failure history, what makes an intermittent aspect fault easier to analyze?

- A. A replacement without records
- B. A report that says only intermittent
- C. A single reset
- D. Timestamps, sequence, and conditions of occurrence

**76.** When an authorized procedure reaches an unclear step, what does a train wheelset normally do to a track circuit?

- A. It provides a shunting path across the rails
- B. It clears the protected section
- C. It increases rail insulation
- D. It opens every relay coil

**77.** During a post-maintenance return-to-service check, what does a track relay release generally indicate?

- A. The rail is guaranteed intact
- B. The route is automatically released
- C. The detection circuit is no longer in its clear state
- D. The source is fully charged

**78.** Before documenting the final condition, what should be considered when a track circuit loses its source?

- A. The rails become shorter
- B. A receiver or relay may drop restrictive
- C. The train stop is bypassed
- D. The indication must become permissive

**79.** In a controlled training scenario, why are rail bonds and connections important?

- A. They eliminate shunting
- B. They create a permissive indication alone
- C. They maintain the intended conductive path
- D. They replace the receiver

**80.** When preparing a handoff to the next maintainer, what can cause a false occupancy indication?

- A. Only a brighter lamp
- B. A fault that prevents the expected clear response
- C. A perfectly isolated rail
- D. A completed route release

**81.** After comparing the field condition with the drawing, what is the safe significance of a suspected broken rail response?

- A. The detection should favor a restrictive condition
- B. The relay should be forced up
- C. The indication can be ignored
- D. The signal should clear automatically

**82.** Before making any temporary circuit change, why must track-circuit boundaries be identified?

- A. They make every relay identical
- B. They determine the weather
- C. They replace the current drawing
- D. They define which section the evidence applies to

**83.** During a weather-affected inspection, what does a coded track receiver interpret?

- A. A mechanical switch throw
- B. A work-order number
- C. A specified electrical or coded detection signal
- D. A lens color only

**84.** After a switch movement does not complete, why must a train-movement detection test be controlled?

- A. It cannot affect a relay
- B. It can affect operating indications and protection
- C. It removes the need for communication
- D. It only changes cabinet temperature

**85.** Before opening a relay or equipment case, local and remote occupancy indications disagree. What is established?

- A. The track is definitely clear
- B. The remote display is always correct
- C. The field relay is always wrong
- D. The detection state is not yet resolved

**86.** During a drawing and terminal audit, how can wet ballast affect a track circuit?

- A. It can reduce insulation and create leakage
- B. It guarantees a clear response
- C. It removes the need for bonds
- D. It opens the relay by command

**87.** After a route does not release as expected, what is required before performing a shunt test?

- A. A bypass of the receiver
- B. A cleared route without notice
- C. A casual verbal guess
- D. Authorization, protection, and the approved test method

**88.** While isolating a suspected open circuit, what must be true before a clear indication is accepted?

- A. The last train has passed
- B. Only the lamp is illuminated
- C. All required detection and protection conditions are proven
- D. The relay case is closed

**89.** While reviewing a new trouble report, what is useful when the same occupancy fault recurs?

- A. Compare trend information with prior conditions
- B. Erase earlier work records
- C. Repeat one reset only
- D. Change the indication label

**90.** After an unexpected indication appears, what should be verified after a detection repair?

- A. Only the relay cover
- B. The intended occupied and clear responses
- C. Only the remote display
- D. Only the source voltage

**91.** During a supervisor-directed diagnostic task, what is the central purpose of interlocking?

- A. Replace maintenance records
- B. Prevent conflicting or unsafe combinations of movements
- C. Increase every signal aspect
- D. Remove track detection

**92.** During a recurring-fault investigation, what does route locking hold?

- A. Route elements against an unsafe change
- B. Only the lamp lens
- C. The weather condition
- D. A technician's personal setting

**93.** After a measurement does not match the prediction, why does approach locking matter?

- A. It clears an occupied track
- B. It replaces signal rules
- C. It limits casual changes after a train approaches
- D. It increases motor speed

**94.** While preparing equipment for a functional test, what must a switch prove before a route can rely on it?

- A. Only the operator saw movement
- B. Only a command was sent
- C. Only the motor ran
- D. The required position and detection condition

**95.** When a signal response appears more permissive than expected, why can occupancy prevent a signal from clearing?

- A. The lamp is too bright
- B. The work order is closed
- C. The relay label is missing
- D. The protected route condition is not fully proven

**96.** After a protective device operates, what should be confirmed before clearing a signal?

- A. Only the nearest relay
- B. Every required route, switch, and protection condition
- C. Only the last command
- D. Only the signal head

**97.** While checking a battery-backed supply, what does a stick circuit commonly provide?

- A. A controlled memory of a circuit state
- B. A replacement for every input
- C. A permanent short circuit
- D. A mechanical lock only

**98.** When two indications do not agree, missing proof in an interlocking condition should cause what response?

- A. An automatic route clear
- B. A forced relay pick-up
- C. A restrictive or non-permissive response
- D. A hidden bypass

**99.** During a planned maintenance shift, why test one interlocking condition at a time?

- A. It avoids reading the drawing
- B. It preserves cause-and-effect information
- C. It guarantees a faster repair
- D. It makes every fault disappear

**100.** Before beginning a wayside inspection, what is route release evidence used to establish?

- A. That the route can safely return to an available state
- B. That the work order is unnecessary
- C. That every lamp is new
- D. That the source is isolated

**101.** While checking a recently restored circuit, what should be considered when control can be local or remote?

- A. Only the last screen viewed
- B. The more permissive command
- C. The closest lamp
- D. Which control location currently has authority

**102.** When a normal indication is not present, two conflicting commands appear at once. What is the safe approach?

- A. Apply both commands
- B. Clear the route manually
- C. Protect the condition and resolve the authority
- D. Accept the faster command

**103.** While confirming the limits of a work order, why is bypassing interlocking protection unacceptable without authorization?

- A. It proves the route is clear
- B. It can defeat a safety-critical dependency
- C. It always improves reliability
- D. It only changes paperwork

**104.** When a control-room report conflicts with field evidence, what is needed after interlocking maintenance?

- A. A documented functional test and controlled restoration
- B. A visual inspection only
- C. A permissive indication alone
- D. A reset without records

**105.** During a track-detection review, what is especially useful in a route fault?

- A. Only a remembered symptom
- B. Only a replacement part number
- C. The sequence of commands, indications, and releases
- D. Only the final lamp state

**106.** While reviewing an intermittent failure history, what is the best starting point when reading a signal schematic?

- A. Ignore the return path
- B. Count every wire first
- C. Start at the nearest lamp
- D. Identify the function being controlled

**107.** When an authorized procedure reaches an unclear step, what do schematic symbols and references provide?

- A. A guarantee of current field condition
- B. A replacement for testing
- C. A route authorization
- D. A standardized way to relate parts to functions

**108.** During a post-maintenance return-to-service check, what does a contact's normal state describe?

- A. Its defined condition before the operating action
- B. Its voltage under load
- C. Its permitted route
- D. Its state during every fault

**109.** Before documenting the final condition, why trace both potential and current paths?

- A. Potential replaces the drawing
- B. A voltage path may not complete current
- C. They are always identical
- D. Current never needs a return

**110.** In a controlled training scenario, why are terminal numbers important?

- A. They set the fuse rating
- B. They determine aspect color
- C. They connect the drawing reference to field wiring
- D. They replace a test instrument

**111.** When preparing a handoff to the next maintainer, what does a wire label help establish?

- A. The route release time
- B. The intended conductor identity and connection
- C. The weather condition
- D. The measured current value

**112.** After comparing the field condition with the drawing, what can a parallel path or backfeed cause?

- A. A stronger insulation boundary
- B. A guaranteed open circuit
- C. A clean route release
- D. A misleading voltage or unexpected operation

**113.** Before making any temporary circuit change, how should an open and a short be distinguished?

- A. Both always remove current
- B. Both mean the fuse is healthy
- C. An open interrupts; a short creates an unintended path
- D. Neither affects indications

**114.** During a weather-affected inspection, which drawing should be used for a field decision?

- A. The current authorized revision
- B. A remembered sketch
- C. A generic internet diagram
- D. A superseded copy

**115.** After a switch movement does not complete, what should happen when field wiring differs from the drawing?

- A. Ignore the difference
- B. Protect the condition and report the discrepancy
- C. Edit the drawing informally
- D. Force the wire into place

**116.** Before opening a relay or equipment case, how should a jumper appear in controlled documentation?

- A. Hidden from the record
- B. Shown as permanent wiring
- C. Identified with its location, purpose, and removal status
- D. Recorded only from memory

**117.** During a drawing and terminal audit, what does a revision marker help the maintainer determine?

- A. Which information changed and when
- B. Which lamp is brightest
- C. Which route is safest by itself
- D. Which relay is fastest

**118.** After a route does not release as expected, why identify the interface between control and field equipment?

- A. It replaces the work order
- B. It eliminates the need for handoff
- C. It guarantees matching indications
- D. It defines where evidence and responsibility change

**119.** While isolating a suspected open circuit, what is useful to write on a schematic during diagnosis?

- A. Unmarked guesses
- B. Expected states and verified observations
- C. Permanent changes without approval
- D. Only the final answer

**120.** While reviewing a new trouble report, what drawing information belongs in a technical handoff?

- A. Only the equipment color
- B. Only the technician's initials
- C. Only the drawing title
- D. The reference used and the relevant tested boundary

**121.** After an unexpected indication appears, how should a meter be selected?

- A. Select by lead color
- B. Use the largest display
- C. Match its function and rating to the task
- D. Choose the oldest instrument

**122.** During a supervisor-directed diagnostic task, what should be inspected before using meter leads?

- A. Insulation, probes, connections, and condition
- B. Only the printed brand
- C. Only the case color
- D. Only the battery label

**123.** During a recurring-fault investigation, what is the purpose of a prove-test-prove sequence?

- A. Confirm the tester works before and after contact
- B. Replace a circuit drawing
- C. Force the expected result
- D. Increase the circuit voltage

**124.** After a measurement does not match the prediction, where should a voltage measurement be placed?

- A. Across a random wire pair
- B. Across defined points that answer the next question
- C. Across any convenient cover
- D. At the nearest ground label

**125.** While preparing equipment for a functional test, when is a continuity test appropriate?

- A. Across a live power source
- B. Across an energized relay coil
- C. Before identifying the return
- D. On an isolated path whose connection is being checked

**126.** When a signal response appears more permissive than expected, why should a circuit be isolated before resistance testing?

- A. Isolation increases current
- B. The meter supplies every load
- C. External energy can distort readings or damage meters
- D. Resistance requires a permissive signal

**127.** After a protective device operates, how is current normally measured with a conventional meter?

- A. The meter is clipped to the case
- B. The meter is placed in series with the path
- C. The meter is placed across the source
- D. The leads are left open

**128.** While checking a battery-backed supply, what can a clamp meter help measure?

- A. A route lock position
- B. A lens alignment
- C. A schematic revision
- D. Current without opening the conductor path

**129.** When two indications do not agree, what can an oscilloscope add to a signal investigation?

- A. Time and waveform information
- B. A mechanical adjustment
- C. A permanent repair
- D. Automatic authorization

**130.** During a planned maintenance shift, what controls the use of an insulation tester?

- A. The remote indication alone
- B. A desire for a larger number
- C. The authorized procedure and equipment limits
- D. The nearest open contact

**131.** Before beginning a wayside inspection, why does instrument category rating matter?

- A. It sets the signal aspect
- B. It shows the instrument's safe environment limits
- C. It identifies the wire label
- D. It replaces protective equipment

**132.** While checking a recently restored circuit, why does probe placement matter?

- A. It guarantees a correct answer
- B. It removes circuit loading
- C. It changes the drawing revision
- D. The placement defines what the measurement actually compares

**133.** When a normal indication is not present, what should be selected before contacting a circuit?

- A. A setting chosen after contact
- B. The highest current range always
- C. A range and function suitable for the expected value
- D. A resistance range on a live source

**134.** While confirming the limits of a work order, what makes a measurement record useful?

- A. Value, units, points, condition, and time
- B. Only a rounded number
- C. Only the instrument brand
- D. Only the final diagnosis

**135.** When a control-room report conflicts with field evidence, a measurement is unexpected. What should happen first?

- A. Ignore the reading
- B. Force the expected value
- C. Recheck the instrument, reference, and circuit state
- D. Change the component immediately

**136.** During a track-detection review, what should be defined before troubleshooting begins?

- A. The most convenient test point
- B. The replacement part
- C. The final repair time
- D. The observed symptom and its operational effect

**137.** While reviewing an intermittent failure history, how should a failure be reproduced?

- A. By repeating every unsafe action
- B. Only in a controlled, safe condition
- C. By bypassing protection
- D. By changing several variables

**138.** When an authorized procedure reaches an unclear step, why are known-good and known-bad boundaries useful?

- A. They narrow the suspected fault area
- B. They guarantee a failed component
- C. They replace authorization
- D. They eliminate documentation

**139.** During a post-maintenance return-to-service check, what is the purpose of dividing a circuit path?

- A. Force the relay to pick up
- B. Make every branch identical
- C. Avoid measuring the source
- D. Separate possible fault locations using evidence

**140.** Before documenting the final condition, what does a half-split method do?

- A. Tests a boundary that divides remaining possibilities
- B. Changes two components at once
- C. Erases the original symptom
- D. Assumes the midpoint is faulty

**141.** In a controlled training scenario, why change one variable at a time?

- A. It avoids reading the drawing
- B. It guarantees the first guess
- C. It preserves the meaning of the result
- D. It makes every repair permanent

**142.** When preparing a handoff to the next maintainer, what should be recorded for an intermittent fault?

- A. Only the word intermittent
- B. Time, sequence, environment, and symptom conditions
- C. Only the successful reset
- D. Only the final replacement

**143.** After comparing the field condition with the drawing, when is a wiggle or disturbance test acceptable?

- A. Whenever the fault is inconvenient
- B. Before recording the condition
- C. When authorized, controlled, and safe for the equipment
- D. As a substitute for every test

**144.** Before making any temporary circuit change, why can a reset mislead a troubleshooter?

- A. It permanently changes the wiring
- B. It confirms the route is clear
- C. It always proves the board failed
- D. It may clear the symptom without removing the cause

**145.** During a weather-affected inspection, what separates evidence from assumption?

- A. A quick replacement
- B. An observed result that can be traced
- C. A confident explanation
- D. A familiar component name

**146.** After a switch movement does not complete, what should happen at the limit of the maintainer's authority?

- A. Stop, protect the condition, and escalate
- B. Continue with an unapproved bypass
- C. Guess the missing procedure
- D. Release the equipment informally

**147.** Before opening a relay or equipment case, what verifies that a correction worked?

- A. A closed cabinet only
- B. A verbal promise
- C. Repeat the original function and protection test
- D. A new symptom disappearing

**148.** During a drawing and terminal audit, what does root-cause thinking add after a symptom is corrected?

- A. It asks why the failure occurred and could recur
- B. It assumes the part was defective
- C. It replaces functional testing
- D. It ends documentation

**149.** After a route does not release as expected, what is valuable in a recurring-fault log?

- A. Only the latest repair
- B. Patterns across time, equipment, and conditions
- C. Only the operator's first guess
- D. Only the part price

**150.** While isolating a suspected open circuit, what should be done when evidence remains insufficient?

- A. Change the largest component
- B. Close the record as complete
- C. Choose the most permissive answer
- D. Preserve the safe state and obtain support

## Practice Exam 19: Answer Key and Explanations

- 1. A** — The correct answer is The most restrictive known state. In practice, preserve the most restrictive known state. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.
- 2. B** — The correct answer is The current authorized drawing. In practice, use the current authorized drawing. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.
- 3. A** — The correct answer is A task briefing and hazard review. In practice, complete the task briefing and hazard review. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.
- 4. D** — The correct answer is Verify the expected zero-energy condition. In practice, verify the expected zero-energy condition. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.
- 5. B** — The correct answer is Communicate and obtain required authorization. In practice, communicate and obtain required authorization. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.
- 6. C** — The correct answer is Identify, control, and remove it under procedure. In practice, identify, control, and remove it under procedure. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.
- 7. A** — The correct answer is Ratings, condition, and intended measurement. In practice, check ratings, condition, and intended measurement. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.
- 8. B** — The correct answer is Stop and obtain clarification. In practice, stop and obtain clarification. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.
- 9. C** — The correct answer is Protect people and train movement first. In practice, protect people and train movement first. This preserves the safest known condition. It gives the maintainer evidence for the

next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**10. D** — The correct answer is Control the hazard and improve the observation. In practice, control the hazard and improve the observation. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**11. C** — The correct answer is Confirm the authorized scope before changing equipment. In practice, confirm the authorized scope before changing equipment. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**12. D** — The correct answer is State condition, evidence, limits, and next action. In practice, state condition, evidence, limits, and next action. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**13. B** — The correct answer is Preserve it before resetting or clearing evidence. In practice, preserve it before resetting or clearing evidence. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**14. A** — The correct answer is Escalate for authorized direction. In practice, escalate for authorized direction. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**15. C** — The correct answer is Test, restore, document, and communicate the final state. In practice, test, restore, document, and communicate the final state. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change.

**16. A** — The correct answer is The potential difference between those points. In practice, measure the potential difference between those points. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**17. D** — The correct answer is A source, a complete path, and a load. In practice, confirm a source, complete path, and load. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**18. B** — The correct answer is The intended path is interrupted. In practice, locate where the intended path is interrupted. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**19. B** — The correct answer is Excess current and possible protection operation. In practice, treat excess current and protection operation as hazards. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**20. D** — The correct answer is A voltage drop or source-delivery problem. In practice, investigate voltage drop or source delivery. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**21. C** — The correct answer is The same current flows through each element. In practice, analyze the same current through each element. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**22. A** — The correct answer is They provide separate paths across common nodes. In practice, analyze separate paths across common nodes. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**23. A** — The correct answer is It determines how devices and protective paths operate. In practice, verify polarity before judging device operation. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**24. B** — The correct answer is AC alternates while DC maintains a substantially fixed polarity. In practice, distinguish alternating from fixed polarity. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**25. C** — The correct answer is A changed AC voltage level or isolation. In practice, check for changed AC level or isolation. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**26. D** — The correct answer is Its element opens the circuit. In practice, expect the fuse element to open the circuit. This preserves the safest known condition. It gives the maintainer evidence for the next

decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**27. A** — The correct answer is The reference determines what the reading means. In practice, identify the reference before interpreting the reading. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**28. D** — The correct answer is Stored energy may remain in components or conductors. In practice, check for stored energy before contact. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**29. C** — The correct answer is The circuit is isolated from energized sources. In practice, isolate the circuit before measuring resistance. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**30. B** — The correct answer is A clue that current or resistance is abnormal. In practice, use heat as a clue to abnormal current or resistance. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change.

**31. D** — The correct answer is It favors current in one direction. In practice, test whether conduction favors one direction. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**32. C** — The correct answer is It helps maintain a defined voltage region. In practice, check whether the reference voltage is defined. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**33. B** — The correct answer is As a controlled electronic switch. In practice, evaluate its controlled switching state. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**34. A** — The correct answer is The coil's magnetic action controls isolated contacts. In practice, trace the coil action and contact state separately. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**35. C** — The correct answer is The defined normal condition of a contact. In practice, use the drawing's defined normal condition. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**36. A** — The correct answer is The device, polarity, source, and control path. In practice, check the device, polarity, source, and path. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**37. B** — The correct answer is Look for damage, contamination, and abnormal connections. In practice, inspect for damage, contamination, and connections. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**38. D** — The correct answer is Intermittent or missing signals. In practice, check for intermittent or missing signals. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**39. C** — The correct answer is Unwanted disturbance coupled into equipment. In practice, investigate unwanted coupled disturbance. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**40. B** — The correct answer is Loss of expected processor activity. In practice, check for loss of expected processor activity. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**41. A** — The correct answer is The input interprets a range as a logic state. In practice, compare the input with its logic threshold. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change.

**42. D** — The correct answer is Transfer a signal while limiting direct electrical coupling. In practice, limit direct electrical coupling while transferring the signal. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change.

**43. A** — The correct answer is A small discharge can damage sensitive components. In practice, control electrostatic discharge around sensitive components. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They

may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**44. D** — The correct answer is Compare it with field evidence and the current reference. In practice, compare the HMI with field evidence and the reference. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change.

**45. B** — The correct answer is The underlying cause may still be present. In practice, look for the underlying cause after a reset. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**46. C** — The correct answer is Command, motor action, movement, and detection. In practice, trace command, motor action, movement, and detection. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**47. D** — The correct answer is Obstruction, friction, or mechanical overload. In practice, investigate obstruction, friction, or overload. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**48. B** — The correct answer is The physical position meets the required condition. In practice, verify the physical position condition. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**49. A** — The correct answer is Protect the equipment and investigate the obstruction. In practice, protect equipment and investigate the obstruction. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**50. C** — The correct answer is It affects movement, detection, and safe route conditions. In practice, check movement, detection, and route conditions. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**51. B** — The correct answer is Prevent an unsafe change from the required position. In practice, prevent an unsafe change from the required position. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change.

**52. D** — The correct answer is Controlled selection of the commanded direction. In practice, verify controlled direction selection. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**53. A** — The correct answer is Whether a defined travel or position condition exists. In practice, check whether the defined travel condition exists. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**54. C** — The correct answer is It can add friction or interfere with contacts. In practice, inspect for added friction or contact interference. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**55. A** — The correct answer is A persistent overload or inadequate cooling. In practice, investigate overload or inadequate cooling. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**56. C** — The correct answer is Observe and record the condition first. In practice, observe and record the condition first. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**57. B** — The correct answer is A complete authorized functional and protective test. In practice, complete the authorized functional and protective test. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**58. D** — The correct answer is Only when authorized and controlled by procedure. In practice, use manual movement only when authorized and controlled. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**59. B** — The correct answer is The position is not yet proven. In practice, treat the position as unproven. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**60. C** — The correct answer is Covers, fasteners, wiring, and restored condition. In practice, verify covers, fasteners, wiring, and restoration. This preserves the safest known condition. It gives the

maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**61. D** — The correct answer is The applicable rule and signal system. In practice, use the applicable rule and signal system. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**62. A** — The correct answer is Treat the condition as restrictive until proven otherwise. In practice, treat the condition as restrictive until proven otherwise. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change.

**63. C** — The correct answer is The device, source, control path, and return. In practice, isolate the device, source, path, and return. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**64. D** — The correct answer is Trace source, logic, output, indication, and return. In practice, trace source, logic, output, indication, and return. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**65. B** — The correct answer is Blanket authorization to ignore governing rules. In practice, do not treat it as blanket authorization. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**66. A** — The correct answer is The comparison can reveal where states diverge. In practice, locate where the states diverge. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**67. B** — The correct answer is Do not assume the permissive condition is valid. In practice, do not assume the permissive condition is valid. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change.

**68. C** — The correct answer is It should verify the response without creating a false indication. In practice, verify the response without creating a false indication. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change.

**69. D** — The correct answer is The aspect depends on proven route and protection states. In practice, check the proven route and protection states. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change.

**70. A** — The correct answer is Input conditions, selection logic, and output state. In practice, separate inputs, logic, and output state. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**71. C** — The correct answer is According to the governing local signal rules. In practice, use the governing local signal rules. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**72. D** — The correct answer is A documented condition for authorized follow-up. In practice, document the discrepancy for authorized follow-up. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**73. A** — The correct answer is Initiate a restrictive response when required conditions fail. In practice, initiate a restrictive response when conditions fail. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**74. B** — The correct answer is The discrepancy must be protected and investigated. In practice, protect and investigate the discrepancy. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**75. D** — The correct answer is Timestamps, sequence, and conditions of occurrence. In practice, record timestamps, sequence, and occurrence conditions. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**76. A** — The correct answer is It provides a shunting path across the rails. In practice, recognize the wheelset shunting path. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**77. C** — The correct answer is The detection circuit is no longer in its clear state. In practice, treat the detection circuit as not clear. This preserves the safest known condition. It gives the maintainer evidence

for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change.

**78. B** — The correct answer is A receiver or relay may drop restrictive. In practice, check the restrictive response to source loss. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**79. C** — The correct answer is They maintain the intended conductive path. In practice, verify the intended conductive path. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**80. B** — The correct answer is A fault that prevents the expected clear response. In practice, look for a fault preventing the clear response. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change.

**81. A** — The correct answer is The detection should favor a restrictive condition. In practice, expect a restrictive detection response. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**82. D** — The correct answer is They define which section the evidence applies to. In practice, apply the evidence only to the defined section. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change.

**83. C** — The correct answer is A specified electrical or coded detection signal. In practice, verify the specified detection signal. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**84. B** — The correct answer is It can affect operating indications and protection. In practice, control the test because it can affect protection. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**85. D** — The correct answer is The detection state is not yet resolved. In practice, treat the detection state as unresolved. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**86. A** — The correct answer is It can reduce insulation and create leakage. In practice, investigate reduced insulation and leakage. This preserves the safest known condition. It gives the maintainer

evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**87. D** — The correct answer is Authorization, protection, and the approved test method. In practice, obtain authorization, protection, and the approved method. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**88. C** — The correct answer is All required detection and protection conditions are proven. In practice, prove all required detection and protection conditions. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**89. A** — The correct answer is Compare trend information with prior conditions. In practice, compare trend information with prior conditions. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**90. B** — The correct answer is The intended occupied and clear responses. In practice, verify the intended occupied and clear responses. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**91. B** — The correct answer is Prevent conflicting or unsafe combinations of movements. In practice, prevent conflicting or unsafe movement combinations. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**92. A** — The correct answer is Route elements against an unsafe change. In practice, hold route elements against an unsafe change. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**93. C** — The correct answer is It limits casual changes after a train approaches. In practice, limit changes after an approach condition. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**94. D** — The correct answer is The required position and detection condition. In practice, prove required position and detection. This preserves the safest known condition. It gives the maintainer evidence for

the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**95. D** — The correct answer is The protected route condition is not fully proven. In practice, recognize that route proof is incomplete. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**96. B** — The correct answer is Every required route, switch, and protection condition. In practice, confirm every required route and protection condition. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**97. A** — The correct answer is A controlled memory of a circuit state. In practice, analyze the controlled memory state. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**98. C** — The correct answer is A restrictive or non-permissive response. In practice, maintain a restrictive response when proof is missing. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**99. B** — The correct answer is It preserves cause-and-effect information. In practice, preserve cause-and-effect information. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff. Use the same disciplined approach when conditions change.

**100. A** — The correct answer is That the route can safely return to an available state. In practice, establish whether the route can safely release. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change.

**101. D** — The correct answer is Which control location currently has authority. In practice, identify the control location with authority. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**102. C** — The correct answer is Protect the condition and resolve the authority. In practice, protect the condition and resolve authority. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**103. B** — The correct answer is It can defeat a safety-critical dependency. In practice, avoid defeating a safety-critical dependency. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**104. A** — The correct answer is A documented functional test and controlled restoration. In practice, complete documented testing and controlled restoration. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**105. C** — The correct answer is The sequence of commands, indications, and releases. In practice, reconstruct the sequence of commands and releases. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**106. D** — The correct answer is Identify the function being controlled. In practice, identify the function being controlled. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**107. D** — The correct answer is A standardized way to relate parts to functions. In practice, relate standardized symbols to functions. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**108. A** — The correct answer is Its defined condition before the operating action. In practice, use the defined condition before operating action. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**109. B** — The correct answer is A voltage path may not complete current. In practice, distinguish potential from a complete current path. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**110. C** — The correct answer is They connect the drawing reference to field wiring. In practice, connect the drawing reference to field wiring. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**111. B** — The correct answer is The intended conductor identity and connection. In practice, confirm conductor identity and connection. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**112. D** — The correct answer is A misleading voltage or unexpected operation. In practice, investigate misleading voltage or unexpected operation. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**113. C** — The correct answer is An open interrupts; a short creates an unintended path. In practice, distinguish interruption from an unintended path. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**114. A** — The correct answer is The current authorized revision. In practice, use the current authorized revision. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**115. B** — The correct answer is Protect the condition and report the discrepancy. In practice, protect the condition and report the discrepancy. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**116. C** — The correct answer is Identified with its location, purpose, and removal status. In practice, identify location, purpose, and removal status. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**117. A** — The correct answer is Which information changed and when. In practice, determine what changed and when. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**118. D** — The correct answer is It defines where evidence and responsibility change. In practice, define where evidence and responsibility change. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**119. B** — The correct answer is Expected states and verified observations. In practice, mark expected states and verified observations. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**120. D** — The correct answer is The reference used and the relevant tested boundary. In practice, state the reference and tested boundary. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**121. C** — The correct answer is Match its function and rating to the task. In practice, match function and rating to the task. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**122. A** — The correct answer is Insulation, probes, connections, and condition. In practice, inspect insulation, probes, connections, and condition. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**123. A** — The correct answer is Confirm the tester works before and after contact. In practice, confirm the tester before and after contact. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**124. B** — The correct answer is Across defined points that answer the next question. In practice, measure across defined points. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**125. D** — The correct answer is On an isolated path whose connection is being checked. In practice, test an isolated path. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**126. C** — The correct answer is External energy can distort readings or damage meters. In practice, isolate the circuit before resistance testing. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**127. B** — The correct answer is The meter is placed in series with the path. In practice, place the meter in series with the path. This preserves the safest known condition. It gives the maintainer evidence for

the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change.

**128. D** — The correct answer is Current without opening the conductor path. In practice, measure current without opening the path. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**129. A** — The correct answer is Time and waveform information. In practice, observe time and waveform information. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**130. C** — The correct answer is The authorized procedure and equipment limits. In practice, follow the authorized procedure and limits. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**131. B** — The correct answer is It shows the instrument's safe environment limits. In practice, use the instrument within its rated environment. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**132. D** — The correct answer is The placement defines what the measurement actually compares. In practice, define the comparison made by the measurement. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**133. C** — The correct answer is A range and function suitable for the expected value. In practice, select a suitable range and function first. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change.

**134. A** — The correct answer is Value, units, points, condition, and time. In practice, record value, units, points, condition, and time. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**135. C** — The correct answer is Recheck the instrument, reference, and circuit state. In practice, recheck the instrument, reference, and state. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**136. D** — The correct answer is The observed symptom and its operational effect. In practice, define the symptom and operational effect. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**137. B** — The correct answer is Only in a controlled, safe condition. In practice, reproduce it only in a controlled way. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**138. A** — The correct answer is They narrow the suspected fault area. In practice, narrow the suspected fault area. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**139. D** — The correct answer is Separate possible fault locations using evidence. In practice, separate fault locations using evidence. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**140. A** — The correct answer is Tests a boundary that divides remaining possibilities. In practice, test a boundary that divides possibilities. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**141. C** — The correct answer is It preserves the meaning of the result. In practice, preserve the meaning of the result. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**142. B** — The correct answer is Time, sequence, environment, and symptom conditions. In practice, record time, sequence, environment, and conditions. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**143. C** — The correct answer is When authorized, controlled, and safe for the equipment. In practice, use it only when authorized and controlled. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**144. D** — The correct answer is It may clear the symptom without removing the cause. In practice, look for the cause beyond the reset. This preserves the safest known condition. It gives the maintainer

evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change.

**145. B** — The correct answer is An observed result that can be traced. In practice, trace the conclusion to an observed condition. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**146. A** — The correct answer is Stop, protect the condition, and escalate. In practice, stop, protect, and escalate. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**147. C** — The correct answer is Repeat the original function and protection test. In practice, repeat the original function and protection test. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**148. A** — The correct answer is It asks why the failure occurred and could recur. In practice, ask why the failure occurred and could recur. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change.

**149. B** — The correct answer is Patterns across time, equipment, and conditions. In practice, compare patterns across time and conditions. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

**150. D** — The correct answer is Preserve the safe state and obtain support. In practice, preserve the safe state and obtain support. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.