PRACTICE EXAM 10: 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. During a track-detection review, a signal condition is unclear. What should be preserved first?

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

2. While reviewing an intermittent failure history, 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. When an authorized procedure reaches an unclear step, a planned task involves several workers and a live operating area. What should occur before work begins?

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

4. During a post-maintenance return-to-service check, 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. Before documenting the final condition, a test could change an indication seen by operations. What should happen before the test?

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

6. In a controlled training scenario, 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. When preparing a handoff to the next maintainer, a meter and lead set will be used near electrical energy. What should be checked?

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

8. After comparing the field condition with the drawing, 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. Before making any temporary circuit change, work is near an active trackway. Which priority controls the task?

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

10. During a weather-affected inspection, poor visibility makes a field observation uncertain. What is the best response?

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

11. After a switch movement does not complete, a work order does not clearly include a proposed change. What should the maintainer do?

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

12. Before opening a relay or equipment case, 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. State condition, evidence, limits, and next action
D. Report only that it failed

13. During a drawing and terminal audit, an event log may help explain an intermittent failure. What should happen to the record?

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

14. After a route does not release as expected, 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. While isolating a suspected open circuit, a repair appears complete. What confirms the task is actually closed?

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

16. While reviewing a new trouble report, what does a voltage measurement between two points describe?

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

17. After an unexpected indication appears, 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. During a supervisor-directed diagnostic task, 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. During a recurring-fault investigation, what is a likely effect of an unintended low-resistance path across a source?

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

20. After a measurement does not match the prediction, 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 voltage drop or source-delivery problem
C. A change in signal color only
D. A larger-than-normal conductor

21. While preparing equipment for a functional test, what is common to all elements in a simple series path?

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

22. When a signal response appears more permissive than expected, what is a key feature of parallel branches?

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

23. After a protective device operates, why is polarity important in a DC control circuit?

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

24. While checking a battery-backed supply, 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. When two indications do not agree, what is a transformer commonly used to provide?

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

26. During a planned maintenance shift, what is the intended protective action of a fuse under sufficient overcurrent?

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

27. Before beginning a wayside inspection, why must ground or reference be identified before measuring?

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

28. While checking a recently restored circuit, why can a de-energized circuit still require caution?

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

29. When a normal indication is not present, what condition is normally required before measuring resistance in a circuit?

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

30. While confirming the limits of a work order, what can unexpected heat provide during a power investigation?

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

31. When a control-room report conflicts with field evidence, what is the basic conduction behavior of a diode?

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

32. During a track-detection review, why may a zener device appear in a reference circuit?

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

33. While reviewing an intermittent failure history, how can a transistor function in a control circuit?

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

34. When an authorized procedure reaches an unclear step, what separates a relay coil from its contacts?

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

35. During a post-maintenance return-to-service check, 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. Before documenting the final condition, 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. In a controlled training scenario, 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. When preparing a handoff to the next maintainer, 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. After comparing the field condition with the drawing, what is electromagnetic interference likely to produce?

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

40. Before making any temporary circuit change, 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. During a weather-affected inspection, 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. After a switch movement does not complete, what is the purpose of optical isolation?

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

43. Before opening a relay or equipment case, 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. During a drawing and terminal audit, what is the safest way to interpret an HMI indication?

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

45. After a route does not release as expected, 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. While isolating a suspected open circuit, what sequence best describes a powered switch movement?

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

47. While reviewing a new trouble report, what may unusually high motor current suggest?

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

48. After an unexpected indication appears, what does switch detection help prove?

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

49. During a supervisor-directed diagnostic task, what is the first concern when a mechanism meets resistance?

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

50. During a recurring-fault investigation, why is point alignment important to a switch function?

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

51. After a measurement does not match the prediction, what is the purpose of a mechanical or electrical lock?

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

52. While preparing equipment for a functional test, 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. When a signal response appears more permissive than expected, what can a limit or detection contact reveal?

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

54. After a protective device operates, 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. While checking a battery-backed supply, what may repeated thermal protection operation indicate?

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

56. When two indications do not agree, what should happen before dismantling a mechanical assembly?

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

57. During a planned maintenance shift, what is required after an adjustment to a switch mechanism?

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

58. Before beginning a wayside inspection, when is manual movement of a powered mechanism acceptable?

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

59. While checking a recently restored circuit, 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. When a normal indication is not present, what should the maintainer verify before closing a serviced equipment case?

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

61. While confirming the limits of a work order, what gives a signal aspect its operating meaning?

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

62. When a control-room report conflicts with field evidence, a signal is dark when a permissive display was expected. What is the safe interpretation?

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

63. During a track-detection review, a signal lamp or LED is dark. What should be isolated?

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

64. While reviewing an intermittent failure history, 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. When an authorized procedure reaches an unclear step, what does a permissive indication not provide by itself?

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

66. During a post-maintenance return-to-service check, why compare related indications during a fault?

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

67. Before documenting the final condition, a signal appears clear but a required condition is unverified. What is the proper response?

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

68. In a controlled training scenario, how should an aspect test be designed?

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

69. When preparing a handoff to the next maintainer, 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. After comparing the field condition with the drawing, what should be separated when troubleshooting relay and electronic selection logic?

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

71. Before making any temporary circuit change, how should color and position be interpreted?

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

72. During a weather-affected inspection, what should a persistent indication discrepancy become?

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

73. After a switch movement does not complete, what is the protective purpose of a train-stop function?

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

74. Before opening a relay or equipment case, a control-room indication conflicts with the field device. What should guide the next decision?

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

75. During a drawing and terminal audit, what makes an intermittent aspect fault easier to analyze?

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

76. After a route does not release as expected, what does a train wheelset normally do to a track circuit?

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

77. While isolating a suspected open circuit, what does a track relay release generally indicate?

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

78. While reviewing a new trouble report, what should be considered when a track circuit loses its source?

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

79. After an unexpected indication appears, why are rail bonds and connections important?

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

80. During a supervisor-directed diagnostic task, 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. During a recurring-fault investigation, what is the safe significance of a suspected broken rail response?

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

82. After a measurement does not match the prediction, 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. While preparing equipment for a functional test, what does a coded track receiver interpret?

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

84. When a signal response appears more permissive than expected, why must a train-movement detection test be controlled?

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

85. After a protective device operates, local and remote occupancy indications disagree. What is established?

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

86. While checking a battery-backed supply, how can wet ballast affect a track circuit?

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

87. When two indications do not agree, 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. During a planned maintenance shift, what must be true before a clear indication is accepted?

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

89. Before beginning a wayside inspection, what is useful when the same occupancy fault recurs?

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

90. While checking a recently restored circuit, what should be verified after a detection repair?

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

91. When a normal indication is not present, 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. While confirming the limits of a work order, what does route locking hold?

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

93. When a control-room report conflicts with field evidence, 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. During a track-detection review, what must a switch prove before a route can rely on it?

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

95. While reviewing an intermittent failure history, why can occupancy prevent a signal from clearing?

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

96. When an authorized procedure reaches an unclear step, what should be confirmed before clearing a signal?

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

97. During a post-maintenance return-to-service check, what does a stick circuit commonly provide?

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

98. Before documenting the final condition, missing proof in an interlocking condition should cause what response?

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

99. In a controlled training scenario, why test one interlocking condition at a time?

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

100. When preparing a handoff to the next maintainer, what is route release evidence used to establish?

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

101. After comparing the field condition with the drawing, what should be considered when control can be local or remote?

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

102. Before making any temporary circuit change, two conflicting commands appear at once. What is the safe approach?

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

103. During a weather-affected inspection, why is bypassing interlocking protection unacceptable without authorization?

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

104. After a switch movement does not complete, what is needed after interlocking maintenance?

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

105. Before opening a relay or equipment case, what is especially useful in a route fault?

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

106. During a drawing and terminal audit, what is the best starting point when reading a signal schematic?

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

107. After a route does not release as expected, what do schematic symbols and references provide?

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

108. While isolating a suspected open circuit, 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. While reviewing a new trouble report, why trace both potential and current paths?

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

110. After an unexpected indication appears, why are terminal numbers important?

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

111. During a supervisor-directed diagnostic task, 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. During a recurring-fault investigation, what can a parallel path or backfeed cause?

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

113. After a measurement does not match the prediction, 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. While preparing equipment for a functional test, which drawing should be used for a field decision?

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

115. When a signal response appears more permissive than expected, 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. After a protective device operates, how should a jumper appear in controlled documentation?

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

117. While checking a battery-backed supply, what does a revision marker help the maintainer determine?

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

118. When two indications do not agree, why identify the interface between control and field equipment?

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

119. During a planned maintenance shift, 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. Before beginning a wayside inspection, what drawing information belongs in a technical handoff?

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

121. While checking a recently restored circuit, how should a meter be selected?

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

122. When a normal indication is not present, what should be inspected before using meter leads?

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

123. While confirming the limits of a work order, what is the purpose of a prove-test-prove sequence?

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

124. When a control-room report conflicts with field evidence, where should a voltage measurement be placed?

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

125. During a track-detection review, 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. While reviewing an intermittent failure history, 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. When an authorized procedure reaches an unclear step, how is current normally measured with a conventional meter?

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

128. During a post-maintenance return-to-service check, what can a clamp meter help measure?

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

129. Before documenting the final condition, what can an oscilloscope add to a signal investigation?

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

130. In a controlled training scenario, what controls the use of an insulation tester?

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

131. When preparing a handoff to the next maintainer, why does instrument category rating matter?

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

132. After comparing the field condition with the drawing, why does probe placement matter?

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

133. Before making any temporary circuit change, 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. During a weather-affected inspection, what makes a measurement record useful?

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

135. After a switch movement does not complete, 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. Before opening a relay or equipment case, 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. During a drawing and terminal audit, how should a failure be reproduced?

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

138. After a route does not release as expected, why are known-good and known-bad boundaries useful?

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

139. While isolating a suspected open circuit, what is the purpose of dividing a circuit path?

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

140. While reviewing a new trouble report, what does a half-split method do?

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

141. After an unexpected indication appears, why change one variable at a time?

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

142. During a supervisor-directed diagnostic task, what should be recorded for an intermittent fault?

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

143. During a recurring-fault investigation, 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. After a measurement does not match the prediction, why can a reset mislead a troubleshooter?

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

145. While preparing equipment for a functional test, 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. When a signal response appears more permissive than expected, what should happen at the limit of the maintainer's authority?

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

147. After a protective device operates, what verifies that a correction worked?

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

148. While checking a battery-backed supply, what does root-cause thinking add after a symptom is corrected?

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

149. When two indications do not agree, what is valuable in a recurring-fault log?

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

150. During a planned maintenance shift, what should be done when evidence remains insufficient?

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

Practice Exam 10: Answer Key and Explanations

1. C — 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. B — 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. A — 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. C — 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. D — 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. A — 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. B — 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. C — 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. D — 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. A — 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. C — 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. C — 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. B — 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. A — 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. D — 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. C — 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. D — 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. A — 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. B — 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. C — 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. D — 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. A — 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. C — 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. A — 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. D — 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. B — 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. D — 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. C — 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. C — 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. D — 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. C — 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. A — 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. B — 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. D — 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. A — 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. B — 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. D — 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. B — 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. A — 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. C — 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. A — 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. C — 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. D — 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. A — 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. C — 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. B — 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. A — 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. B — 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. C — 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. B — 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. A — 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. C — 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. D — 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. B — 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. C — 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. D — 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. A — 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. A — 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. C — 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. D — 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. A — 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. C — 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. B — 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. A — 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. B — 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. C — 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. D — 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. A — 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. B — 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. C — 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. D — 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. A — 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. D — 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. C — 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. B — 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. A — 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. C — 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. B — 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. D — 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. A — 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. C — 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. D — 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. B — 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. A — 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. D — 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. A — 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. D — 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. C — 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. A — 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. D — 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. B — 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. C — 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. A — 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. A — 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. C — 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. D — 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. B — 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. D — 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. A — 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. B — 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. A — 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. B — 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. A — 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. D — 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. B — 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. C — 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. A — 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. D — 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. D — 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. B — 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. A — 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. C — 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.