PRACTICE EXAM 14: 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. When an authorized procedure reaches an unclear step, a signal condition is unclear. What should be preserved first?

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

2. During a post-maintenance return-to-service check, a drawing is available but the maintainer remembers a different circuit. Which reference controls?

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

3. Before documenting the final condition, a planned task involves several workers and a live operating area. What should occur before work begins?

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

4. In a controlled training scenario, hazardous energy may remain after an isolation step. What is the next safe action?

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

5. When preparing a handoff to the next maintainer, a test could change an indication seen by operations. What should happen before the test?

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

6. After comparing the field condition with the drawing, a temporary jumper is installed during an authorized test. What is essential?

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

7. Before making any temporary circuit change, a meter and lead set will be used near electrical energy. What should be checked?

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

8. During a weather-affected inspection, an instruction conflicts with the equipment condition or authority is unclear. What is the professional response?

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

9. After a switch movement does not complete, work is near an active trackway. Which priority controls the task?

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

10. Before opening a relay or equipment case, poor visibility makes a field observation uncertain. What is the best response?

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

11. During a drawing and terminal audit, a work order does not clearly include a proposed change. What should the maintainer do?

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

12. After a route does not release as expected, a fault crosses the boundary between two maintenance groups. What makes the handoff useful?

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

13. While isolating a suspected open circuit, an event log may help explain an intermittent failure. What should happen to the record?

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

14. While reviewing a new trouble report, a non-routine bypass appears necessary to continue. What is the proper decision?

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

15. After an unexpected indication appears, a repair appears complete. What confirms the task is actually closed?

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

16. During a supervisor-directed diagnostic task, what does a voltage measurement between two points describe?

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

17. During a recurring-fault investigation, what must exist for current to flow through an intended control path?

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

18. After a measurement does not match the prediction, an open conductor is suspected in a control circuit. What is the defining condition?

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

19. While preparing equipment for a functional test, what is a likely effect of an unintended low-resistance path across a source?

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

20. When a signal response appears more permissive than expected, a source reads normally with no load but falls at the load. What should be considered?

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

21. After a protective device operates, what is common to all elements in a simple series path?

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

22. While checking a battery-backed supply, what is a key feature of parallel branches?

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

23. When two indications do not agree, why is polarity important in a DC control circuit?

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

24. During a planned maintenance shift, which distinction matters when selecting a measurement method?

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

25. Before beginning a wayside inspection, what is a transformer commonly used to provide?

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

26. While checking a recently restored circuit, what is the intended protective action of a fuse under sufficient overcurrent?

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

27. When a normal indication is not present, why must ground or reference be identified before measuring?

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

28. While confirming the limits of a work order, why can a de-energized circuit still require caution?

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

29. When a control-room report conflicts with field evidence, what condition is normally required before measuring resistance in a circuit?

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

30. During a track-detection review, what can unexpected heat provide during a power investigation?

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

31. While reviewing an intermittent failure history, what is the basic conduction behavior of a diode?

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

32. When an authorized procedure reaches an unclear step, why may a zener device appear in a reference circuit?

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

33. During a post-maintenance return-to-service check, how can a transistor function in a control circuit?

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

34. Before documenting the final condition, what separates a relay coil from its contacts?

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

35. In a controlled training scenario, what does normally open describe?

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

36. When preparing a handoff to the next maintainer, what should be considered when an LED indication is dark?

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

37. After comparing the field condition with the drawing, what is a useful first inspection of a printed circuit board?

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

38. Before making any temporary circuit change, what can a poorly seated connector cause?

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

39. During a weather-affected inspection, what is electromagnetic interference likely to produce?

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

40. After a switch movement does not complete, what is a watchdog function intended to detect?

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

41. Before opening a relay or equipment case, why does an electronic input threshold matter?

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

42. During a drawing and terminal audit, what is the purpose of optical isolation?

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

43. After a route does not release as expected, why is electrostatic discharge control important around boards?

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

44. While isolating a suspected open circuit, what is the safest way to interpret an HMI indication?

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

45. While reviewing a new trouble report, why is a successful reset not necessarily a repair?

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

46. After an unexpected indication appears, what sequence best describes a powered switch movement?

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

47. During a supervisor-directed diagnostic task, what may unusually high motor current suggest?

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

48. During a recurring-fault investigation, what does switch detection help prove?

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

49. After a measurement does not match the prediction, what is the first concern when a mechanism meets resistance?

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

50. While preparing equipment for a functional test, why is point alignment important to a switch function?

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

51. When a signal response appears more permissive than expected, what is the purpose of a mechanical or electrical lock?

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

52. After a protective device operates, what should a direction contactor provide in a motor circuit?

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

53. While checking a battery-backed supply, what can a limit or detection contact reveal?

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

54. When two indications do not agree, why can contamination affect a mechanism?

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

55. During a planned maintenance shift, what may repeated thermal protection operation indicate?

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

56. Before beginning a wayside inspection, what should happen before dismantling a mechanical assembly?

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

57. While checking a recently restored circuit, what is required after an adjustment to a switch mechanism?

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

58. When a normal indication is not present, when is manual movement of a powered mechanism acceptable?

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

59. While confirming the limits of a work order, two indications disagree about switch position. What is the best conclusion?

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

60. When a control-room report conflicts with field evidence, what should the maintainer verify before closing a serviced equipment case?

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

61. During a track-detection review, what gives a signal aspect its operating meaning?

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

62. While reviewing an intermittent failure history, a signal is dark when a permissive display was expected. What is the safe interpretation?

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

63. When an authorized procedure reaches an unclear step, a signal lamp or LED is dark. What should be isolated?

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

64. During a post-maintenance return-to-service check, what is the best way to analyze a signal circuit?

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

65. Before documenting the final condition, what does a permissive indication not provide by itself?

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

66. In a controlled training scenario, why compare related indications during a fault?

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

67. When preparing a handoff to the next maintainer, a signal appears clear but a required condition is unverified. What is the proper response?

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

68. After comparing the field condition with the drawing, how should an aspect test be designed?

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

69. Before making any temporary circuit change, why can route conditions affect a signal aspect?

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

70. During a weather-affected inspection, what should be separated when troubleshooting relay and electronic selection logic?

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

71. After a switch movement does not complete, how should color and position be interpreted?

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

72. Before opening a relay or equipment case, what should a persistent indication discrepancy become?

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

73. During a drawing and terminal audit, what is the protective purpose of a train-stop function?

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

74. After a route does not release as expected, a control-room indication conflicts with the field device. What should guide the next decision?

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

75. While isolating a suspected open circuit, what makes an intermittent aspect fault easier to analyze?

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

76. While reviewing a new trouble report, what does a train wheelset normally do to a track circuit?

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

77. After an unexpected indication appears, what does a track relay release generally indicate?

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

78. During a supervisor-directed diagnostic task, what should be considered when a track circuit loses its source?

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

79. During a recurring-fault investigation, why are rail bonds and connections important?

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

80. After a measurement does not match the prediction, what can cause a false occupancy indication?

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

81. While preparing equipment for a functional test, what is the safe significance of a suspected broken rail response?

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

82. When a signal response appears more permissive than expected, why must track-circuit boundaries be identified?

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

83. After a protective device operates, what does a coded track receiver interpret?

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

84. While checking a battery-backed supply, why must a train-movement detection test be controlled?

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

85. When two indications do not agree, local and remote occupancy indications disagree. What is established?

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

86. During a planned maintenance shift, how can wet ballast affect a track circuit?

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

87. Before beginning a wayside inspection, what is required before performing a shunt test?

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

88. While checking a recently restored circuit, what must be true before a clear indication is accepted?

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

89. When a normal indication is not present, what is useful when the same occupancy fault recurs?

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

90. While confirming the limits of a work order, what should be verified after a detection repair?

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

91. When a control-room report conflicts with field evidence, what is the central purpose of interlocking?

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

92. During a track-detection review, what does route locking hold?

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

93. While reviewing an intermittent failure history, why does approach locking matter?

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

94. When an authorized procedure reaches an unclear step, what must a switch prove before a route can rely on it?

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

95. During a post-maintenance return-to-service check, why can occupancy prevent a signal from clearing?

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

96. Before documenting the final condition, what should be confirmed before clearing a signal?

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

97. In a controlled training scenario, what does a stick circuit commonly provide?

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

98. When preparing a handoff to the next maintainer, missing proof in an interlocking condition should cause what response?

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

99. After comparing the field condition with the drawing, why test one interlocking condition at a time?

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

100. Before making any temporary circuit change, what is route release evidence used to establish?

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

101. During a weather-affected inspection, what should be considered when control can be local or remote?

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

102. After a switch movement does not complete, two conflicting commands appear at once. What is the safe approach?

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

103. Before opening a relay or equipment case, why is bypassing interlocking protection unacceptable without authorization?

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

104. During a drawing and terminal audit, what is needed after interlocking maintenance?

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

105. After a route does not release as expected, what is especially useful in a route fault?

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

106. While isolating a suspected open circuit, what is the best starting point when reading a signal schematic?

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

107. While reviewing a new trouble report, what do schematic symbols and references provide?

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

108. After an unexpected indication appears, what does a contact's normal state describe?

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

109. During a supervisor-directed diagnostic task, why trace both potential and current paths?

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

110. During a recurring-fault investigation, why are terminal numbers important?

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

111. After a measurement does not match the prediction, what does a wire label help establish?

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

112. While preparing equipment for a functional test, what can a parallel path or backfeed cause?

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

113. When a signal response appears more permissive than expected, how should an open and a short be distinguished?

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

114. After a protective device operates, which drawing should be used for a field decision?

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

115. While checking a battery-backed supply, what should happen when field wiring differs from the drawing?

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

116. When two indications do not agree, how should a jumper appear in controlled documentation?

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

117. During a planned maintenance shift, what does a revision marker help the maintainer determine?

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

118. Before beginning a wayside inspection, why identify the interface between control and field equipment?

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

119. While checking a recently restored circuit, what is useful to write on a schematic during diagnosis?

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

120. When a normal indication is not present, what drawing information belongs in a technical handoff?

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

121. While confirming the limits of a work order, how should a meter be selected?

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

122. When a control-room report conflicts with field evidence, what should be inspected before using meter leads?

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

123. During a track-detection review, what is the purpose of a prove-test-prove sequence?

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

124. While reviewing an intermittent failure history, where should a voltage measurement be placed?

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

125. When an authorized procedure reaches an unclear step, when is a continuity test appropriate?

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

126. During a post-maintenance return-to-service check, why should a circuit be isolated before resistance testing?

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

127. Before documenting the final condition, how is current normally measured with a conventional meter?

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

128. In a controlled training scenario, what can a clamp meter help measure?

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

129. When preparing a handoff to the next maintainer, what can an oscilloscope add to a signal investigation?

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

130. After comparing the field condition with the drawing, what controls the use of an insulation tester?

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

131. Before making any temporary circuit change, why does instrument category rating matter?

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

132. During a weather-affected inspection, why does probe placement matter?

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

133. After a switch movement does not complete, what should be selected before contacting a circuit?

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

134. Before opening a relay or equipment case, what makes a measurement record useful?

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

135. During a drawing and terminal audit, a measurement is unexpected. What should happen first?

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

136. After a route does not release as expected, what should be defined before troubleshooting begins?

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

137. While isolating a suspected open circuit, how should a failure be reproduced?

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

138. While reviewing a new trouble report, why are known-good and known-bad boundaries useful?

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

139. After an unexpected indication appears, what is the purpose of dividing a circuit path?

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

140. During a supervisor-directed diagnostic task, what does a half-split method do?

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

141. During a recurring-fault investigation, why change one variable at a time?

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

142. After a measurement does not match the prediction, what should be recorded for an intermittent fault?

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

143. While preparing equipment for a functional test, when is a wiggle or disturbance test acceptable?

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

144. When a signal response appears more permissive than expected, why can a reset mislead a troubleshooter?

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

145. After a protective device operates, what separates evidence from assumption?

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

146. While checking a battery-backed supply, what should happen at the limit of the maintainer's authority?

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

147. When two indications do not agree, what verifies that a correction worked?

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

148. During a planned maintenance shift, what does root-cause thinking add after a symptom is corrected?

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

149. Before beginning a wayside inspection, what is valuable in a recurring-fault log?

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

150. While checking a recently restored circuit, what should be done when evidence remains insufficient?

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

Practice Exam 14: Answer Key and Explanations

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

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

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

9. C — The correct answer is Protect people and train movement first. In practice, protect people and train movement first. This preserves the safest known condition. It gives the maintainer evidence for the

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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