PRACTICE EXAM 12: SIGNAL MAINTAINER SIMULATION (150 QUESTIONS)

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

1. While reviewing an intermittent failure history, a signal condition is unclear. What should be preserved first?

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

2. When an authorized procedure reaches an unclear step, a drawing is available but the maintainer remembers a different circuit. Which reference controls?

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

3. During a post-maintenance return-to-service check, a planned task involves several workers and a live operating area. What should occur before work begins?

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

4. Before documenting the final condition, hazardous energy may remain after an isolation step. What is the next safe action?

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

5. In a controlled training scenario, a test could change an indication seen by operations. What should happen before the test?

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

6. When preparing a handoff to the next maintainer, a temporary jumper is installed during an authorized test. What is essential?

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

7. After comparing the field condition with the drawing, a meter and lead set will be used near electrical energy. What should be checked?

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

8. Before making any temporary circuit change, an instruction conflicts with the equipment condition or authority is unclear. What is the professional response?

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

9. During a weather-affected inspection, work is near an active trackway. Which priority controls the task?

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

10. After a switch movement does not complete, poor visibility makes a field observation uncertain. What is the best response?

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

11. Before opening a relay or equipment case, a work order does not clearly include a proposed change. What should the maintainer do?

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

12. During a drawing and terminal audit, a fault crosses the boundary between two maintenance groups. What makes the handoff useful?

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

13. After a route does not release as expected, an event log may help explain an intermittent failure. What should happen to the record?

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

14. While isolating a suspected open circuit, a non-routine bypass appears necessary to continue. What is the proper decision?

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

15. While reviewing a new trouble report, a repair appears complete. What confirms the task is actually closed?

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

16. After an unexpected indication appears, what does a voltage measurement between two points describe?

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

17. During a supervisor-directed diagnostic task, what must exist for current to flow through an intended control path?

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

18. During a recurring-fault investigation, an open conductor is suspected in a control circuit. What is the defining condition?

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

19. After a measurement does not match the prediction, what is a likely effect of an unintended low-resistance path across a source?

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

20. While preparing equipment for a functional test, a source reads normally with no load but falls at the load. What should be considered?

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

21. When a signal response appears more permissive than expected, what is common to all elements in a simple series path?

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

22. After a protective device operates, what is a key feature of parallel branches?

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

23. While checking a battery-backed supply, why is polarity important in a DC control circuit?

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

24. When two indications do not agree, which distinction matters when selecting a measurement method?

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

25. During a planned maintenance shift, what is a transformer commonly used to provide?

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

26. Before beginning a wayside inspection, what is the intended protective action of a fuse under sufficient overcurrent?

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

27. While checking a recently restored circuit, why must ground or reference be identified before measuring?

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

28. When a normal indication is not present, why can a de-energized circuit still require caution?

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

29. While confirming the limits of a work order, what condition is normally required before measuring resistance in a circuit?

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

30. When a control-room report conflicts with field evidence, what can unexpected heat provide during a power investigation?

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

31. During a track-detection review, what is the basic conduction behavior of a diode?

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

32. While reviewing an intermittent failure history, why may a zener device appear in a reference circuit?

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

33. When an authorized procedure reaches an unclear step, how can a transistor function in a control circuit?

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

34. During a post-maintenance return-to-service check, what separates a relay coil from its contacts?

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

35. Before documenting the final condition, what does normally open describe?

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

36. In a controlled training scenario, what should be considered when an LED indication is dark?

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

37. When preparing a handoff to the next maintainer, what is a useful first inspection of a printed circuit board?

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

38. After comparing the field condition with the drawing, what can a poorly seated connector cause?

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

39. Before making any temporary circuit change, what is electromagnetic interference likely to produce?

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

40. During a weather-affected inspection, what is a watchdog function intended to detect?

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

41. After a switch movement does not complete, why does an electronic input threshold matter?

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

42. Before opening a relay or equipment case, what is the purpose of optical isolation?

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

43. During a drawing and terminal audit, why is electrostatic discharge control important around boards?

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

44. After a route does not release as expected, what is the safest way to interpret an HMI indication?

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

45. While isolating a suspected open circuit, why is a successful reset not necessarily a repair?

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

46. While reviewing a new trouble report, what sequence best describes a powered switch movement?

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

47. After an unexpected indication appears, what may unusually high motor current suggest?

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

48. During a supervisor-directed diagnostic task, what does switch detection help prove?

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

49. During a recurring-fault investigation, what is the first concern when a mechanism meets resistance?

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

50. After a measurement does not match the prediction, why is point alignment important to a switch function?

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

51. While preparing equipment for a functional test, what is the purpose of a mechanical or electrical lock?

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

52. When a signal response appears more permissive than expected, what should a direction contactor provide in a motor circuit?

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

53. After a protective device operates, what can a limit or detection contact reveal?

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

54. While checking a battery-backed supply, why can contamination affect a mechanism?

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

55. When two indications do not agree, what may repeated thermal protection operation indicate?

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

56. During a planned maintenance shift, what should happen before dismantling a mechanical assembly?

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

57. Before beginning a wayside inspection, what is required after an adjustment to a switch mechanism?

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

58. While checking a recently restored circuit, when is manual movement of a powered mechanism acceptable?

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

59. When a normal indication is not present, two indications disagree about switch position. What is the best conclusion?

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

60. While confirming the limits of a work order, what should the maintainer verify before closing a serviced equipment case?

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

61. When a control-room report conflicts with field evidence, what gives a signal aspect its operating meaning?

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

62. During a track-detection review, a signal is dark when a permissive display was expected. What is the safe interpretation?

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

63. While reviewing an intermittent failure history, a signal lamp or LED is dark. What should be isolated?

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

64. When an authorized procedure reaches an unclear step, what is the best way to analyze a signal circuit?

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

65. During a post-maintenance return-to-service check, what does a permissive indication not provide by itself?

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

66. Before documenting the final condition, why compare related indications during a fault?

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

67. In a controlled training scenario, a signal appears clear but a required condition is unverified. What is the proper response?

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

68. When preparing a handoff to the next maintainer, how should an aspect test be designed?

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

69. After comparing the field condition with the drawing, why can route conditions affect a signal aspect?

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

70. Before making any temporary circuit change, what should be separated when troubleshooting relay and electronic selection logic?

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

71. During a weather-affected inspection, how should color and position be interpreted?

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

72. After a switch movement does not complete, what should a persistent indication discrepancy become?

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

73. Before opening a relay or equipment case, what is the protective purpose of a train-stop function?

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

74. During a drawing and terminal audit, a control-room indication conflicts with the field device. What should guide the next decision?

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

75. After a route does not release as expected, what makes an intermittent aspect fault easier to analyze?

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

76. While isolating a suspected open circuit, what does a train wheelset normally do to a track circuit?

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

77. While reviewing a new trouble report, what does a track relay release generally indicate?

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

78. After an unexpected indication appears, what should be considered when a track circuit loses its source?

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

79. During a supervisor-directed diagnostic task, why are rail bonds and connections important?

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

80. During a recurring-fault investigation, what can cause a false occupancy indication?

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

81. After a measurement does not match the prediction, what is the safe significance of a suspected broken rail response?

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

82. While preparing equipment for a functional test, why must track-circuit boundaries be identified?

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

83. When a signal response appears more permissive than expected, what does a coded track receiver interpret?

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

84. After a protective device operates, why must a train-movement detection test be controlled?

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

85. While checking a battery-backed supply, local and remote occupancy indications disagree. What is established?

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

86. When two indications do not agree, how can wet ballast affect a track circuit?

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

87. During a planned maintenance shift, what is required before performing a shunt test?

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

88. Before beginning a wayside inspection, what must be true before a clear indication is accepted?

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

89. While checking a recently restored circuit, what is useful when the same occupancy fault recurs?

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

90. When a normal indication is not present, what should be verified after a detection repair?

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

91. While confirming the limits of a work order, what is the central purpose of interlocking?

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

92. When a control-room report conflicts with field evidence, what does route locking hold?

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

93. During a track-detection review, why does approach locking matter?

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

94. While reviewing an intermittent failure history, what must a switch prove before a route can rely on it?

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

95. When an authorized procedure reaches an unclear step, why can occupancy prevent a signal from clearing?

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

96. During a post-maintenance return-to-service check, what should be confirmed before clearing a signal?

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

97. Before documenting the final condition, what does a stick circuit commonly provide?

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

98. In a controlled training scenario, missing proof in an interlocking condition should cause what response?

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

99. When preparing a handoff to the next maintainer, why test one interlocking condition at a time?

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

100. After comparing the field condition with the drawing, what is route release evidence used to establish?

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

101. Before making any temporary circuit change, what should be considered when control can be local or remote?

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

102. During a weather-affected inspection, two conflicting commands appear at once. What is the safe approach?

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

103. After a switch movement does not complete, why is bypassing interlocking protection unacceptable without authorization?

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

104. Before opening a relay or equipment case, what is needed after interlocking maintenance?

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

105. During a drawing and terminal audit, what is especially useful in a route fault?

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

106. After a route does not release as expected, what is the best starting point when reading a signal schematic?

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

107. While isolating a suspected open circuit, what do schematic symbols and references provide?

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

108. While reviewing a new trouble report, what does a contact's normal state describe?

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

109. After an unexpected indication appears, why trace both potential and current paths?

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

110. During a supervisor-directed diagnostic task, why are terminal numbers important?

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

111. During a recurring-fault investigation, what does a wire label help establish?

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

112. After a measurement does not match the prediction, what can a parallel path or backfeed cause?

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

113. While preparing equipment for a functional test, how should an open and a short be distinguished?

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

114. When a signal response appears more permissive than expected, which drawing should be used for a field decision?

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

115. After a protective device operates, what should happen when field wiring differs from the drawing?

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

116. While checking a battery-backed supply, how should a jumper appear in controlled documentation?

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

117. When two indications do not agree, what does a revision marker help the maintainer determine?

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

118. During a planned maintenance shift, why identify the interface between control and field equipment?

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

119. Before beginning a wayside inspection, what is useful to write on a schematic during diagnosis?

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

120. While checking a recently restored circuit, what drawing information belongs in a technical handoff?

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

121. When a normal indication is not present, how should a meter be selected?

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

122. While confirming the limits of a work order, what should be inspected before using meter leads?

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

123. When a control-room report conflicts with field evidence, what is the purpose of a prove-test-prove sequence?

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

124. During a track-detection review, where should a voltage measurement be placed?

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

125. While reviewing an intermittent failure history, when is a continuity test appropriate?

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

126. When an authorized procedure reaches an unclear step, why should a circuit be isolated before resistance testing?

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

127. During a post-maintenance return-to-service check, how is current normally measured with a conventional meter?

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

128. Before documenting the final condition, what can a clamp meter help measure?

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

129. In a controlled training scenario, what can an oscilloscope add to a signal investigation?

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

130. When preparing a handoff to the next maintainer, what controls the use of an insulation tester?

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

131. After comparing the field condition with the drawing, why does instrument category rating matter?

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

132. Before making any temporary circuit change, why does probe placement matter?

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

133. During a weather-affected inspection, what should be selected before contacting a circuit?

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

134. After a switch movement does not complete, what makes a measurement record useful?

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

135. Before opening a relay or equipment case, a measurement is unexpected. What should happen first?

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

136. During a drawing and terminal audit, what should be defined before troubleshooting begins?

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

137. After a route does not release as expected, how should a failure be reproduced?

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

138. While isolating a suspected open circuit, why are known-good and known-bad boundaries useful?

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

139. While reviewing a new trouble report, what is the purpose of dividing a circuit path?

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

140. After an unexpected indication appears, what does a half-split method do?

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

141. During a supervisor-directed diagnostic task, why change one variable at a time?

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

142. During a recurring-fault investigation, what should be recorded for an intermittent fault?

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

143. After a measurement does not match the prediction, when is a wiggle or disturbance test acceptable?

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

144. While preparing equipment for a functional test, why can a reset mislead a troubleshooter?

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

145. When a signal response appears more permissive than expected, what separates evidence from assumption?

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

146. After a protective device operates, what should happen at the limit of the maintainer's authority?

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

147. While checking a battery-backed supply, what verifies that a correction worked?

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

148. When two indications do not agree, what does root-cause thinking add after a symptom is corrected?

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

149. During a planned maintenance shift, what is valuable in a recurring-fault log?

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

150. Before beginning a wayside inspection, what should be done when evidence remains insufficient?

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

Practice Exam 12: Answer Key and Explanations

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

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

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

6. C — The correct answer is Identify, control, and remove it under procedure. In practice, identify, control, and remove it under procedure. This preserves the safest known condition. It gives the maintainer evidence for the next decision. The alternatives rely on unverified assumptions. They may bypass a safeguard or introduce an unnecessary change. Record the result for restoration, review, and handoff.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

145. 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. B — 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. D — 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. A — 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.