

PRACTICE EXAM 5: NAEC CERTIFIED ELEVATOR TECHNICIAN SIMULATION (160 QUESTIONS)

This expanded practice exam contains 160 multiple-choice questions modeled proportionally on the NAEC CET content outline. The official CET certification examination contains 140 questions, is open book, and allows 6 hours. Select the single best answer for each question. A scaled score of 300 on the official 100-500 scale is required to pass the certification examination.

1. Before entering a pit where unexpected car movement is possible, what is the technician's primary control measure?

- A. Secure the elevator against movement using the prescribed lockout/tagout procedure
- B. Rely on the stop switch alone
- C. Place a warning cone at the landing
- D. Ask another worker to watch the controller

2. What should be done first when a technician discovers a damaged extension-cord jacket exposing conductors?

- A. Wrap the area with ordinary tape and continue
- B. Remove the cord from service and tag it for repair or disposal
- C. Use it only for low-current hand tools for the equipment being examined
- D. Keep it dry and finish the current task

3. Which ladder practice provides the most stable access to an elevated landing-door component?

- A. Stand on the top cap for additional reach

- B. Lean a closed stepladder against the entrance under the stated service conditions
- C. Place blocking under one rail on a slope
- D. Use an inspected ladder on a firm level surface with three-point contact

4. When welding near combustible hoistway materials, which precaution is most appropriate?

- A. Wet only the floor directly beneath the weld
- B. Close the landing doors and work without a watcher
- C. Establish hot-work controls, remove or shield combustibles, and maintain a fire watch
- D. Depend on the building sprinkler system alone during normal elevator operation

5. What is the safest response to an unknown liquid on a machine-room floor?

- A. Isolate the area, identify the substance, and follow the applicable spill procedure
- B. Step over it until scheduled maintenance under the stated service conditions
- C. Dilute it immediately with water for the equipment being examined
- D. Cover it with cardboard to prevent slipping during normal elevator operation

6. Before using a portable meter on an energized circuit, what must the technician verify?

- A. The meter display illuminates when switched on
- B. The meter, leads, category rating, and range are suitable and undamaged
- C. The leads are long enough to reach both terminals
- D. The selector is set to the lowest resistance range

7. Which action best controls the hazard created by tools left on a car top?

- A. Place tools near the car-top edge for visibility
- B. Leave tools beside the crosshead during testing under the stated service conditions
- C. Set tools on the handrail when both hands are needed
- D. Use secured tool storage and account for tools before moving the car

8. What is the correct response when a required machine guard has been removed for servicing?

- A. Operate slowly while another person observes
- B. Keep equipment de-energized until the guard is properly reinstalled
- C. Run one normal trip to confirm alignment
- D. Post a warning sign and return equipment to service

9. Which condition requires immediate fall-protection planning before work begins?

- A. Working beside a closed and locked landing door
- B. Reading prints inside the machine room under the stated service conditions
- C. Exposure to an unprotected hoistway opening where a fall can occur
- D. Inspecting tools at ground level during normal elevator operation

10. Why should a technician test an electrical circuit after applying lockout/tagout?

- A. To discharge every capacitor automatically during normal elevator operation
- B. To reset all controller fault histories under the stated service conditions
- C. To prove the disconnect handle is mechanically tight
- D. To verify absence of voltage and confirm the correct energy source was isolated

11. During team troubleshooting, what communication practice best prevents unexpected car movement?

- A. Designate one person to direct movement and require clear confirmation before each command
- B. Allow any worker to operate controls when ready
- C. Use hand signals without discussing their meaning for the equipment being examined
- D. Keep the car moving to reduce diagnostic time

12. What personal protective equipment is specifically intended to reduce eye injury from flying metal chips?

- A. A cotton cap with a short brim
- B. Hearing protectors with a high rating
- C. Safety glasses with appropriate side protection
- D. Leather gloves with extended cuffs

13. A technician smells overheated insulation at a controller. What is the best immediate action?

- A. Increase ventilation and continue normal service during normal elevator operation
- B. Stop operation safely, isolate energy as appropriate, and investigate the source
- C. Reset the main disconnect several times for the equipment being examined
- D. Spray general-purpose cleaner inside the cabinet during normal elevator operation

14. Why must barricades around an open landing entrance be substantial and controlled?

- A. They are needed mainly to reserve workspace for tools
- B. They reduce noise transmitted into occupied floors under the stated service conditions
- C. They show inspectors that maintenance is underway for the equipment being examined
- D. They must prevent people from entering the fall zone, not merely warn them

15. When moving a heavy motor component, what should determine the rigging method?

- A. The number of workers available to pull the load
- B. The shortest route regardless of overhead clearance under the stated service conditions
- C. Verified load weight, center of gravity, path, and rated capacity of each device
- D. The color code painted on the old lifting eye

16. What is the purpose of maintaining required clear working space around electrical equipment?

- A. To permit safe access, operation, and escape during electrical work
- B. To provide storage for replacement contactors
- C. To improve wireless communication in the room
- D. To keep lubricants near the controller cabinet

17. If a coworker receives an electrical shock and remains in contact with the source, what should be done first?

- A. De-energize the source without directly touching the person, then summon emergency help
- B. Pull the person away immediately with bare hands
- C. Pour water on the contact point to cool it
- D. Wait for the circuit protective device to operate

18. Which housekeeping practice most directly reduces slips and trips in a machine room?

- A. Stack parts beside the disconnect for quick access
- B. Route temporary cords across the doorway under the stated service conditions
- C. Leave absorbent granules until the next visit for the equipment being examined
- D. Keep travel paths clear and clean leaked oil promptly using the approved method

19. Before returning an elevator to service after maintenance, what is the final safety priority?

- A. Erase all maintenance notes from the controller during normal elevator operation
- B. Operate at full speed before closing entrances under the stated service conditions
- C. Confirm guards, circuits, tools, personnel, and operating modes are restored to safe condition
- D. Leave inspection controls selected for the next visit

20. What is the principal function of elevator guide rails?

- A. Carry normal suspended load instead of the ropes
- B. Guide the car and counterweight along their intended vertical paths
- C. Supply electrical power to the traveling cable
- D. Ventilate the hoistway during normal operation

21. What does excessive wear on one side of a guide shoe most strongly suggest?

- A. Correctly balanced loading under all conditions
- B. Excessive hydraulic oil temperature under the stated service conditions
- C. A failed car-operating-panel lamp for the equipment being examined
- D. Misalignment, unequal shoe adjustment, or a related guiding problem

22. Why are hoistway door interlocks critical to passenger safety?

- A. They regulate car acceleration during every run during normal elevator operation
- B. They prevent normal car movement unless landing doors are closed and locked
- C. They support the full weight of each landing door
- D. They provide normal lighting inside the car during normal elevator operation

23. Which observation most clearly indicates a traveling-cable routing problem?

- A. The cable rubs a fixed hoistway member during car travel
- B. The cable forms a smooth free-hanging loop
- C. The cable remains clear throughout the full run
- D. The conductors pass their electrical tests

24. What is the purpose of a counterweight guard at the lower hoistway?

- A. Increase traction between ropes and sheave
- B. Reduce electrical noise in position circuits
- C. Restrict access to the counterweight's path and crushing zone

D. Collect hydraulic oil from the cylinder head

25. Why must rail joints be smooth and properly aligned?

- A. Discontinuities can cause vibration, guide wear, and poor ride quality
- B. Joints provide the primary electrical ground path
- C. Rough joints improve safety-gear stopping force
- D. Offset joints compensate for rope stretch

26. What condition should be checked when a car consistently stops differently at one landing only?

- A. The main-line voltage for the entire building
- B. The counterweight filler weights at the bottom floor
- C. The landing vane, selector target, or position reference at that floor
- D. The oil viscosity in a traction machine bearing

27. What is the safest way to evaluate pit-water accumulation?

- A. Run the elevator repeatedly to splash the water away
- B. Use any portable household pump without inspection
- C. Ignore shallow water if the buffers remain visible
- D. Identify the source, control electrical exposure, and arrange approved removal

28. Why is adequate clearance around moving hoistway equipment essential?

- A. It makes the elevator travel faster with less power
- B. It prevents interference, impact, and trapping throughout the full travel
- C. It eliminates the need for final-limit switches
- D. It allows landing doors to remain partially open

29. A repetitive scraping sound occurs at the same vertical position on every trip. Where should inspection focus first?

- A. The lobby pushbutton at the main floor during normal elevator operation
- B. The motor bearings regardless of car position under the stated service conditions
- C. Fixed hoistway equipment near that elevation and the moving components passing it
- D. The building fire-alarm annunciator during normal elevator operation

30. What is the primary purpose of terminal stopping devices?

- A. Initiate stopping near the terminal and protect against travel beyond the normal limit
- B. Hold landing doors mechanically closed during a fire
- C. Measure passenger load inside the car for the equipment being examined
- D. Lubricate guide rails at each terminal landing during normal elevator operation

31. Why should hoistway projections and ledges be kept free of loose material?

- A. Loose material improves acoustic damping during normal elevator operation
- B. Vibration can dislodge objects and cause falling-object damage or injury
- C. Objects help indicate the car's speed
- D. Debris prevents condensation on equipment during normal elevator operation

32. What does a damaged fascia or toe guard at a landing primarily threaten?

- A. Normal motor cooling in the machine room during normal elevator operation
- B. Traction between suspension ropes and sheave under the stated service conditions
- C. Operation of the car ventilation fan for the equipment being examined
- D. Protection against exposure to the hoistway space during leveling or rescue conditions

33. What is the best basis for establishing preventive-maintenance intervals?

- A. Equipment condition, usage, environment, manufacturer guidance, and code requirements
- B. A fixed annual visit for every component
- C. The age of the building alone
- D. Only the number of callbacks received

34. Why should technicians document readings and adjustments during routine maintenance?

- A. Records eliminate the need for future inspections
- B. Documentation automatically proves code compliance under the stated service conditions
- C. Readings replace functional testing of safety devices
- D. Trends reveal gradual deterioration and provide a traceable service history

35. What is the correct approach to lubrication of an elevator component?

- A. Mix available lubricants to improve viscosity during normal elevator operation
- B. Use the specified lubricant in the correct amount at the intended points
- C. Apply extra lubricant whenever noise is heard for the equipment being examined
- D. Lubricate sealed components through any opening during normal elevator operation

36. A fuse repeatedly opens after replacement. What should the technician do?

- A. Install a larger fuse to prevent another interruption
- B. Bridge the fuse temporarily during diagnosis under the stated service conditions
- C. Find and correct the overcurrent cause before replacing the fuse again
- D. Continue replacing fuses until one remains closed

37. What is the value of cleaning before inspecting a mechanical assembly?

- A. It increases every fastener's clamping force

- B. It exposes cracks, wear patterns, loose fasteners, and leakage paths
- C. It resets the controller's learned values
- D. It removes the need to measure clearances

38. Which condition most strongly supports replacing a bearing rather than merely adding lubricant?

- A. A clean housing with normal temperature
- B. A stable sound that matches baseline records
- C. Persistent roughness, excessive play, heat, or noise after correct lubrication
- D. Manufacturer lubrication completed on schedule during normal elevator operation

39. Why should replacement parts match required specifications?

- A. Any physically similar part will perform identically
- B. Higher cost always indicates correct suitability under the stated service conditions
- C. Matching paint color confirms equivalent construction for the equipment being examined
- D. Dimensions, ratings, materials, and performance must remain compatible with the system

40. After correcting an intermittent fault, what is the strongest confirmation of repair?

- A. Repeat the triggering conditions and verify reliable operation through multiple cycles
- B. Clear the fault log without operating the car
- C. Assume the repair succeeded because the symptom stopped
- D. Return service immediately after tightening one connection

41. What should happen to an unauthorized jumper found in a safety circuit?

- A. Label it and leave it for future troubleshooting
- B. Replace it with a heavier conductor under the stated service conditions
- C. Remove it under controlled conditions, restore the intended circuit, and test operation
- D. Hide it inside the wire duct to prevent disturbance

42. What is the primary function of the control valve in a hydraulic elevator?

- A. Store electrical energy for emergency lighting during normal elevator operation
- B. Direct and regulate oil flow to control starting, speed, leveling, and stopping
- C. Carry the car load through suspension ropes for the equipment being examined
- D. Lock each landing door mechanically during normal elevator operation

43. What does foamy oil in a hydraulic tank commonly indicate?

- A. Correct thermal expansion at normal temperature during normal elevator operation
- B. Excessive traction on the drive sheave under the stated service conditions
- C. A properly adjusted door restrictor for the equipment being examined
- D. Air entrainment caused by leakage, low oil level, turbulence, or return-line conditions

44. A hydraulic car slowly settles with no demand. Which area warrants investigation?

- A. Valve leakage, cylinder leakage, piping leakage, or another loss of pressure
- B. Only the car operating panel lamps under the stated service conditions
- C. The traction counterweight balance for the equipment being examined
- D. The escalator handrail drive chain during normal elevator operation

45. Why must hydraulic oil temperature remain within the equipment's intended range?

- A. Temperature directly changes hoist-rope diameter during normal elevator operation
- B. Viscosity changes affect leakage, valve response, efficiency, and leveling
- C. Warm oil mechanically locks landing doors
- D. Cool oil increases car enclosure strength

46. What is the purpose of a rupture valve or equivalent protective device where required?

- A. Increase upward speed during peak traffic
- B. Vent air from the car enclosure
- C. Bypass the main disconnect during rescue
- D. Limit uncontrolled downward movement following a major hydraulic line failure

47. Before opening a pressurized hydraulic connection, what is essential?

- A. Run the pump continuously to stabilize pressure
- B. Open the fitting quickly while wearing gloves
- C. Secure the car, isolate energy, and safely relieve stored hydraulic pressure
- D. Raise the relief-valve setting to stop leakage

48. What condition is most consistent with pump cavitation?

- A. A gravel-like noise with unstable flow caused by inadequate inlet pressure
- B. Silent operation with smooth acceleration under the stated service conditions
- C. A brighter car light during upward travel
- D. Even guide-shoe wear on all rails during normal elevator operation

49. Why is a clean hydraulic reservoir important?

- A. It increases the rated load of the elevator
- B. It replaces the need for pressure testing
- C. It prevents all temperature changes in the oil
- D. Contamination can damage pumps and valves and obstruct small control passages

50. What is the purpose of an elevator safety circuit?

- A. Select decorative lighting colors in the car

- B. Increase motor torque above its rating
- C. Permit operation only when monitored protective conditions are satisfied
- D. Store maintenance records independently of power

51. A relay coil is energized but its contacts do not change state. What is the most likely fault category?

- A. Mechanical binding, damaged armature, or defective contact assembly
- B. Correct operation of a healthy relay
- C. A hydraulic cylinder packing leak
- D. Excessive tension in an escalator handrail

52. Why are electrical schematics traced from source through loads and returns during diagnosis?

- A. The drawing automatically changes controller parameters during normal elevator operation
- B. The complete current path reveals where the expected voltage or continuity is lost
- C. Tracing increases the circuit's available current for the equipment being examined
- D. The process mechanically adjusts relay contacts during normal elevator operation

53. What does an input indicator at the controller normally show?

- A. Whether the controller recognizes the associated field signal or logic state
- B. The exact mechanical wear of a guide shoe
- C. The remaining oil life in every bearing
- D. The physical strength of a landing sill

54. Why should a replacement contactor have the correct coil voltage and contact ratings?

- A. Ratings affect only the printed label during normal elevator operation
- B. Any higher coil voltage improves reliability under the stated service conditions
- C. Contact ratings are irrelevant on alternating current for the equipment being examined
- D. Incorrect ratings can cause failure to pull in, overheating, welding, or insulation damage

55. What is the value of reviewing stored fault history before resetting a controller?

- A. Resetting first permanently improves the evidence during normal elevator operation
- B. Fault history proves every component is serviceable under the stated service conditions
- C. The sequence and conditions can identify the initiating fault and affected subsystem
- D. The log replaces physical inspection and testing during normal elevator operation

56. A sensor LED changes state correctly, but the controller input does not. What should be checked next?

- A. The car floor covering and wall panels
- B. Wiring, terminals, interface voltage, and input-channel condition between them
- C. Hydraulic oil level on a traction elevator
- D. Escalator combplate alignment during normal elevator operation

57. What creates the traction that moves a conventional traction elevator?

- A. Hydraulic pressure acting directly on a piston
- B. Frictional engagement between suspension ropes and the drive sheave
- C. A rack gear fixed to every landing sill
- D. Air pressure inside the hoistway during normal elevator operation

58. Why is balanced rope tension important on a traction elevator?

- A. It distributes load and reduces unequal wear on ropes, sheaves, and hitch components
- B. It eliminates the need for guide rails under the stated service conditions
- C. It increases rated speed automatically for the equipment being examined
- D. It keeps landing doors electrically locked during normal elevator operation

59. What is the primary function of the machine brake during normal stopping?

- A. Provide all acceleration during upward travel during normal elevator operation
- B. Guide the counterweight between rails under the stated service conditions
- C. Hold the elevator stationary after drive torque has brought it to a controlled stop
- D. Supply power to the door operator during normal elevator operation

60. What can worn drive-sheave grooves cause?

- A. Higher hydraulic pressure in the cylinder
- B. Improved electrical insulation resistance under the stated service conditions
- C. Stronger landing-door interlock engagement for the equipment being examined
- D. Unequal rope seating, altered traction, rope wear, and ride problems

61. Why should motor ventilation openings remain clean?

- A. Restricted airflow raises winding temperature and shortens insulation life
- B. Clean openings increase suspension-rope strength under the stated service conditions
- C. Airflow mechanically levels the car for the equipment being examined
- D. Ventilation keeps landing doors locked during normal elevator operation

62. What is a key purpose of the counterweight?

- A. Close the landing doors at every floor during normal elevator operation
- B. Pressurize the hydraulic control valve under the stated service conditions
- C. Power emergency communications for the equipment being examined
- D. Offset car and part of the rated load to reduce required drive effort

63. A traction machine develops a new cyclic vibration tied to sheave rotation. What should be examined?

- A. Only the lobby hall lantern during normal elevator operation
- B. The hydraulic tank return line under the stated service conditions
- C. Sheave condition, bearings, rope seating, alignment, and rotating balance
- D. The escalator combplate switch during normal elevator operation

64. Before modernization work begins, what should a thorough site assessment establish?

- A. Only the desired car-finish color during normal elevator operation
- B. Existing conditions, hazards, interfaces, access, dimensions, utilities, and work sequencing
- C. The shortest possible material list for the equipment being examined
- D. A verbal promise that power is available

65. Why should field dimensions be verified rather than relying only on old drawings?

- A. Drawings always show future modifications during normal elevator operation
- B. Measurements are needed only for cosmetic work under the stated service conditions
- C. Buildings and equipment may differ because of tolerances, alterations, or inaccurate records
- D. Old prints automatically reflect as-built conditions during normal elevator operation

66. What is the purpose of identifying the authority having jurisdiction during planning?

- A. To select the elevator's interior music
- B. To determine applicable permits, inspections, adopted codes, and acceptance requirements
- C. To replace the need for engineering review
- D. To establish employee payroll rates during normal elevator operation

67. Which assessment finding most directly affects material-handling planning?

- A. Restricted entrances, floor loading limits, overhead clearances, and delivery routes

- B. The number of lobby plants under the stated service conditions
- C. The color of the machine-room walls
- D. The brand of tenant furniture during normal elevator operation

68. Why should adjacent occupied areas be included in the work plan?

- A. Occupants can operate the elevator during repairs
- B. Occupied areas eliminate the need for barricades
- C. Tenant schedules determine electrical ratings for the equipment being examined
- D. Noise, dust, access, egress, and public protection must be controlled

69. What should be documented when existing equipment shows unusual damage before work starts?

- A. Only the technician's informal opinion during normal elevator operation
- B. Location, extent, measurements, photographs, operating effects, and responsible notifications
- C. A replacement date without any evidence
- D. The damage after it has been concealed

70. What is the correct response to suspension-rope diameter reduction beyond acceptable limits?

- A. Add heavy lubricant to restore diameter during normal elevator operation
- B. Tighten one rope until all appear equal under the stated service conditions
- C. Evaluate against governing removal criteria and replace as required, not merely retension
- D. Reverse the ropes to hide the worn side

71. Why should brake linings and braking surfaces be kept free of oil?

- A. Oil can reduce friction and compromise stopping or holding performance
- B. Oil increases the brake's electrical resistance
- C. Lubrication strengthens the brake spring for the equipment being examined
- D. Oil improves traction-rope groove geometry during normal elevator operation

72. What does black dust concentrated around a traction sheave warrant?

- A. Immediate increase of motor speed during normal elevator operation
- B. Addition of hydraulic oil to the machine
- C. Adjustment of landing-door pickup rollers only for the equipment being examined
- D. Inspection of rope and groove wear, traction conditions, alignment, and contamination

73. Why is brake-plunger or linkage freedom checked during maintenance?

- A. It controls the car-lighting brightness during normal elevator operation
- B. Binding can delay application or release and change braking performance
- C. It establishes guide-rail spacing for the equipment being examined
- D. It regulates hydraulic oil viscosity during normal elevator operation

74. After adjusting traction-machine brake components, what verification is required?

- A. Functional stopping and holding tests under the prescribed conditions
- B. A visual check from across the room only
- C. One empty-car door cycle for the equipment being examined
- D. Resetting the controller clock during normal elevator operation

75. What should be checked when a hydraulic elevator levels accurately cold but poorly after heavy use?

- A. Only the car wall panels during normal elevator operation
- B. Traction-rope equalization under the stated service conditions
- C. Escalator handrail tension for the equipment being examined
- D. Oil temperature, viscosity effects, valve adjustment, leakage, and pump condition

76. Why should cylinder-head leakage be corrected promptly?

- A. Leakage improves plunger lubrication indefinitely during normal elevator operation
- B. It increases the elevator's rated load under the stated service conditions
- C. Oil loss can worsen sealing, contaminate the pit, and affect reliable operation
- D. It prevents air from entering the reservoir during normal elevator operation

77. What is the maintenance purpose of checking relief-valve operation?

- A. Set the normal leveling speed during normal elevator operation
- B. Hold landing doors closed under the stated service conditions
- C. Confirm excessive system pressure is limited at the specified setting
- D. Measure guide-rail alignment during normal elevator operation

78. What does a darkened oil sample with burnt odor suggest?

- A. Ideal oil condition after break-in
- B. Thermal degradation or contamination requiring investigation
- C. Correct rope lubrication for the equipment being examined
- D. Normal landing-door operation during normal elevator operation

79. After replacing a hydraulic hose, what must be verified before normal service?

- A. Only that the hose color matches the original
- B. That it touches the pump to reduce vibration
- C. That the relief valve has been bypassed
- D. Correct rating and routing, leak-free connections, clearance, and tested operation

80. What is essential before servicing an unfamiliar special-application lift?

- A. Identify its drive system, applicable instructions, hazards, and required code provisions

- B. Assume it operates like a standard traction elevator
- C. Use the nearest controller schematic regardless of model
- D. Disable all protective devices to observe movement

81. Why are manufacturer instructions especially important for limited-use or special-purpose equipment?

- A. They replace every adopted safety code during normal elevator operation
- B. They allow any unlisted replacement part under the stated service conditions
- C. Unique components and operating sequences may not match conventional elevator practice
- D. They eliminate the need for trained personnel

82. What should be confirmed before manually moving a screw-driven platform lift?

- A. That the landing gate can remain open
- B. That passengers can push from the platform
- C. That the drive nut is lubricated with any available oil
- D. The approved manual-lowering method, load condition, clear path, and energy isolation

83. What is a key inspection concern for a rack-and-pinion drive?

- A. Hydraulic cylinder packing only during normal elevator operation
- B. Tooth condition, engagement, lubrication, alignment, and mounting security
- C. Traction-rope groove depth only for the equipment being examined
- D. Counterweight filler-weight paint during normal elevator operation

84. Why must rescue procedures be equipment-specific?

- A. Entrapment release points, stored energy, access, and manual movement methods differ
- B. Every elevator uses an identical brake release
- C. Rescue never requires communication for the equipment being examined

D. Doors may always be forced open safely

85. What is the purpose of a car-door reopening device?

- A. Measure suspension-rope tension during normal elevator operation
- B. Detect an obstruction and initiate reopening during the closing cycle
- C. Control hydraulic relief pressure for the equipment being examined
- D. Align the counterweight guide rails during normal elevator operation

86. Why must car-top escape equipment remain secured for normal operation?

- A. Unauthorized opening can expose occupants to the hoistway and moving equipment
- B. It controls car ventilation volume under the stated service conditions
- C. It sets the elevator's rated speed for the equipment being examined
- D. It balances suspension-rope tension during normal elevator operation

87. A loose car-panel fastener should be corrected because it can cause what problem?

- A. Higher hydraulic pressure during normal elevator operation
- B. Incorrect controller line voltage under the stated service conditions
- C. Loss of traction-rope lubrication for the equipment being examined
- D. Rattling, sharp edges, panel detachment, or interference with adjacent equipment

88. What must be considered when replacing car-interior materials?

- A. Color compatibility alone during normal elevator operation
- B. The lowest available purchase price under the stated service conditions
- C. Flame, smoke, weight, attachment, clearance, and applicable code requirements
- D. Whether the material increases motor speed

89. What is the purpose of audible and visible car-position indicators?

- A. Provide floor and travel information through more than one sensory mode
- B. Increase motor torque during leveling under the stated service conditions
- C. Lubricate landing-door tracks for the equipment being examined
- D. Measure hydraulic cylinder leakage during normal elevator operation

90. Why must accessible operating controls remain within prescribed reach and usable-force limits?

- A. The limits increase elevator travel speed during normal elevator operation
- B. Passengers with limited reach or dexterity must be able to operate them independently
- C. They reduce suspension-rope wear for the equipment being examined
- D. They set hydraulic relief pressure during normal elevator operation

91. What is the maintenance priority when tactile markings on a control become loose or unreadable?

- A. Remove all markings for visual consistency
- B. Increase button operating force under the stated service conditions
- C. Disable the associated floor selection
- D. Restore durable, correctly associated tactile identification promptly

92. What is the function of an escalator combplate?

- A. Drive the handrail at rated speed during normal elevator operation
- B. Support the main truss at midspan under the stated service conditions
- C. Provide the transition where step treads enter or leave the landing and limit entrapment gaps
- D. Apply the main machine brake during normal elevator operation

93. Why should escalator handrail speed be compared with step speed?

- A. Matching speeds increases building voltage during normal elevator operation
- B. The comparison sets combplate height under the stated service conditions
- C. Handrail speed controls sprinkler flow for the equipment being examined
- D. Excessive mismatch can destabilize passengers who rely on the handrail

94. What does a missing or damaged step demarcation primarily affect?

- A. Passenger awareness of step boundaries and safe foot placement
- B. Machine-room ventilation under the stated service conditions
- C. Hydraulic cylinder pressure for the equipment being examined
- D. Elevator guide-rail alignment during normal elevator operation

95. What is the central operational restriction for a dumbwaiter not designed for passengers?

- A. Loads may exceed rated capacity if centered
- B. Landing doors may remain open during travel
- C. People must never ride in the carrier
- D. Interlocks may be bypassed for loading

96. Why must material-lift loads remain within rating and properly distributed?

- A. It changes only the platform paint finish during normal elevator operation
- B. Overload or poor placement can overstress the drive, platform, guides, and braking system
- C. It improves stopping by adding friction for the equipment being examined
- D. It eliminates the need to secure the load

97. What should a technician investigate when several consecutive escalator steps show abnormal side wear?

- A. Elevator hydraulic oil viscosity during normal elevator operation
- B. Track alignment, step-chain condition, rollers, clearances, and foreign material

- C. Car-top inspection controls for the equipment being examined
- D. Traction-elevator counterweight balance during normal elevator operation

98. After servicing an escalator combplate device, what must be confirmed?

- A. Only that the landing floor is clean
- B. That the handrail has been painted
- C. Correct comb engagement and protective-device operation through prescribed testing
- D. That the machine brake is permanently released

99. What is the safest maintenance approach to a proprietary special-lift drive?

- A. Use the correct manufacturer procedure, qualified personnel, and compatible parts
- B. Apply a standard traction adjustment regardless of design
- C. Substitute parts based only on physical appearance
- D. Operate with guards removed to observe every cycle

100. Why should an emergency-lowering system be tested at required intervals?

- A. To increase normal rated speed during normal elevator operation
- B. To replace routine drive maintenance under the stated service conditions
- C. To bypass landing-door protection for the equipment being examined
- D. To confirm stored energy, controls, brakes, and descent functions operate when normal power is unavailable

101. During a safety review, a trainee proposes: 'Rely on the stop switch alone.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty under the stated service conditions

- C. Reject that proposal and secure the elevator against movement using the prescribed lockout/tagout procedure
- D. Delay evaluation until the next scheduled visit during normal elevator operation

102. During a safety review, a trainee proposes: 'Use it only for low-current hand tools.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Reject that proposal and remove the cord from service and tag it for repair or disposal
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

103. During a safety review, a trainee proposes: 'Place blocking under one rail on a slope.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty under the stated service conditions
- C. Delay evaluation until the next scheduled visit for the equipment being examined
- D. Reject that proposal and use an inspected ladder on a firm level surface with three-point contact

104. During a safety review, a trainee proposes: 'Wet only the floor directly beneath the weld.' Which response identifies the best corrective course?

- A. Reject that proposal and establish hot-work controls, remove or shield combustibles, and maintain a fire watch
- B. Accept it without further checks under the stated service conditions
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

105. During a safety review, a trainee proposes: 'Dilute it immediately with water.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Reject that proposal and isolate the area, identify the substance, and follow the applicable spill procedure
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

106. During a safety review, a trainee proposes: 'The selector is set to the lowest resistance range.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty under the stated service conditions
- C. Reject that proposal and the meter, leads, category rating, and range are suitable and undamaged
- D. Delay evaluation until the next scheduled visit during normal elevator operation

107. During a safety review, a trainee proposes: 'Place tools near the car-top edge for visibility.' Which response identifies the best corrective course?

- A. Reject that proposal and use secured tool storage and account for tools before moving the car
- B. Accept it without further checks under the stated service conditions
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

108. During a safety review, a trainee proposes: 'Run one normal trip to confirm alignment.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty
- C. Delay evaluation until the next scheduled visit for the equipment being examined
- D. Reject that proposal and keep equipment de-energized until the guard is properly reinstalled

109. During a safety review, a trainee proposes: 'Inspecting tools at ground level.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty under the stated service conditions
- C. Delay evaluation until the next scheduled visit for the equipment being examined
- D. Reject that proposal and exposure to an unprotected hoistway opening where a fall can occur

110. During a safety review, a trainee proposes: 'To discharge every capacitor automatically.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty under the stated service conditions
- C. Reject that proposal and to verify absence of voltage and confirm the correct energy source was isolated
- D. Delay evaluation until the next scheduled visit during normal elevator operation

111. During a safety review, a trainee proposes: 'Use hand signals without discussing their meaning.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Reject that proposal and designate one person to direct movement and require clear confirmation before each command
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

112. During a hoistways review, a trainee proposes: 'Carry normal suspended load instead of the ropes.' Which response identifies the best corrective course?

- A. Reject that proposal and guide the car and counterweight along their intended vertical paths
- B. Accept it without further checks under the stated service conditions
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

113. During a hoistways review, a trainee proposes: 'Excessive hydraulic oil temperature.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty
- C. Delay evaluation until the next scheduled visit for the equipment being examined
- D. Reject that proposal and misalignment, unequal shoe adjustment, or a related guiding problem

114. During a hoistways review, a trainee proposes: 'They provide normal lighting inside the car.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Reject that proposal and they prevent normal car movement unless landing doors are closed and locked
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

115. During a hoistways review, a trainee proposes: 'The cable forms a smooth free-hanging loop.' Which response identifies the best corrective course?

- A. Reject that proposal and the cable rubs a fixed hoistway member during car travel
- B. Accept it without further checks under the stated service conditions
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

116. During a hoistways review, a trainee proposes: 'Reduce electrical noise in position circuits.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty
- C. Reject that proposal and restrict access to the counterweight's path and crushing zone
- D. Delay evaluation until the next scheduled visit during normal elevator operation

117. During a hoistways review, a trainee proposes: 'Offset joints compensate for rope stretch.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty under the stated service conditions
- C. Delay evaluation until the next scheduled visit for the equipment being examined
- D. Reject that proposal and discontinuities can cause vibration, guide wear, and poor ride quality

118. During a hoistways review, a trainee proposes: 'The main-line voltage for the entire building.' Which response identifies the best corrective course?

- A. Reject that proposal and the landing vane, selector target, or position reference at that floor
- B. Accept it without further checks under the stated service conditions
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

119. During a general maintenance items review, a trainee proposes: 'A fixed annual visit for every component.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty
- C. Reject that proposal and equipment condition, usage, environment, manufacturer guidance, and code requirements
- D. Delay evaluation until the next scheduled visit during normal elevator operation

120. During a general maintenance items review, a trainee proposes: 'Documentation automatically proves code compliance.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Reject that proposal and trends reveal gradual deterioration and provide a traceable service history

- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

121. During a general maintenance items review, a trainee proposes: 'Lubricate sealed components through any opening.' Which response identifies the best corrective course?

- A. Reject that proposal and use the specified lubricant in the correct amount at the intended points
- B. Accept it without further checks under the stated service conditions
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

122. During a general maintenance items review, a trainee proposes: 'Install a larger fuse to prevent another interruption.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Reject that proposal and find and correct the overcurrent cause before replacing the fuse again
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

123. During a general maintenance items review, a trainee proposes: 'It resets the controller's learned values.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty under the stated service conditions
- C. Delay evaluation until the next scheduled visit for the equipment being examined
- D. Reject that proposal and it exposes cracks, wear patterns, loose fasteners, and leakage paths

124. During a general maintenance items review, a trainee proposes: 'Manufacturer lubrication completed on schedule.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation

- B. Use it only when the car is empty under the stated service conditions
- C. Reject that proposal and persistent roughness, excessive play, heat, or noise after correct lubrication
- D. Delay evaluation until the next scheduled visit during normal elevator operation

125. During a hydraulic elevators review, a trainee proposes: 'Store electrical energy for emergency lighting.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty under the stated service conditions
- C. Reject that proposal and direct and regulate oil flow to control starting, speed, leveling, and stopping
- D. Delay evaluation until the next scheduled visit during normal elevator operation

126. During a hydraulic elevators review, a trainee proposes: 'Excessive traction on the drive sheave.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty under the stated service conditions
- C. Delay evaluation until the next scheduled visit for the equipment being examined
- D. Reject that proposal and air entrainment caused by leakage, low oil level, turbulence, or return-line conditions

127. During a hydraulic elevators review, a trainee proposes: 'The escalator handrail drive chain.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Reject that proposal and valve leakage, cylinder leakage, piping leakage, or another loss of pressure
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

128. During a hydraulic elevators review, a trainee proposes: 'Temperature directly changes hoist-rope diameter.' Which response identifies the best corrective course?

- A. Reject that proposal and viscosity changes affect leakage, valve response, efficiency, and leveling
- B. Accept it without further checks under the stated service conditions
- C. Use it only when the car is empty
- D. Delay evaluation until the next scheduled visit during normal elevator operation

129. During a hydraulic elevators review, a trainee proposes: 'Vent air from the car enclosure.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Reject that proposal and limit uncontrolled downward movement following a major hydraulic line failure
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

130. During a controls review, a trainee proposes: 'Select decorative lighting colors in the car.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty
- C. Delay evaluation until the next scheduled visit for the equipment being examined
- D. Reject that proposal and permit operation only when monitored protective conditions are satisfied

131. During a controls review, a trainee proposes: 'A hydraulic cylinder packing leak.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty
- C. Reject that proposal and mechanical binding, damaged armature, or defective contact assembly
- D. Delay evaluation until the next scheduled visit during normal elevator operation

132. During a controls review, a trainee proposes: 'The process mechanically adjusts relay contacts.' Which response identifies the best corrective course?

- A. Reject that proposal and the complete current path reveals where the expected voltage or continuity is lost
- B. Accept it without further checks under the stated service conditions
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

133. During a controls review, a trainee proposes: 'The exact mechanical wear of a guide shoe.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty under the stated service conditions
- C. Reject that proposal and whether the controller recognizes the associated field signal or logic state
- D. Delay evaluation until the next scheduled visit during normal elevator operation

134. During a controls review, a trainee proposes: 'Any higher coil voltage improves reliability.' Which response identifies the best corrective course?

- A. Reject that proposal and incorrect ratings can cause failure to pull in, overheating, welding, or insulation damage
- B. Accept it without further checks under the stated service conditions
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

135. During a electric/traction elevators review, a trainee proposes: 'Hydraulic pressure acting directly on a piston.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty
- C. Delay evaluation until the next scheduled visit for the equipment being examined
- D. Reject that proposal and frictional engagement between suspension ropes and the drive sheave

136. During a electric/traction elevators review, a trainee proposes: 'It increases rated speed automatically.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Reject that proposal and it distributes load and reduces unequal wear on ropes, sheaves, and hitch components
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

137. During a electric/traction elevators review, a trainee proposes: 'Supply power to the door operator.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty under the stated service conditions
- C. Delay evaluation until the next scheduled visit for the equipment being examined
- D. Reject that proposal and hold the elevator stationary after drive torque has brought it to a controlled stop

138. During a job site assessment review, a trainee proposes: 'Only the desired car-finish color.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Reject that proposal and existing conditions, hazards, interfaces, access, dimensions, utilities, and work sequencing
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

139. During a job site assessment review, a trainee proposes: 'Measurements are needed only for cosmetic work.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty under the stated service conditions

- C. Reject that proposal and buildings and equipment may differ because of tolerances, alterations, or inaccurate records
- D. Delay evaluation until the next scheduled visit during normal elevator operation

140. During a job site assessment review, a trainee proposes: 'To establish employee payroll rates.' Which response identifies the best corrective course?

- A. Reject that proposal and to determine applicable permits, inspections, adopted codes, and acceptance requirements
- B. Accept it without further checks under the stated service conditions
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

141. During a maintenance on electric/traction elevator items review, a trainee proposes: 'Add heavy lubricant to restore diameter.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty under the stated service conditions
- C. Delay evaluation until the next scheduled visit for the equipment being examined
- D. Reject that proposal and evaluate against governing removal criteria and replace as required, not merely retention

142. During a maintenance on electric/traction elevator items review, a trainee proposes: 'Lubrication strengthens the brake spring.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Reject that proposal and oil can reduce friction and compromise stopping or holding performance
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

143. During a maintenance on electric/traction elevator items review, a trainee proposes: 'Adjustment of landing-door pickup rollers only.' Which response identifies the best corrective course?

- A. Reject that proposal and inspection of rope and groove wear, traction conditions, alignment, and contamination
- B. Accept it without further checks under the stated service conditions
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

144. During a maintenance on electric/traction elevator items review, a trainee proposes: 'It controls the car-lighting brightness.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty under the stated service conditions
- C. Reject that proposal and binding can delay application or release and change braking performance
- D. Delay evaluation until the next scheduled visit during normal elevator operation

145. During a special application elevators or other elevators with driving machines review, a trainee proposes: 'Assume it operates like a standard traction elevator.' Which response identifies the best corrective course?

- A. Reject that proposal and identify its drive system, applicable instructions, hazards, and required code provisions
- B. Accept it without further checks under the stated service conditions
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

146. During a special application elevators or other elevators with driving machines review, a trainee proposes: 'They allow any unlisted replacement part.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Reject that proposal and unique components and operating sequences may not match conventional elevator practice

- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

147. During a special application elevators or other elevators with driving machines review, a trainee proposes: 'That the drive nut is lubricated with any available oil.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty under the stated service conditions
- C. Delay evaluation until the next scheduled visit for the equipment being examined
- D. Reject that proposal and the approved manual-lowering method, load condition, clear path, and energy isolation

148. During a special application elevators or other elevators with driving machines review, a trainee proposes: 'Hydraulic cylinder packing only.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty
- C. Reject that proposal and tooth condition, engagement, lubrication, alignment, and mounting security
- D. Delay evaluation until the next scheduled visit during normal elevator operation

149. During a maintenance on hydraulic elevator items review, a trainee proposes: 'Only the car wall panels.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Reject that proposal and oil temperature, viscosity effects, valve adjustment, leakage, and pump condition
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

150. During a maintenance on hydraulic elevator items review, a trainee proposes: 'It increases the elevator's rated load.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty under the stated service conditions
- C. Delay evaluation until the next scheduled visit for the equipment being examined
- D. Reject that proposal and oil loss can worsen sealing, contaminate the pit, and affect reliable operation

151. During a car enclosures review, a trainee proposes: 'Measure suspension-rope tension.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty under the stated service conditions
- C. Reject that proposal and detect an obstruction and initiate reopening during the closing cycle
- D. Delay evaluation until the next scheduled visit during normal elevator operation

152. During a car enclosures review, a trainee proposes: 'It sets the elevator's rated speed.' Which response identifies the best corrective course?

- A. Reject that proposal and unauthorized opening can expose occupants to the hoistway and moving equipment
- B. Accept it without further checks under the stated service conditions
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

153. During a accessibility devices review, a trainee proposes: 'Increase motor torque during leveling.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty under the stated service conditions
- C. Delay evaluation until the next scheduled visit for the equipment being examined
- D. Reject that proposal and provide floor and travel information through more than one sensory mode

154. During a accessibility devices review, a trainee proposes: 'They reduce suspension-rope wear.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty under the stated service conditions
- C. Reject that proposal and passengers with limited reach or dexterity must be able to operate them independently
- D. Delay evaluation until the next scheduled visit during normal elevator operation

155. During a escalators & moving walks review, a trainee proposes: 'Drive the handrail at rated speed.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Reject that proposal and provide the transition where step treads enter or leave the landing and limit entrapment gaps
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

156. During a escalators & moving walks review, a trainee proposes: 'The comparison sets combplate height.' Which response identifies the best corrective course?

- A. Reject that proposal and excessive mismatch can destabilize passengers who rely on the handrail
- B. Accept it without further checks under the stated service conditions
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

157. During a maintenance on escalators (interior & exterior) review, a trainee proposes: 'Elevator hydraulic oil viscosity.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty
- C. Delay evaluation until the next scheduled visit for the equipment being examined

D. Reject that proposal and track alignment, step-chain condition, rollers, clearances, and foreign material

158. During a maintenance on escalators (interior & exterior) review, a trainee proposes: 'That the handrail has been painted.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Use it only when the car is empty
- C. Reject that proposal and correct comb engagement and protective-device operation through prescribed testing
- D. Delay evaluation until the next scheduled visit during normal elevator operation

159. During a dumbwaiters & material lifts review, a trainee proposes: 'Loads may exceed rated capacity if centered.' Which response identifies the best corrective course?

- A. Reject that proposal and people must never ride in the carrier
- B. Accept it without further checks under the stated service conditions
- C. Use it only when the car is empty
- D. Delay evaluation until the next scheduled visit

160. During a maintenance on special application elevators or other elevators with driving machines review, a trainee proposes: 'Apply a standard traction adjustment regardless of design.' Which response identifies the best corrective course?

- A. Accept it without further checks during normal elevator operation
- B. Reject that proposal and use the correct manufacturer procedure, qualified personnel, and compatible parts
- C. Use it only when the car is empty for the equipment being examined
- D. Delay evaluation until the next scheduled visit during normal elevator operation

Practice Exam 5: Answer Key and Explanations

- 1. A** — Lockout/tagout controls hazardous energy at its source. A stop switch is an operational control, not complete energy isolation, while cones and observers do not prevent unintended energization. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.
- 2. B** — Exposed conductors create shock, arc, and fire hazards. Removing the cord from service prevents continued exposure; temporary tape and reduced loading do not restore the cord's listed insulation or mechanical protection. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function. Verification prevents unsafe recurrence.
- 3. D** — Proper setup and three-point contact reduce tipping and fall risk. Top-cap standing, leaning a closed stepladder, and improvised blocking defeat the ladder's intended geometry and safe-use instructions. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.
- 4. C** — Hot-work planning controls sparks, slag, heat transfer, and delayed ignition. A limited wet area, closed doors, or sprinklers alone cannot address concealed combustibles or a fire that begins after welding stops. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function. Verification prevents unsafe recurrence.
- 5. A** — Unknown liquids can create chemical, electrical, and slip hazards. Identification and the site spill procedure determine suitable protection and cleanup; dilution or covering may spread the material or conceal the hazard. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function. Verification prevents unsafe recurrence.
- 6. B** — A suitable measurement category, voltage rating, range, and intact leads protect against transient energy and insulation failure. A lit display or convenient lead length does not establish electrical safety; resistance mode on an energized circuit can damage the meter. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function.
- 7. D** — Secured storage prevents tools from falling into the hoistway or contacting moving equipment. An inventory before movement also prevents forgotten objects from striking structures, damaging equipment, or endangering people below. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.
- 8. B** — The guard is an engineered barrier against moving parts. Until it is restored, warning signs, reduced speed, and observation do not provide equivalent protection from entanglement, crushing, or unexpected component failure. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function. Verification prevents unsafe recurrence.

9. C — An open hoistway presents a potentially fatal fall hazard and requires barriers, restraint, arrest, or another approved control. Closed entrances and ground-level tasks do not create the same exposure. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

10. D — A disconnect position or label can be wrong, defective, or associated with another circuit. Testing for absence of voltage verifies isolation; it does not automatically discharge stored energy or perform controller and mechanical checks. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function. Verify.

11. A — A single movement coordinator and closed-loop confirmation prevent conflicting commands and ensure everyone is clear. Uncoordinated operation, undefined signals, and continuous movement increase exposure to crushing and shearing hazards. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

12. C — Impact-rated eye protection and side shields intercept particles approaching from the front or side. Headwear, hearing protection, and gloves protect other body areas but do not substitute for eye protection. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

13. B — Overheated insulation can precede arcing, fire, or equipment failure. Safe shutdown and controlled investigation address the source; ventilation, repeated resets, and spraying can mask symptoms or introduce additional hazards. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

14. D — An open entrance requires a physical control capable of preventing access. Tape or informal markers may provide notice but can be crossed easily and do not protect distracted occupants or workers. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function. Verification prevents unsafe recurrence.

15. C — Rigging must be engineered around actual load characteristics and rated equipment. Crew size, route convenience, or paint markings do not establish capacity, stability, or suitability of lifting points. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

16. A — Clear working space reduces contact and arc exposure and preserves an exit path. Using that space for storage obstructs access and can add combustible material near energized equipment. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

17. A — The rescuer must avoid becoming part of the circuit. Removing power or using an approved nonconductive rescue method ends exposure before first aid; direct contact and water can create another casualty. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function. Verification prevents unsafe recurrence.

18. D — Clear paths and prompt spill control remove common causes of falls. Parts near equipment, crossing cords, and unattended absorbent material create new obstructions and can interfere with emergency access. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

19. C — A systematic restoration check catches missing guards, jumpers, tools, people, and improper modes. Full-speed operation or leaving inspection selected before confirming conditions can create unsafe movement or incomplete service. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

20. B — Guide rails constrain lateral position and provide surfaces for guiding and safety devices. Suspension members carry the load, the traveling cable supplies circuits, and ventilation is not the rail system's purpose. This distinction matters in hoistways work because diagnosis must follow the actual energy path and protective function. Verification prevents unsafe recurrence.

21. D — One-sided wear indicates uneven contact between the shoe and rail, commonly caused by alignment or adjustment issues. It is unrelated to oil temperature or a lamp circuit and is not evidence of balanced loading. This distinction matters in hoistways work because diagnosis must follow the actual energy path and protective function. Verify.

22. B — Interlocks prove the entrance is secured before normal operation, limiting exposure to an open shaft. Speed regulation, door support, and lighting are handled by different systems. This distinction matters in hoistways work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

23. A — Contact with fixed equipment can abrade the jacket, stress conductors, and create intermittent faults. A smooth loop and adequate clearance are desired conditions, while electrical continuity alone does not prove proper routing. This distinction matters in hoistways work because diagnosis must follow the actual energy path and protective function. Verification prevents recurrence.

24. C — The guard separates personnel from a moving mass and its pinch points. It does not alter rope traction, electrical interference, or hydraulic leakage. This distinction matters in hoistways work because diagnosis must follow the actual energy path and protective function. The rejected choices address another subsystem, rely on an unsafe shortcut, or confuse an observation with a verified cause.

25. A — Guide assemblies pass across every joint. Steps or offsets create impact and wear, whereas grounding, safety-gear performance, and rope stretch are addressed through other design and maintenance features. This distinction matters in hoistways work because diagnosis must follow the

actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

26. C — A floor-specific leveling error points to that landing's position target or sensing arrangement. Building voltage, counterweight mass, and machine lubricant would more likely affect multiple landings or overall operation. This distinction matters in hoistways work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

27. D — Pit water can energize equipment, corrode components, and conceal floor hazards. Source control and suitable removal equipment are required; car movement, unverified pumps, or visual clearance do not make the condition safe. This distinction matters in hoistways work because diagnosis must follow the actual energy path and protective function. Verification prevents recurrence.

28. B — Clearances accommodate normal motion and tolerances without contact. They do not increase rated speed, replace protective circuits, or permit unsafe entrance conditions. This distinction matters in hoistways work because diagnosis must follow the actual energy path and protective function. The rejected choices address another subsystem, rely on an unsafe shortcut, or confuse an observation with a verified cause.

29. C — A location-specific noise suggests physical contact at a fixed elevation. Inspection should compare stationary equipment and the car, cable, or counterweight as they pass; lobby devices and fire alarms do not fit that pattern. This distinction matters in hoistways work because diagnosis must follow the actual energy path and protective function. Verify.

30. A — Terminal devices supervise end-of-travel behavior and provide layers of stopping protection. Door locking, load weighing, and lubrication are separate functions. This distinction matters in hoistways work because diagnosis must follow the actual energy path and protective function. The rejected choices address another subsystem, rely on an unsafe shortcut, or confuse an observation with a verified cause.

31. B — Loose items can fall onto the car, machinery, or people and may jam moving components. They provide no legitimate speed, sound, or moisture-control function. This distinction matters in hoistways work because diagnosis must follow the actual energy path and protective function. The rejected choices address another subsystem, rely on an unsafe shortcut, or confuse an observation with a verified cause.

32. D — Fascia and toe guards close hazardous gaps near the entrance when the car is not perfectly level or during restricted movement. They do not affect motor cooling, rope traction, or ventilation. This distinction matters in hoistways work because diagnosis must follow the actual energy path and protective function. Verification prevents unsafe recurrence.

33. A — Effective intervals reflect duty, environment, observed wear, instructions, and mandatory requirements. A single calendar interval, building age, or callback count cannot represent every component's risk and deterioration rate. This distinction matters in general maintenance items work

because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

34. D — Consistent records allow comparison over time and help distinguish recurring faults from isolated events. Documentation supports, but does not replace, inspection, functional testing, or a compliance determination. This distinction matters in general maintenance items work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

35. B — Correct products and quantities protect surfaces without contamination or overheating. Mixing products, over-lubricating, or forcing lubricant into sealed assemblies can damage materials and attract debris. This distinction matters in general maintenance items work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

36. C — A fuse responds to abnormal current and should not be defeated or upsized without engineering authorization. Repetition indicates a fault, overload, or wrong rating that requires diagnosis at the source. This distinction matters in general maintenance items work because diagnosis must follow the actual energy path and protective function. Verification prevents recurrence.

37. B — Dirt and oil can conceal defects and distort observations. Cleaning improves inspection quality but does not tighten hardware, change software, or substitute for measurement. This distinction matters in general maintenance items work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

38. C — Roughness, looseness, heat, and abnormal noise indicate internal damage or advanced wear. Additional lubricant cannot restore failed rolling surfaces or proper clearances. This distinction matters in general maintenance items work because diagnosis must follow the actual energy path and protective function. The rejected choices address another subsystem, rely on an unsafe shortcut, or confuse an observation with a verified cause.

39. D — Elevator components operate as an integrated safety system. Incorrect geometry, ratings, or materials can change clearances and failure behavior; appearance and price do not establish equivalence. This distinction matters in general maintenance items work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

40. A — Recreating the original conditions tests whether the identified cause was actually removed. Multiple cycles improve confidence that the result is stable; clearing records or relying on temporary absence of symptoms is weak evidence. This distinction matters in general maintenance items work because diagnosis must follow the actual energy path and protective function.

41. C — A jumper can defeat protective logic and must not remain as an undocumented alteration. Restoring the designed circuit and testing it confirms that the safety function operates as intended. This

distinction matters in general maintenance items work because diagnosis must follow the actual energy path and protective function. Verification prevents unsafe recurrence.

42. B — The valve meters and routes fluid between the pump, cylinder, and tank to shape car motion. Electrical storage, suspension, and door locking belong to other systems. This distinction matters in hydraulic elevators work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

43. D — Entrained air makes oil compressible, producing noise, erratic motion, and poor leveling. It is unrelated to traction and door equipment and should not be treated as normal expansion. This distinction matters in hydraulic elevators work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

44. A — Settling indicates hydraulic pressure is escaping or being bypassed. The valve, jack, and piping form the load-supporting hydraulic circuit; lamps, counterweights, and escalator parts do not. This distinction matters in hydraulic elevators work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

45. B — Oil viscosity varies with temperature, changing flow and internal leakage. These effects influence motion and component life, not ropes, entrance locks, or enclosure strength. This distinction matters in hydraulic elevators work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

46. D — A major line failure can release the pressure supporting the car. The protective valve detects excessive flow or motion and restricts descent; it is not a performance booster or electrical bypass. This distinction matters in hydraulic elevators work because diagnosis must follow the actual energy path and protective function. Verification prevents recurrence.

47. C — Hydraulic pressure stores substantial energy and can inject fluid or move the car. Isolation, support, and controlled pressure relief remove the hazard before a fitting is disturbed. This distinction matters in hydraulic elevators work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

48. A — Cavitation forms and collapses vapor cavities at the pump inlet, producing noise, erosion, and reduced delivery. Electrical lighting and guide wear are unrelated indicators. This distinction matters in hydraulic elevators work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

49. D — Particles can score surfaces, stick valve elements, and accelerate seal wear. Clean oil supports reliable control but does not change capacity, eliminate testing, or hold temperature constant. This distinction matters in hydraulic elevators work because diagnosis must follow the actual energy path and

protective function. The technician should confirm the condition by an approved procedure before restoring service.

50. C — The safety circuit places critical contacts and logic in the permission path for movement. If a required condition is not proven, normal operation is inhibited; lighting, torque boosting, and data storage are separate functions. This distinction matters in controls work because diagnosis must follow the actual energy path and protective function. Verify.

51. A — An energized coil should create magnetic force and move the armature. Failure to transfer points to a mechanical or internal relay problem, not unrelated hydraulic or handrail systems. This distinction matters in controls work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

52. B — A circuit operates only when its entire path and required conditions are complete. Systematic tracing localizes opens, incorrect states, and voltage drops without random part replacement. This distinction matters in controls work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

53. A — An input indicator reflects electrical or logical recognition, which helps separate field-device, wiring, and software issues. It cannot directly measure mechanical wear, lubricant condition, or structural strength. This distinction matters in controls work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

54. D — Coil and contact ratings determine electromagnetic operation, heating, insulation stress, and interrupting capability. Substitution without matching the application can create unreliable control or a fire hazard. This distinction matters in controls work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

55. C — Fault chronology provides diagnostic context that may disappear after reset. It guides inspection but does not prove component condition or replace testing. This distinction matters in controls work because diagnosis must follow the actual energy path and protective function. The rejected choices address another subsystem, rely on an unsafe shortcut, or confuse an observation with a verified cause.

56. B — The field device appears to respond, so the signal path to the controller becomes the next diagnostic boundary. Connections, supply references, and the input module can interrupt recognition. This distinction matters in controls work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

57. B — The drive sheave transmits torque through friction to the suspension members, moving car and counterweight in opposite directions. Hydraulic, rack, and pneumatic mechanisms describe other arrangements. This distinction matters in electric/traction elevators work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

58. A — Unequal tension overloads individual ropes and alters groove loading, accelerating wear and reducing traction consistency. It does not replace guidance, set speed, or control entrances. This distinction matters in electric/traction elevators work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

59. C — The drive controls motion and deceleration, while the brake applies to hold the stopped system and serves protective functions. It is not the propulsion, guidance, or door power source. This distinction matters in electric/traction elevators work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

60. D — Groove geometry controls rope support and contact. Wear changes pressure distribution and effective diameters, affecting traction and rope condition; hydraulic and electrical components are unrelated. This distinction matters in electric/traction elevators work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

61. A — Motor losses become heat that must be removed. Blocked passages elevate temperature and accelerate insulation aging; ventilation does not affect rope strength, leveling geometry, or locks. This distinction matters in electric/traction elevators work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

62. D — Counterbalancing reduces the net load the traction machine must accelerate and lift, improving efficiency and component sizing. It does not operate doors, create hydraulic pressure, or power communications. This distinction matters in electric/traction elevators work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

63. C — A speed-related repeating vibration points to rotating components and their interfaces. Inspecting the sheave, bearings, ropes, and alignment follows the symptom's frequency; unrelated signaling and other equipment do not. This distinction matters in electric/traction elevators work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

64. B — Modernization succeeds when actual conditions and interfaces are documented before design and staging. Appearance, minimal purchasing, and unverified assumptions do not control fit, safety, or coordination risks. This distinction matters in job site assessment work because diagnosis must follow

the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

65. C — Existing installations often depart from original plans. Field verification catches changes and tolerances before fabrication, reducing rework and unsafe interference. This distinction matters in job site assessment work because diagnosis must follow the actual energy path and protective function. The rejected choices address another subsystem, rely on an unsafe shortcut, or confuse an observation with a verified cause.

66. B — The enforcing authority determines the local regulatory path and acceptance process. Early identification prevents missed approvals and incompatible assumptions; it does not govern music, engineering competence, or payroll. This distinction matters in job site assessment work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

67. A — Large and heavy elevator components require a verified route and adequate structural capacity. Decorative details do not determine whether equipment can be delivered and moved safely. This distinction matters in job site assessment work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

68. D — Elevator work can affect people beyond the immediate shaft. Planning controls exposure and maintains required access and egress; occupancy never authorizes unsafe operation or changes component ratings. This distinction matters in job site assessment work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

69. B — Objective documentation preserves baseline condition, supports engineering decisions, and prevents later disputes. Informal or delayed records lack the detail needed to evaluate causes and scope. This distinction matters in job site assessment work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

70. C — Diameter loss indicates material wear and reduced section, which tension adjustment cannot restore. Removal criteria consider measurable condition and must guide replacement. This distinction matters in maintenance on electric/traction elevator items work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

71. A — The brake depends on predictable friction. Contamination can cause slip, increased stopping distance, and unreliable holding; electrical resistance, spring strength, and rope grooves are separate matters. This distinction matters in maintenance on electric/traction elevator items work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

72. D — Dust can be generated by abnormal rope or groove wear. Inspection should determine the material and cause before cleaning or adjustment; unrelated speed and door changes could worsen the condition. This distinction matters in maintenance on electric/traction elevator items work because diagnosis must follow the actual energy path and protective function. Verify.

73. B — Brake parts must move freely through the designed stroke. Dirt, corrosion, or misalignment can prevent full application or release, creating drag or inadequate holding. This distinction matters in maintenance on electric/traction elevator items work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

74. A — Adjustment changes a safety-critical mechanical system. Prescribed functional tests confirm release, stopping, and holding behavior; appearance and unrelated door or clock actions cannot verify performance. This distinction matters in maintenance on electric/traction elevator items work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

75. D — A temperature-dependent symptom points to changes in fluid behavior or internal leakage. Comparing cold and warm operating data helps isolate the hydraulic cause. This distinction matters in maintenance on hydraulic elevator items work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

76. C — Persistent leakage is evidence of a seal or surface problem and creates housekeeping and environmental hazards. It should be diagnosed rather than treated as beneficial lubrication. This distinction matters in maintenance on hydraulic elevator items work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

77. C — The relief valve protects the pressure system from abnormal overpressure. Testing must follow prescribed procedures because arbitrary adjustment can damage equipment or compromise performance. This distinction matters in maintenance on hydraulic elevator items work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

78. B — Color and odor changes can indicate overheating, oxidation, or contamination. Oil condition should be assessed with temperature, operating history, and manufacturer guidance rather than assumed normal. This distinction matters in maintenance on hydraulic elevator items work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

79. D — A replacement hose must withstand system pressure and movement without abrasion, kinking, or leakage. Controlled testing confirms installation integrity; appearance and bypassing protection are unsafe substitutes. This distinction matters in maintenance on hydraulic elevator items work because

diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

80. A — Special equipment can use different drives, controls, and safety devices. Correct identification prevents applying procedures or assumptions from an incompatible system. This distinction matters in special application elevators or other elevators with driving machines work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

81. C — Manufacturer information explains the specific design and service sequence, while codes and competent work still apply. It supports, rather than replaces, regulatory and professional requirements. This distinction matters in special application elevators or other elevators with driving machines work because diagnosis must follow the actual energy path and protective function. Verify first.

82. D — Manual movement can release stored load or bypass normal controls. Following the approved method and controlling access prevent unexpected travel and entrapment. This distinction matters in special application elevators or other elevators with driving machines work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

83. B — The drive transmits load through meshing teeth, so damage, poor alignment, or inadequate lubrication directly affects motion and reliability. Other drive-system checks do not apply. This distinction matters in special application elevators or other elevators with driving machines work because diagnosis must follow the actual energy path and protective function. Verify first.

84. A — A generic rescue action can move equipment unexpectedly or expose passengers to a shaft. Procedures must reflect the actual design, conditions, and authorized steps. This distinction matters in special application elevators or other elevators with driving machines work because diagnosis must follow the actual energy path and protective function. Verification prevents recurrence.

85. B — The device reduces closing impact and entrapment risk by responding to a person or object in the doorway. It does not measure or control unrelated machine systems. This distinction matters in car enclosures work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

86. A — Escape openings are for controlled emergency use by authorized personnel. Secure fastening prevents casual access to a hazardous area while preserving the intended rescue function. This distinction matters in car enclosures work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

87. D — Enclosure components experience vibration and passenger contact. Loose hardware can create injury and interference hazards even when propulsion remains normal. This distinction matters in car enclosures work because diagnosis must follow the actual energy path and protective function. The

rejected choices address another subsystem, rely on an unsafe shortcut, or confuse an observation with a verified cause.

88. C — Interior alterations can affect fire performance, car weight, clearances, and structural attachment. Decorative preference and cost do not establish technical suitability. This distinction matters in car enclosures work because diagnosis must follow the actual energy path and protective function. The rejected choices address another subsystem, rely on an unsafe shortcut, or confuse an observation with a verified cause.

89. A — Multiple communication modes help passengers with different sensory abilities use the elevator independently. Indicators convey information and do not operate propulsion or mechanical components. This distinction matters in accessibility devices work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

90. B — Location and operating force directly affect usability. Correct installation supports independent access, while drive and pressure systems are unrelated. This distinction matters in accessibility devices work because diagnosis must follow the actual energy path and protective function. The rejected choices address another subsystem, rely on an unsafe shortcut, or confuse an observation with a verified cause.

91. D — Tactile identification communicates control function to users who cannot rely on print. It must remain legible, securely attached, and correctly paired with its control. This distinction matters in accessibility devices work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

92. C — The comb teeth mesh with step cleats at the landing transition. Correct engagement helps prevent objects from entering the machinery space. This distinction matters in escalators & moving walks work because diagnosis must follow the actual energy path and protective function. The rejected choices address another subsystem, rely on an unsafe shortcut, or confuse an observation with a verified cause.

93. D — Passengers expect the handrail to move with the steps. A significant difference can pull the upper body forward or backward and indicates a drive or tension issue. This distinction matters in escalators & moving walks work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

94. A — Visible step boundaries help riders place their feet away from edges and recognize the moving geometry. Damage reduces that safety cue and should be corrected. This distinction matters in escalators & moving walks work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

95. C — A dumbwaiter carrier and safeguards are intended for material, not human occupancy. Riding exposes a person to crushing, falls, and inadequate space or protection. This distinction matters in dumbwaiters & material lifts work because diagnosis must follow the actual energy path and protective

function. The technician should confirm the condition by an approved procedure before restoring service.

96. B — Rated capacity and distribution protect structural and drive components and help keep the carrier stable. Added load does not improve safety and can shift during motion. This distinction matters in dumbwaiters & material lifts work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

97. B — A pattern across adjacent steps suggests a shared guidance or chain problem rather than isolated cosmetic damage. Inspection follows the load path through tracks, rollers, and clearances. This distinction matters in maintenance on escalators (interior & exterior) work because diagnosis must follow the actual energy path and protective function. Verification prevents recurrence.

98. C — Comb geometry and its protective switch address entrapment at the landing. Functional testing confirms that obstruction or displacement produces the intended stop response. This distinction matters in maintenance on escalators (interior & exterior) work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

99. A — Proprietary drives may contain unique load paths, limits, and stored-energy hazards. Design-specific information and parts preserve intended protective functions. This distinction matters in maintenance on special application elevators or other elevators with driving machines work because diagnosis must follow the actual energy path and protective function. The technician should confirm the condition by an approved procedure before restoring service.

100. D — Emergency systems can deteriorate while unused. Periodic controlled testing reveals battery, valve, brake, or control failures before an actual entrapment or outage. This distinction matters in maintenance on special application elevators or other elevators with driving machines work because diagnosis must follow the actual energy path and protective function. Verification prevents recurrence.

101. C — The proposal is not an acceptable substitute for the required control. Lockout/tagout controls hazardous energy at its source. A stop switch is an operational control, not complete energy isolation, while cones and observers do not prevent unintended energization. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function.

102. B — The proposal is not an acceptable substitute for the required control. Exposed conductors create shock, arc, and fire hazards. Removing the cord from service prevents continued exposure; temporary tape and reduced loading do not restore the cord's listed insulation or mechanical protection. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function.

103. D — The proposal is not an acceptable substitute for the required control. Proper setup and three-point contact reduce tipping and fall risk. Top-cap standing, leaning a closed stepladder, and improvised

blocking defeat the ladder's intended geometry and safe-use instructions. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function.

104. A — The proposal is not an acceptable substitute for the required control. Hot-work planning controls sparks, slag, heat transfer, and delayed ignition. A limited wet area, closed doors, or sprinklers alone cannot address concealed combustibles or a fire that begins after welding stops. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function.

105. B — The proposal is not an acceptable substitute for the required control. Unknown liquids can create chemical, electrical, and slip hazards. Identification and the site spill procedure determine suitable protection and cleanup; dilution or covering may spread the material or conceal the hazard. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function.

106. C — The proposal is not an acceptable substitute for the required control. A suitable measurement category, voltage rating, range, and intact leads protect against transient energy and insulation failure. A lit display or convenient lead length does not establish electrical safety; resistance mode on an energized circuit can damage the meter. Verify first.

107. A — The proposal is not an acceptable substitute for the required control. Secured storage prevents tools from falling into the hoistway or contacting moving equipment. An inventory before movement also prevents forgotten objects from striking structures, damaging equipment, or endangering people below. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function.

108. D — The proposal is not an acceptable substitute for the required control. The guard is an engineered barrier against moving parts. Until it is restored, warning signs, reduced speed, and observation do not provide equivalent protection from entanglement, crushing, or unexpected component failure. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function.

109. D — The proposal is not an acceptable substitute for the required control. An open hoistway presents a potentially fatal fall hazard and requires barriers, restraint, arrest, or another approved control. Closed entrances and ground-level tasks do not create the same exposure. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function.

110. C — The proposal is not an acceptable substitute for the required control. A disconnect position or label can be wrong, defective, or associated with another circuit. Testing for absence of voltage verifies isolation; it does not automatically discharge stored energy or perform controller and mechanical checks. The technician should confirm the condition by an approved procedure before restoring service.

111. B — The proposal is not an acceptable substitute for the required control. A single movement coordinator and closed-loop confirmation prevent conflicting commands and ensure everyone is clear. Uncoordinated operation, undefined signals, and continuous movement increase exposure to crushing

and shearing hazards. This distinction matters in safety work because diagnosis must follow the actual energy path and protective function.

112. A — The proposal is not an acceptable substitute for the required control. Guide rails constrain lateral position and provide surfaces for guiding and safety devices. Suspension members carry the load, the traveling cable supplies circuits, and ventilation is not the rail system's purpose. This distinction matters in hoistways work because diagnosis must follow the actual energy path and protective function.

113. D — The proposal is not an acceptable substitute for the required control. One-sided wear indicates uneven contact between the shoe and rail, commonly caused by alignment or adjustment issues. It is unrelated to oil temperature or a lamp circuit and is not evidence of balanced loading. The technician should confirm the condition by an approved procedure before restoring service.

114. B — The proposal is not an acceptable substitute for the required control. Interlocks prove the entrance is secured before normal operation, limiting exposure to an open shaft. Speed regulation, door support, and lighting are handled by different systems. This distinction matters in hoistways work because diagnosis must follow the actual energy path and protective function.

115. A — The proposal is not an acceptable substitute for the required control. Contact with fixed equipment can abrade the jacket, stress conductors, and create intermittent faults. A smooth loop and adequate clearance are desired conditions, while electrical continuity alone does not prove proper routing. This distinction matters in hoistways work because diagnosis must follow the actual energy path and protective function.

116. C — The proposal is not an acceptable substitute for the required control. The guard separates personnel from a moving mass and its pinch points. It does not alter rope traction, electrical interference, or hydraulic leakage. This distinction matters in hoistways work because diagnosis must follow the actual energy path and protective function. Verify.

117. D — The proposal is not an acceptable substitute for the required control. Guide assemblies pass across every joint. Steps or offsets create impact and wear, whereas grounding, safety-gear performance, and rope stretch are addressed through other design and maintenance features. This distinction matters in hoistways work because diagnosis must follow the actual energy path and protective function.

118. A — The proposal is not an acceptable substitute for the required control. A floor-specific leveling error points to that landing's position target or sensing arrangement. Building voltage, counterweight mass, and machine lubricant would more likely affect multiple landings or overall operation. This distinction matters in hoistways work because diagnosis must follow the actual energy path and protective function.

119. C — The proposal is not an acceptable substitute for the required control. Effective intervals reflect duty, environment, observed wear, instructions, and mandatory requirements. A single calendar interval, building age, or callback count cannot represent every component's risk and deterioration rate. This distinction matters in general maintenance items work because diagnosis must follow the actual energy path and protective function.

120. B — The proposal is not an acceptable substitute for the required control. Consistent records allow comparison over time and help distinguish recurring faults from isolated events. Documentation supports, but does not replace, inspection, functional testing, or a compliance determination. This distinction matters in general maintenance items work because diagnosis must follow the actual energy path and protective function.

121. A — The proposal is not an acceptable substitute for the required control. Correct products and quantities protect surfaces without contamination or overheating. Mixing products, over-lubricating, or forcing lubricant into sealed assemblies can damage materials and attract debris. This distinction matters in general maintenance items work because diagnosis must follow the actual energy path and protective function.

122. B — The proposal is not an acceptable substitute for the required control. A fuse responds to abnormal current and should not be defeated or upsized without engineering authorization. Repetition indicates a fault, overload, or wrong rating that requires diagnosis at the source. This distinction matters in general maintenance items work because diagnosis must follow the actual energy path and protective function.

123. D — The proposal is not an acceptable substitute for the required control. Dirt and oil can conceal defects and distort observations. Cleaning improves inspection quality but does not tighten hardware, change software, or substitute for measurement. This distinction matters in general maintenance items work because diagnosis must follow the actual energy path and protective function.

124. C — The proposal is not an acceptable substitute for the required control. Roughness, looseness, heat, and abnormal noise indicate internal damage or advanced wear. Additional lubricant cannot restore failed rolling surfaces or proper clearances. This distinction matters in general maintenance items work because diagnosis must follow the actual energy path and protective function.

125. C — The proposal is not an acceptable substitute for the required control. The valve meters and routes fluid between the pump, cylinder, and tank to shape car motion. Electrical storage, suspension, and door locking belong to other systems. This distinction matters in hydraulic elevators work because diagnosis must follow the actual energy path and protective function.

126. D — The proposal is not an acceptable substitute for the required control. Entrained air makes oil compressible, producing noise, erratic motion, and poor leveling. It is unrelated to traction and door equipment and should not be treated as normal expansion. This distinction matters in hydraulic elevators work because diagnosis must follow the actual energy path and protective function.

127. B — The proposal is not an acceptable substitute for the required control. Settling indicates hydraulic pressure is escaping or being bypassed. The valve, jack, and piping form the load-supporting hydraulic circuit; lamps, counterweights, and escalator parts do not. This distinction matters in hydraulic elevators work because diagnosis must follow the actual energy path and protective function.

128. A — The proposal is not an acceptable substitute for the required control. Oil viscosity varies with temperature, changing flow and internal leakage. These effects influence motion and component life, not

ropes, entrance locks, or enclosure strength. This distinction matters in hydraulic elevators work because diagnosis must follow the actual energy path and protective function.

129. B — The proposal is not an acceptable substitute for the required control. A major line failure can release the pressure supporting the car. The protective valve detects excessive flow or motion and restricts descent; it is not a performance booster or electrical bypass. This distinction matters in hydraulic elevators work because diagnosis must follow the actual energy path and protective function.

130. D — The proposal is not an acceptable substitute for the required control. The safety circuit places critical contacts and logic in the permission path for movement. If a required condition is not proven, normal operation is inhibited; lighting, torque boosting, and data storage are separate functions. The technician should confirm the condition by an approved procedure before restoring service.

131. C — The proposal is not an acceptable substitute for the required control. An energized coil should create magnetic force and move the armature. Failure to transfer points to a mechanical or internal relay problem, not unrelated hydraulic or handrail systems. This distinction matters in controls work because diagnosis must follow the actual energy path and protective function.

132. A — The proposal is not an acceptable substitute for the required control. A circuit operates only when its entire path and required conditions are complete. Systematic tracing localizes opens, incorrect states, and voltage drops without random part replacement. This distinction matters in controls work because diagnosis must follow the actual energy path and protective function.

133. C — The proposal is not an acceptable substitute for the required control. An input indicator reflects electrical or logical recognition, which helps separate field-device, wiring, and software issues. It cannot directly measure mechanical wear, lubricant condition, or structural strength. This distinction matters in controls work because diagnosis must follow the actual energy path and protective function.

134. A — The proposal is not an acceptable substitute for the required control. Coil and contact ratings determine electromagnetic operation, heating, insulation stress, and interrupting capability. Substitution without matching the application can create unreliable control or a fire hazard. This distinction matters in controls work because diagnosis must follow the actual energy path and protective function.

135. D — The proposal is not an acceptable substitute for the required control. The drive sheave transmits torque through friction to the suspension members, moving car and counterweight in opposite directions. Hydraulic, rack, and pneumatic mechanisms describe other arrangements. This distinction matters in electric/traction elevators work because diagnosis must follow the actual energy path and protective function.

136. B — The proposal is not an acceptable substitute for the required control. Unequal tension overloads individual ropes and alters groove loading, accelerating wear and reducing traction consistency. It does not replace guidance, set speed, or control entrances. This distinction matters in electric/traction elevators work because diagnosis must follow the actual energy path and protective function.

137. D — The proposal is not an acceptable substitute for the required control. The drive controls motion and deceleration, while the brake applies to hold the stopped system and serves protective functions. It is not the propulsion, guidance, or door power source. This distinction matters in electric/traction elevators work because diagnosis must follow the actual energy path and protective function.

138. B — The proposal is not an acceptable substitute for the required control. Modernization succeeds when actual conditions and interfaces are documented before design and staging. Appearance, minimal purchasing, and unverified assumptions do not control fit, safety, or coordination risks. This distinction matters in job site assessment work because diagnosis must follow the actual energy path and protective function.

139. C — The proposal is not an acceptable substitute for the required control. Existing installations often depart from original plans. Field verification catches changes and tolerances before fabrication, reducing rework and unsafe interference. This distinction matters in job site assessment work because diagnosis must follow the actual energy path and protective function. Verify first.

140. A — The proposal is not an acceptable substitute for the required control. The enforcing authority determines the local regulatory path and acceptance process. Early identification prevents missed approvals and incompatible assumptions; it does not govern music, engineering competence, or payroll. This distinction matters in job site assessment work because diagnosis must follow the actual energy path and protective function.

141. D — The proposal is not an acceptable substitute for the required control. Diameter loss indicates material wear and reduced section, which tension adjustment cannot restore. Removal criteria consider measurable condition and must guide replacement. This distinction matters in maintenance on electric/traction elevator items work because diagnosis must follow the actual energy path and protective function.

142. B — The proposal is not an acceptable substitute for the required control. The brake depends on predictable friction. Contamination can cause slip, increased stopping distance, and unreliable holding; electrical resistance, spring strength, and rope grooves are separate matters. This distinction matters in maintenance on electric/traction elevator items work because diagnosis must follow the actual energy path and protective function.

143. A — The proposal is not an acceptable substitute for the required control. Dust can be generated by abnormal rope or groove wear. Inspection should determine the material and cause before cleaning or adjustment; unrelated speed and door changes could worsen the condition. The rejected choices address another subsystem, rely on an unsafe shortcut, or confuse an observation with a verified cause.

144. C — The proposal is not an acceptable substitute for the required control. Brake parts must move freely through the designed stroke. Dirt, corrosion, or misalignment can prevent full application or release, creating drag or inadequate holding. This distinction matters in maintenance on electric/traction elevator items work because diagnosis must follow the actual energy path and protective function.

145. A — The proposal is not an acceptable substitute for the required control. Special equipment can use different drives, controls, and safety devices. Correct identification prevents applying procedures or assumptions from an incompatible system. This distinction matters in special application elevators or other elevators with driving machines work because diagnosis must follow the actual energy path and protective function.

146. B — The proposal is not an acceptable substitute for the required control. Manufacturer information explains the specific design and service sequence, while codes and competent work still apply. It supports, rather than replaces, regulatory and professional requirements. The rejected choices address another subsystem, rely on an unsafe shortcut, or confuse an observation with a verified cause.

147. D — The proposal is not an acceptable substitute for the required control. Manual movement can release stored load or bypass normal controls. Following the approved method and controlling access prevent unexpected travel and entrapment. This distinction matters in special application elevators or other elevators with driving machines work because diagnosis must follow the actual energy path and protective function.

148. C — The proposal is not an acceptable substitute for the required control. The drive transmits load through meshing teeth, so damage, poor alignment, or inadequate lubrication directly affects motion and reliability. Other drive-system checks do not apply. The rejected choices address another subsystem, rely on an unsafe shortcut, or confuse an observation with a verified cause.

149. B — The proposal is not an acceptable substitute for the required control. A temperature-dependent symptom points to changes in fluid behavior or internal leakage. Comparing cold and warm operating data helps isolate the hydraulic cause. This distinction matters in maintenance on hydraulic elevator items work because diagnosis must follow the actual energy path and protective function.

150. D — The proposal is not an acceptable substitute for the required control. Persistent leakage is evidence of a seal or surface problem and creates housekeeping and environmental hazards. It should be diagnosed rather than treated as beneficial lubrication. This distinction matters in maintenance on hydraulic elevator items work because diagnosis must follow the actual energy path and protective function.

151. C — The proposal is not an acceptable substitute for the required control. The device reduces closing impact and entrapment risk by responding to a person or object in the doorway. It does not measure or control unrelated machine systems. This distinction matters in car enclosures work because diagnosis must follow the actual energy path and protective function.

152. A — The proposal is not an acceptable substitute for the required control. Escape openings are for controlled emergency use by authorized personnel. Secure fastening prevents casual access to a hazardous area while preserving the intended rescue function. This distinction matters in car enclosures work because diagnosis must follow the actual energy path and protective function.

153. D — The proposal is not an acceptable substitute for the required control. Multiple communication modes help passengers with different sensory abilities use the elevator independently. Indicators convey

information and do not operate propulsion or mechanical components. This distinction matters in accessibility devices work because diagnosis must follow the actual energy path and protective function.

154. C — The proposal is not an acceptable substitute for the required control. Location and operating force directly affect usability. Correct installation supports independent access, while drive and pressure systems are unrelated. This distinction matters in accessibility devices work because diagnosis must follow the actual energy path and protective function. Verification prevents unsafe recurrence.

155. B — The proposal is not an acceptable substitute for the required control. The comb teeth mesh with step cleats at the landing transition. Correct engagement helps prevent objects from entering the machinery space. This distinction matters in escalators & moving walks work because diagnosis must follow the actual energy path and protective function.

156. A — The proposal is not an acceptable substitute for the required control. Passengers expect the handrail to move with the steps. A significant difference can pull the upper body forward or backward and indicates a drive or tension issue. This distinction matters in escalators & moving walks work because diagnosis must follow the actual energy path and protective function.

157. D — The proposal is not an acceptable substitute for the required control. A pattern across adjacent steps suggests a shared guidance or chain problem rather than isolated cosmetic damage. Inspection follows the load path through tracks, rollers, and clearances. This distinction matters in maintenance on escalators (interior & exterior) work because diagnosis must follow the actual energy path and protective function.

158. C — The proposal is not an acceptable substitute for the required control. Comb geometry and its protective switch address entrapment at the landing. Functional testing confirms that obstruction or displacement produces the intended stop response. This distinction matters in maintenance on escalators (interior & exterior) work because diagnosis must follow the actual energy path and protective function.

159. A — The proposal is not an acceptable substitute for the required control. A dumbwaiter carrier and safeguards are intended for material, not human occupancy. Riding exposes a person to crushing, falls, and inadequate space or protection. This distinction matters in dumbwaiters & material lifts work because diagnosis must follow the actual energy path and protective function.

160. B — The proposal is not an acceptable substitute for the required control. Proprietary drives may contain unique load paths, limits, and stored-energy hazards. Design-specific information and parts preserve intended protective functions. This distinction matters in maintenance on special application elevators or other elevators with driving machines work because diagnosis must follow the actual energy path and protective function.