TSSA Elevating Devices Mechanic – Class F (EDM-F) License Practice Exam (Sample)

Study Guide

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Questions

1. What is the significance of a car runby measurement in elevators?

A. It determines the speed of the elevator

B. It assesses the alignment of the elevator cab

C. It indicates the weight capacity

D. It refers to the fuel efficiency

2. What is the function of an MG set?

A. To provide hydraulic power

B. To supply AC power to lights

C. To supply DC power to a hoisting motor

D. To manage elevator traffic

3. What is one of the primary functions of the health and safety committee?

A. Enforce company policies

B. Provide legal counsel

C. Investigate incidents

D. Develop new regulations

4. Where must the safety latch be installed on a hand powered counterbalanced manlift?

A. At the upper terminal landing

B. At the lower terminal landing

C. In the control panel

D. On the weight box

5. How is an increase in car enclosure illumination classified?

A. As a major alteration

B. As a minor alteration Type A

C. As a minor alteration Type B

D. Not identified as an alteration

6. Which components' flame ratings should not be diminished when replacing car enclosure materials?

- **A. Only the walls**
- **B. Only the ceiling**
- **C. Only the floor**
- **D. All of the above**

7. Which section of the regulatory code covers loading and capacity requirements for rack and pinion elevators?

- **A. 2.12**
- **B. 2.14**
- **C. 2.16**
- **D. 2.18**

8. What is the purpose of the stop ring on a hydraulic plunger?

- **A. To enhance the efficiency of the lift**
- **B. To maintain a constant pressure**
- **C. To prevent the plunger from traveling beyond limits of the cylinder**
- **D. To indicate the position of the plunger**

9. What type of alteration is the addition of a car top emergency exit?

- **A. Major alteration**
- **B. Minor alteration Type A**
- **C. Minor alteration Type B**
- **D. No alteration**

10. According to the Occupational Health and Safety Act, who holds responsibility for health and safety?

- **A. Employers only**
- **B. Workers only**
- **C. Workers and employers**
- **D. Health and safety officers**

Answers

1. B
2. C
3. C
4. B
5. D
6. D
7. C
8. C
9. C
10. C

Explanations

1. What is the significance of a car runby measurement in elevators?

A. It determines the speed of the elevator

B. It assesses the alignment of the elevator cab

C. It indicates the weight capacity

D. It refers to the fuel efficiency

A car runby measurement is significant because it assesses the alignment of the elevator cab relative to the hoistway and landing. This measurement helps to ensure that the elevator cab is properly positioned so that it aligns correctly with the landing doors. Misalignment can lead to operational issues, such as difficulties in opening the doors, increased wear and tear, and potential safety hazards for passengers. Proper runby measurements contribute to smooth and safe operation, minimizing the likelihood of accidents or malfunctions. The other options do not pertain to the specific role of a car runby measurement. Evaluating speed, weight capacity, or fuel efficiency does not relate to the alignment of the cab within the hoistway. Thus, the focus on alignment is what makes option B the correct choice.

2. What is the function of an MG set?

A. To provide hydraulic power

B. To supply AC power to lights

C. To supply DC power to a hoisting motor

D. To manage elevator traffic

An MG set, or motor-generator set, primarily serves to convert AC power into DC power. In the context of elevator systems, it is especially important for supplying the necessary DC power to a hoisting motor that operates the elevator. The MG set plays a crucial role in ensuring that the hoisting machinery receives a stable and efficient form of power, which is essential for the smooth functioning and control of the elevator's ascent and descent. This set typically consists of an AC motor coupled with a DC generator. The AC motor runs on the building's supply voltage and produces the AC power, which the generator then transforms into the required DC power. This process provides the hoisting motor with the energy it needs, enabling precise control of elevator movements. In contrast, other options focus on different functions or power needs. For instance, while hydraulic power is vital in certain elevator systems, it isn't the primary role of an MG set. Similarly, while MG sets generate power, their main application within an elevator context does not pertain to lights or managing elevator traffic, which are tasks performed by different systems within the elevator infrastructure.

3. What is one of the primary functions of the health and safety committee?

A. Enforce company policies

B. Provide legal counsel

C. Investigate incidents

D. Develop new regulations

One of the primary functions of the health and safety committee is to investigate incidents. This responsibility is crucial as it helps identify the causes of workplace accidents or near-misses. By thoroughly examining incidents, the committee can gather insights and data that can inform preventive measures and safety protocols. This proactive approach not only aids in protecting employees but also helps create a safer work environment by preventing similar occurrences in the future. The committee's investigation typically includes gathering information, interviewing witnesses, and reviewing safety practices related to the incident. The outcome of these investigations can lead to recommendations for changes in procedures or equipment that enhance safety and compliance within the organization.

4. Where must the safety latch be installed on a hand powered counterbalanced manlift?

A. At the upper terminal landing

B. At the lower terminal landing

C. In the control panel

D. On the weight box

The correct placement of the safety latch on a hand-powered counterbalanced manlift is at the lower terminal landing. This positioning serves a crucial safety function by ensuring that the platform or lift is securely held in place at the ground level when not in operation or when being accessed by personnel. Installing the safety latch at the lower terminal means it can effectively prevent accidental movement of the manlift while workers are entering or exiting the platform, thereby reducing the risk of falls or injuries during operation. Properly locating the safety latch helps maintain stability in the lift mechanism and ensures that it can only be operated when it is safe to do so. While the other options may seem relevant, they do not address the primary safety concern of preventing unauthorized or accidental movement at the starting point of the lift operation, where workers are most at risk.

5. How is an increase in car enclosure illumination classified?

A. As a major alteration

B. As a minor alteration Type A

C. As a minor alteration Type B

D. Not identified as an alteration

An increase in car enclosure illumination is classified as "not identified as an alteration" because it typically does not significantly change the operational characteristics or safety features of the elevating device. The upgrades made for additional lighting are generally viewed as maintenance or enhancement of the existing system rather than a change that would affect the fundamental design or function. Changes classified as major or minor alterations usually involve modifications that could impact the safety, load capacity, or operation of the device. In contrast, simply enhancing the lighting within the car enclosure does not fall into the category of alterations that would require additional regulatory scrutiny or an official change in the device's status. This classification helps ensure that minor improvements do not complicate compliance processes unnecessarily.

6. Which components' flame ratings should not be diminished when replacing car enclosure materials?

A. Only the walls

B. Only the ceiling

C. Only the floor

D. All of the above

The flame ratings of all components of a car enclosure—walls, ceiling, and floor—should be maintained when replacing materials. This is crucial because every element of the car enclosure plays a significant role in fire safety and the overall integrity of the elevating device. The walls, ceiling, and floor serve to contain and direct any potential fire, preventing it from spreading to other areas and protecting the passengers and equipment inside. If any one of these components had a lower flame rating, it could compromise the fire resistance of the entire car enclosure, increasing the risk during a fire incident. By ensuring that all components retain their appropriate flame ratings during replacement, safety standards are upheld, and the structure's ability to withstand fire is optimized. This holistic approach to fire safety is essential in any design or maintenance involving elevating devices.

7. Which section of the regulatory code covers loading and capacity requirements for rack and pinion elevators?

A. 2.12

B. 2.14

C. 2.16

D. 2.18

The correct answer is based on the specific content found in regulatory codes concerning loading and capacity requirements for rack and pinion elevators. Section 2.16 provides detailed guidelines on the loading capacities that must be adhered to when operating such elevators. This section delineates the necessary calculations, safety factors, and loading assessments that are essential to ensure the safe and efficient use of rack and pinion systems. Understanding the loading and capacity requirements outlined in this section is crucial for elevator mechanics, as it ensures compliance with safety standards and helps prevent accidents related to overloading. Familiarity with these requirements also aids mechanics in performing proper maintenance and inspections to uphold operational integrity and reliability. The other sections do not specifically address the loading and capacity requirements for rack and pinion elevators, which is why they are not applicable when seeking regulations specifically covering this aspect of elevator operation.

8. What is the purpose of the stop ring on a hydraulic plunger?

A. To enhance the efficiency of the lift

B. To maintain a constant pressure

C. To prevent the plunger from traveling beyond limits of the cylinder

D. To indicate the position of the plunger

The stop ring on a hydraulic plunger plays a crucial role in ensuring the safety and functionality of the lifting mechanism. Its primary purpose is to prevent the plunger from traveling beyond the limits of the cylinder. This restriction is essential for several reasons: it helps to avoid mechanical damage that could occur if the plunger were to exceed its designed travel distance, protects the integrity of the hydraulic system, and ensures that the elevator operates within safe parameters. In scenarios where the plunger is allowed to move beyond its designated limits, various problems could arise, such as potential rupture of hydraulic lines, misalignment of components, or failure of the system altogether. Therefore, the stop ring serves as a critical safety feature that governs the movement of the plunger, ensuring that it remains within the confines of the cylinder to maintain operational integrity and safety. Understanding the stop ring's function also elucidates why other options may not accurately capture its purpose. For example, while enhancing lift efficiency, maintaining constant pressure, or indicating the plunger's position are important aspects of hydraulic systems, they do not directly relate to the primary safety function that the stop ring serves in the context of hydraulic plunger operation.

9. What type of alteration is the addition of a car top emergency exit?

A. Major alteration

B. Minor alteration Type A

C. Minor alteration Type B

D. No alteration

The addition of a car top emergency exit is classified as a minor alteration Type B. This classification is used for alterations that do not fundamentally change the nature or operating parameters of an existing elevating device but do enhance safety features or accessibility. The inclusion of a car top emergency exit improves the safety of the elevator, providing an escape option in emergencies, without changing the elevator's operating capacity or performance. Type B modifications often involve safety enhancements that comply with regulations, which are less substantial than major alterations, thus they require less extensive review and approval processes. While major alterations could include significant changes to the structural integrity or design of the elevator, or modifications that affect its capacity or performance, the addition of an emergency exit is considered to be a straightforward enhancement aimed at improving user safety. This distinction is essential in understanding regulatory compliance and maintenance requirements.

10. According to the Occupational Health and Safety Act, who holds responsibility for health and safety?

A. Employers only

B. Workers only

C. Workers and employers

D. Health and safety officers

The Occupational Health and Safety Act establishes a framework for health and safety in the workplace, outlining shared responsibilities among various parties. The correct answer indicates that both workers and employers have a vital role to play in fostering a safe working environment. Employers are responsible for ensuring that workplaces comply with health and safety regulations, providing necessary training and equipment, and creating policies to protect workers. On the other hand, workers also have responsibilities, such as following safety procedures, using protective gear, and reporting unsafe conditions. This joint approach promotes a culture of safety, where all parties are actively engaged in preventing accidents and illnesses. The collaborative nature of this responsibility highlights the importance of communication and cooperation between employers and employees to effectively manage workplace health and safety. Understanding this shared responsibility is crucial for anyone in the field of elevating devices and other occupational areas.