

EX General Knowledge Quiz – Answer Key

1. What is the ideal application for an EX rated forklift?
 - a. EX-rated lift trucks are designed and built to be utilized for any indoor applications to meet their stringent and constant performance requirements.
 - b. EX-rated lift trucks are designed and built to be utilized for any indoor or outdoor applications but may see some performance deterioration when used outdoors.
 - c. **EX-rated lift trucks are designed and built to be utilized for specialized indoor applications, performance will be dictated by adherence to the specialized application the lift-truck was obtained for.**
 - d. EX-rated lift trucks are designed and built to be utilized for specialized indoor and outdoor applications, performance will be dictated by adherence to the specialized application the lift-truck was obtained for.

2. RICO builds all EX-lift trucks to codes and standards laid out by OSHA 1910.178 (a)(c) as well as ANSI B56.1 & B56.9, but what other recognized standards does RICO use when designing and building an EX rated lift truck?
 - a. **NFPA 505, UL 583**
 - b. ASTM, IPC
 - c. IMC, UL 583
 - d. NFPA 505, NSPC

3. RICO Manufactured EX-lift trucks are tested and approved for use in hazardous environments by a 3rd party nationally recognized testing laboratory named.
 - A. Underwriters Laboratories (UL)
 - B. Factory Mutual (FM)**
 - C. NSF International (NSF)
 - D. Intertek Testing Services NA, Inc (ITSNA)

4. EX-Lift trucks built by RICO are tested, approved, and recognized by Factory Mutual (FM) as a complete _____.
 - a. Component
 - b. Device
 - c. **System**

- d. Element
5. Requested changes to an EX-rated lift trucks design must be approved by:
- a. Authority Having Jurisdiction (AHJ)
 - b. Factory Mutual
 - c. **Factory Mutual & RICO Manufacturing Inc.**
 - d. OSHA
6. Customers, Dealers, and OEM's do not have the authority to rate a hazardous environment. This authority belongs to:
- a. Factory Mutual (FM)
 - b. OSHA
 - c. Customers Safety Team
 - d. **Authority Having Jurisdiction (AHJ)**
7. RICO manufactured EX trucks are built to operate in Class 1, Divisions 1 & 2, Group D and Class 2, Divisions 1 & 2, Group G. Which of these divisions is considered more hazardous?
- a. **Division 1**
 - b. Division 2
 - c. Both are equally hazardous
 - d. Neither are considered hazardous
8. _____ are used to house components that have a high energy potential such as contactors, controllers, motors, and others to prevent any arcing or sparks from reaching the hazardous environment.
- a. Conduits
 - b. Operator Cabin
 - c. **Enclosures**
 - d. Battery Compartment
9. Static discharge is crucial to prevent an EX-rated lift truck from being a potential source of ignition when operating in a hazardous environment. What components does RICO use to allow static discharge from the chassis to ground?

- a. Static Straps and Chains
 - b. Static Conductive Fenders
 - c. Static Conductive Forks and Carriage
 - d. Static Conductive Wheels and Belts**
10. All EX-rated lift trucks come with spark protection components made from materials such as aluminum, brass, and bronze. Where are these protections typically placed?
- a. Undercarriage
 - b. Exposed Metal Perimeter**
 - c. Axles, Linkages, Pins
 - d. Enclosures
11. Enclosures and conduits utilize flame paths to help prevent ignition of hazardous atmospheres during the event of an internal explosion. There are two types of flame paths: Joint Surface Flame Paths and Threaded Flame Paths. What is a flame path?
- a. Piping from enclosure routed through the truck to allow a path for gases and pressure to cool and escape during an internal explosion.
 - b. Distance between the components housed in an enclosure and the enclosure wall.
 - c. Clearance between two surfaces creates a path for gases or pressure to cool and escape during an internal explosion.**
 - d. A small hole in top of the enclosure to allow flames or internal explosions to be immediately expelled from enclosure to help prevent component damage.
12. How should batteries for EX-rated forklifts batteries be charged?
- a. Should be placed on designated EX battery charger at correct settings within designated area in which the truck typically operates in.
 - b. Should be placed on designated battery charger at correct settings within designated area in which the truck typically operates in.
 - c. Should be placed on designated EX battery charger at correct settings in designated area outside of area in which truck normally operates.
 - d. Should be placed on designated standard battery charger at correct settings in designated area outside of area in which truck normally operates.**

13. _____ is an electrical design approach that prevents explosions from occurring by ensuring that the energy is transferred to a hazardous area is well below the energy required to initiate an explosion.
- a. Dielectric Safety
 - b. Non-Incendive Safety
 - c. Functional Safety
 - d. **Intrinsic Safety**
14. Which of the devices below would be considered an intrinsically safe device?
- a. Contactor
 - b. **Key Switch**
 - c. Motor
 - d. Relay
15. What are intrinsically safe signals designed to control?
- a. Sends intrinsically safe signals to typically considered hazardous components to power them with ease of mind there will be no arcing or other potential hazards presented.
 - b. **Controls switching of high potential signals and power running throughout the electrical system that must be contained to enclosures and is non-suitable for exposed routing to controls.**
 - c. Controls switching of high potential signals and power that is exposed throughout the truck going to various components such as relays and motors.
 - d. Controls switching of low potential signals and power running throughout the electrical system that must be contained to enclosures and is non-suitable for exposed routing to controls.
16. Which one of the below scenarios negatively impacts the EX-rating of an EX-rated lift truck?
- a. Using the Same Static Conductive Tires for 6 Months.
 - b. Failed Contactor within Enclosure.
 - c. **Brass Damaged/Missing from Bottom of Forks**
 - d. Loose Bolt on Aluminum Rub Rail.

17. Some components on a EX-rated forklift cannot be repaired, and if a failure should occur the component or assembly itself must be replaced to ensure that the replacement is EX-rating compliant. Identify the components below that must be replaced in its entirety if it fails or is damaged.
- a. Conduits / Wireways
 - b. Brass Coated Forks
 - c. Enclosures
 - d. **All of the above.**