**1 – What is JPA ?**

Java Persistence API is a collection of classes and methods to persistently store the vast amounts of data into a database which is provided by the Oracle Corporation.

**2** - **What is the naming convention for finder methods in the Spring data repository interface ?**

Spring uses lower snake case by default, which means it uses only lower case letters and separates words with underscores.

**3 - What is PagingAndSortingRepository ?**

PagingAndSortingRepository is an extension of CrudRepository to provide additional methods to retrieve entities using pagination and sorting.

**4 - Differentiate between findById() and getOne() ?**

The difference between them is: **getOne Returns a reference to an entity, and no result throws an exception**. findById Return to one Optional Object; findOne Return to one Optional Object can realize dynamic query.

**5 - What is @Query used for ?**

In order to define SQL to execute for a Spring Data repository method, we can annotate the method with the @Query annotation

**6 - What is lazy loading in hibernate ?**

Lazy loading is a fetching technique used for all the entities in Hibernate. It decides whether to load a child class object while loading the parent class object. When we use association mapping in Hibernate, it is required to define the fetching technique. The main purpose of lazy loading is to fetch the needed objects from the database.

For example, we have a parent class, and that parent has a collection of child classes. Now, Hibernate can use lazy loading, which means it will load only the required classes, not all classes. It prevents a huge load since the entity is loaded only once when necessary. Lazy loading improves performance by avoiding unnecessary computation and reduce memory requirements.

Lazy loading can be used with all types of Hibernate mapping, i.e., one-to-one, one-to-many, many-to-one, and many-to-many.

**7 – What is SQL injection attack ? Is Hibernate open to SQL injection attack ?**

SQL injection refers to the act of someone inserting a MySQL statement to be run on your database without your knowledge. Injection usually occurs when you ask a user for input, like their name, and instead of a name they give you a MySQL statement that you will unknowingly run on your database.

Hibernate does not grant immunity to SQL Injection, one can misuse the api as they please. There is nothing special about HQL (Hibernates subset of SQL) that makes it any more or less susceptible.

**8 - What is criteria API in hibernate ?**

In Hibernate, the Criteria API helps us build criteria query objects dynamically. Criteria is a another technique of data retrieval apart from HQL and native SQL queries. The primary advantage of the Criteria API is that it is intuitively designed to manipulate data without using any hard-coded SQL statements.

**9 - What Is Erlang? Why Is It Required For Rabbitmq ?**

Applications that are deployed inside the same Erlang cluster as the RabbitMQ, such as RabbitMQ plugins, can start a direct connection that bypasses network serialisation and relies on Erlang distribution **for data transfers**.

**10 – What is the JPQL ?**

JPQL is Java Persistence Query Language defined in JPA specification. It is used to create queries against entities to store in a relational database. JPQL is developed based on SQL syntax. But it won't affect the database directly.

**11 – What are the steps to persist an entity object ?**

The entity manager implements the API and encapsulates all of them within a single interface.

Entity manager is used to read, delete and write an entity.

An object referenced by an entity is managed by entity manager.

**12 – What are the different types of entity mapping ?**

* one-to-one
* one-to-many or many-to-one (dependent on the direction)
* many-to-many

13 - What are the properties of an entity ?

The data values associated with an entity consist of **one or more properties**. Each property has a name and one or more values. A property can have values of more than one type, and two entities can have values of different types for the same property.

14 - Difference between CrudRepository and JpaRepository in Spring Data JPA?

CrudRepository and JPA repository both are the interface of the spring data repository library. Spring data repository reduces the boilerplate code by providing some predefined finders to access the data layer for various persistence layers.

JPA repository extends CrudRepository and PagingAndSorting repository. It inherits some finders from crud repository such as findOne, gets and removes an entity. It also provides some extra methods related to JPA such as delete records in batch, flushing data directly to a database base and methods related to pagination and sorting.

We need to extend this repository in our application and then we can access all methods which are available in these repositories. We can also add new methods using named or native queries based on business requirements.