**Section - A**

**Q2. What is a Spring Framework?**

**ANS:** The Spring Framework is an open-source framework for building enterprise Java applications**.** With its framework, Spring seeks to make the difficult and time-consuming process of creating enterprise Java applications more manageable with Aspect-oriented programming and Dependency injection.

**Q3. List the advantages of Spring Framework**

* Spring's Web Framework is Well-Organized
* Spring is easy to implement as it does not force the developer to inherit certain classes
* Spring applications can be considered to be loosely coupled as per the dependency injection mechanisms.
* Spring framework contains various types of templates for Hibernate, JDBC, and JPA technologies. With the help of this approach, developers are not required to define complex code.

**Q4. What are the different features of Spring Framework?**

1. **ANS:** Spring simplifies the database communication process by providing direct support for popular data access frameworks in Java, such as JDBC, Hibernate, Java Persistence API (JPA), etc.
2. AOP aims to provide more modularity to the cross-cutting concerns, which are functions that span across the application.
3. IoC container is one of the core features of Spring that is responsible for managing the lifecycle of a defined Java object.
4. The Spring MVC enables developers to create applications using the popular MVC pattern.
5. Spring Web Service component provides a streamlined way to create and manage web service endpoints in the application. It offers a layered approach that can be managed using XML and can be used to provide mapping for web requests to a specific object.

**Q5. How many modules are there in Spring Framework and what are they?**

**ANS:** The Spring Framework consists of features organized into about 20 modules. Some of the modules are core, beans, context, expression language, AOP, Aspects, Instrumentation, JDBC, ORM, OXM, JMS, Transaction, Web, Servlet, Struts etc.

**Q6. What is a Spring configuration file?**

**ANS:** A Spring configuration file is an XML file that contains the classes information on how those classes are configured and introduced to each other.

**Q7. What are the different components of a Spring application?**

**ANS:** Spring Boot Framework has mainly four major Components.

* Spring Boot Starters
* Spring Boot AutoConfigurator
* Spring Boot CLI
* Spring Boot Actuator

**Q8. What are the various ways of using Spring Framework?**

**ANS:** When there is less time and want to build an application which will be fast and efficient, Spring framework. lots of features that help the developers to work on their application rather than worrying about nonfunctional code. So, the developer can focus on what is required to deliver. It increases developers productivity and reduces the application development time because most of the things are already offered by the framework

**Q9. What is Spring IOC Container?**

**ANS:** The IoC container is responsible to instantiate, configure and assemble the objects. The IoC container gets information from the XML file and works accordingly. There are two types of IoC containers:

1. BeanFactory
2. ApplicationContext

**Q10. What do you mean by Dependency Injection?**

**ANS:** Dependency injection allows the Spring container to "inject" objects into other objects or "dependencies".

**Q11. How to install spring boot in IntelliJ IDEA?**

**ANS:** Open the IDE and select on plugins, then click on the installed tabs. Then search for Spring. Finallymake sure that the checkboxes next to all relevant plugins are selected.

**Q12. Please change default server port from 8080 to 9090?**

**ANS:** We can do this by manually changing the value in the application.properties file: server.port = 9090

**Q13. How to resolve the whitelabel error page in spring boot application?**

ANS: WhiteLabel Error can is disabled in the application.properties file by setting the server.error.whitelabel.enabled to false.

**Q15. Differentiate between a Bean Factory and an Application Context.**

**ANS: Bean Factory -** It is a fundamental container that provides the basic functionality for managing beans. It supports only Singleton and Prototype bean scopes.It does not support Annotations. In Bean Autowiring, we need to configure the properties in XML file only.BeanFactory will create a bean object when the getBean() method is called .BeanFactory interface provides basic features only thus requires less memory.

**Application Context -** It is an advanced container that extends the BeanFactory that provides all basic functionality and adds some advanced features. It supports all types of bean scopes. It supports Annotation based configuration in Bean Autowiring.ApplicationContext loads all the beans and creates objects at the time of startup. ApplicationContext provides all the basic features and advanced features, including several that are for enterprise applications thus requiring more memory.

**Q16. Difference between Autowired , Inject and Qualifier Annotation**

**ANS:** The difference is that Autowired and Qualifier are the spring annotation while Inject is the standard java annotation.

**Section - B**

Q 1 - Which of the following is correct assertion about spring?

A) - Spring enables developers to develop enterprise-class applications using POJOs.

B) - Spring is organized in a modular fashion.

C) - Testing an application written with spring is simple because environment-dependent code is moved into this framework.

**D) - All of above.**

2. The concept of an endpoint in web services is much like that of a controller in web applications.

**a) True**

b) False

c) None of the above

d) All of the above

3. An alternative to Spring HibernateTemplate is:-

a) HibernateContext

**b) Hibernate contextual sessions**

c) All of the mentioned

d) None of the mentioned

4. DAO methods must be made transactional.

**a) True**

b) False

c) None of the above

d) All of the above

5. Annotation to find a transaction and then fail, complaining that no Hibernate session has been bound to the thread.

a) @Transaction

**b) @Transactional**

c) @Transactions

d) None of the mentioned

6. Class used to have full access to the Spring context’s life cycle machinery and dependency injection.

**A. DelegatingFilterProxy**

B. WebApplicationContextUtils.getRequiredWeb()

C. WebApplicationUtils.getRequiredWebApplicationContext()

D. None of the mentioned

7. What is Front controller pattern in spring?

**(A) Dispatcher servlet**

(B) Web.xml

(C) Spring.xml

(D) Controller.java Any Spring controller used in MVC

8. - What is singleton scope?

**A - This scopes the bean definition to a single instance per Spring IoC container.**

B - This scopes the bean definition to a single instance per HTTP Request.

C - This scopes the bean definition to a single instance per HTTP Session.

D - This scopes the bean definition to a single instance per HTTP Application/ Global session

9. What are the JPA @Entity association attributes?

**A. Association validation**

B. Association multiplicity

C. Association cascade behavior

D. Association direction

10. What are beans in the concept of Spring or what are spring beans?

(A) Controller classes

(B) Service classes

(C) Repository

**(D) Any class that is managed by the container.**

11.Which interface in spring is responsible for Instantiating and managing the so called Spring beans?

(A) Bean Factory

**(B) ApplicationContext**

(C) BeanDefenition

(D) BeanFactoryAware

12. JPA implementation is provided by ---?

A. Hibernate

B. Toplink

C. Ibatis

**D. All of the above**

13. What is byName mode of autowiring?

A - Default setting which means no autowiring and you should use explicit bean reference for wiring.

**B - Autowiring by property name. Spring tries to match and wire its properties with the beans defined by the same names in the configuration file.**

C - Spring first tries to wire using autowire by constructor, if it does not work, Spring tries to autowire by byType.

D - Similar to byType, but type applies to constructor arguments.

14. What is Spring MVC framework?

A - Spring MVC framework is Model-Value-Class architecture and used to bind model data with values.

**B - The Spring web MVC framework provides model-view-controller architecture and ready components that can be used to develop flexible and loosely coupled web applications**.

C - Spring MVC framework is used for Transaction management for Web Applications.

D - Spring MVC framework is used for AOP for Web Applications.

15. What is the Life Cycle Of A Jpa Entity?

A. New / Transient

B. Managed / Persisted

C. Detached

**D. All of the above**

16. Which of the following statement is correct?

A. Spring is not an open source framework.

B. Spring is heavyweight.

C. Spring supports tight coupling.

**D. Spring using Dependency Injection and supports loose coupling.**

17. What annotation is used to map a method for PUT request?

**A. @PutMapping**

B. @PostMapping

C. @Put

D. @Post

18. What is the built-in library in Spring Boot used to serialize objects to JSON format?

A. JsonFormatter

**B. Jackson**

C. Gson

D. MessageConverter

19. Annotation for Hibernate exceptions to be translated into Spring’s DataAccessException for consistent exception handling

A. @Translation

B. @Repo

**C. @Repository**

D. None of the above

20. What annotation is used to map value to the method argument in http://localhost/factorial/{value}?

@Map

@Param

@RequestParam

**@PathVariable**