**Section A:**

Q1.

* IoC (Inversion of Control) Container. ...
* Support for aspect-oriented programing. ...
* Data access framework. ...
* Transaction management framework. ...
* Spring MVC framework. ...
* Spring web service. ...
* Spring test frameworks. ...
* Core container.

Q2.

The Spring Framework is an open-source framework forbuilding enterprise Java applications. It can be thought of as a *framework of frameworks* because it provides support to various frameworks such as [Struts](https://www.javatpoint.com/struts-2-tutorial), [Hibernate](https://www.javatpoint.com/hibernate-tutorial), Tapestry, [EJB](https://www.javatpoint.com/ejb-tutorial), [JSF](https://www.javatpoint.com/jsf-tutorial), etc. The framework, in broader sense, can be defined as a structure where we find solution of the various technical problems.

Q3.

1. Lightweight

Spring allows you to create enterprise level applications through a Java method known as Plain Old Java Object (POJO).

2. Configurations

Spring follows a separate way of configuration including for application logic.

3. Server Requirement

Spring framework does not require you to use neither an application or web server. Usually, a DI is used to manage components.

Q4.

Spring is a lightweight framework. It provides the best mechanisms for different frameworks, such as Struts, Hibernate, EJB, JSF, and Tapestry. It helps solve real-time technical problems. Spring contains multiple modules, such as WEB MVC, IOC, DAO, AOP, Context, and ORM.

Q5.

The Spring framework comprises of many modules such as core, beans, context, expression language, AOP, Aspects, Instrumentation, JDBC, ORM, OXM, JMS, Transaction, Web, Servlet, Struts etc

Q6.

A Spring configuration file is an XML file that contains the classes information.which provides an open-source framework for flexibly wiring together the difference parts of an application, each of which is represented by a bean.

Q7.

The Spring framework comprises of many modules such as core, beans, context, expression language, AOP, Aspects, Instrumentation, JDBC, ORM, OXM, JMS, Transaction, Web, Servlet, Struts etc.

Q9.

A Spring IoC container contains more than one bean. We constructed these beans with the configuration metadata that we can provide to the container, for example, in the form of XML <bean/> definitions.

Q10.

In object-oriented programming (OOP) software design, dependency injection (DI) is the process of supplying a resource that a given piece of code requires. The required resource, which is often a component of the application itself, is called a dependency.

Q11.

From the main menu, select File | New | Project.

In the left pane of the New Project wizard, select Spring Initializr.

* Specify a name for the project: spring-boot-tutorial.  
  From the JDK list, select Download JDK and download the latest version of Oracle OpenJDK.
* elect the Spring Web dependency under Web. This dependency is required for any web application that uses spring mvc

Q12.

In project ,inside src/main/resource > application properties

Type ,server.port=9090

Q13.

Change the port number from 8080 to 9090,or any other port number.

Q14.

It resolves the locales by getting the predefined attribute from user's session.

Q15.

BeanFactory loads beans on-demand, while ApplicationContext loads all beans at startup.ApplicationContext Container creates objects of Singleton bean at the time of loading only

**Section B**

Q1

D) - All of above.

Q2.

a)True

Q3.

b) Hibernate contextual sessions

Q4.

a) True

Q5.

b) @Transactional

Q6.

A. DelegatingFilterProxy

Q7.

(B) Web.xml

Q8.

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

Q9.

A. Association validation

Q10.

D) Any class that is managed by the container.

Q11.

(B) ApplicationContext

Q12.

D. All of the above

Q14.

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.

Q15.

D. All of the above

Q16

A. Spring is not an open source framework.

Q17

A. @PutMapping

Q18

B. Jackson

Q19.

C. @Repository

Q20.

@PathVariable