

**Question 1**

- a. Which Spring framework API has all the routing annotations?
- b. Briefly describe what each of the following annotations is used for in a Spring controller:
  - i. `@Controller`
  - ii. `@RequestMapping`
  - iii. `@GetMapping`
  - iv. `@PostMapping`
- c. Which interface can we use to operationalize CRUD tasks on a table in database using JPA.
- d.
  - i. What is Maven?
  - ii. Outline the advantages of using Maven in a Spring framework project.
- e.
  - i. Give the URL which is used to configure a Spring Boot Starter project?
  - ii. Describe the two basic Spring Boot dependencies required for creating a basic Spring web application?
- f. Briefly describe each statement in the code excerpt given below:

```
6 @RestController
7 public class FunController {
8
9     @GetMapping("/")
10    public String sayHello() {
11
12        return "This is Spring!";
13    }
14 }
```

**Question 2**

- a. Define and explain the concepts of Client Tier, Business Tier, and Server Tier in the context of enterprise architecture.
- b. With the aid of a diagram, briefly explain the elements that constitute the multitiered architecture of typical JEE Application.
- c. Describe the components that make up the standard directory structure of a maven project in a Spring framework.
- d. Explain the importance of Object-Oriented (OO) design principles in software development and give the SOLID design principles.
- e.
  - i. What is a template engine?
  - ii. Give three template engines that can be used with the Spring framework.
  - iii. Which attribute of the `<HTML>` tag is used to reference a template engine in an HTML document? As you give the attribute, show with an example how Thymeleaf is referenced in an HTML document.