



UNIVERSITY OF KELANIYA – SRI LANKA
FACULTY OF COMPUTING AND TECHNOLOGY

Bachelor of Science Honours in Computer Science
Degree Examination - September 2022

Academic Year 2019/2020 – Semester II

Computer Science

CSCI 22082 – Object Oriented Programming II

No. of Questions: **Four (04)** Time: **Two (02) hours** No. of Pages: **Two (02)**

Answer all the questions.

-
1. (a) What is MVC architecture? Explain Model, View, and Controller in Brief. (25)
- (b) What is Spring Framework? List THREE advantages of using Spring. (25)
- (c) What is Dependency Injection? (20)
- (d) Explain Layered Architecture and how we can implement Layered Architecture in a Spring Boot Application. (30)

[100 marks]

2. (a) Briefly explain the usage of a template engine. (20)
- (b) What is Thymeleaf Template? (15)
- (c) What is lambda expression? Give an example of lambda expressions. (30)
- (d) What is a functional interface? (15)
- (e) What is the serialization of an object in Java? (20)

[100 marks]

3. (a) What is the usage of Remote Method Invocation (RMI)? (20)
- (b) List two modern alternatives for RMI. (10)
- (c) Briefly explain a deadlock in Java (15)
- (d) What is the use of the keyword, 'Synchronized' in Java? (15)
- (e) Briefly explain the usage of ExecutorService in Java Multi-Threading. (20)
- (f) Briefly discuss the difference between **Callable** and **Runnable** Interfaces in Java Multi-Threading. (20)

[100 marks]

4. (a) Explain the need for an ORM tool in application development. (20)
- (b) What is JPA? (15)
- (c) What is the difference between Hibernate and Spring Data JPA? (20)
- (d) "Although Hibernate Query Language (HQL) provides greater flexibility, in some circumstances, Native SQL must be used in conjunction with Hibernate."

Do you agree with the above statement? Justify your answer. (25)

- (e) List and briefly explain **four** different types of entity mapping in Hibernate? (20)

[100 marks]

----- End of Paper -----.