Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks. **Attempt all questions.**

1. a) Explain the Java architecture and the significance of class paths in Java. 7

1. b) Explain the concept of exception handling in Java. Write an example program 8

2. a) Describe the purpose of interfaces in Java and how they differ from abstract classes. 8

2. b) Differentiate between upcasting and downcasting in Java. Provide examples to illustrate each. 7

3. a) Explain layout management in Java Swing. Write a program to demonstrate a login form with username and password field with a sign in button. 8

   OR

   Explain VBox or HBox in Java. Write a program to demonstrate the user registration form with a submit button.

3. b) Compare JavaFX and Swing. Discuss the strengths and weaknesses of each. 7

4. a) Explain the concepts of TCP, UDP, IP Address, and Ports in the context of network programming. 8

4. b) Explain the architecture of RMI (Remote Method Invocation) 7

   OR

   Explain the architecture of CORBA (Cross Origin Request Broker)

5. a) Explain the concepts of IDL (Interface Definition Language) and provide a simple CORBA program example. 7

5. b) Differentiate between JDBC driver types and discuss their configurations 8

6. a) Discuss HTTP methods and responses in web applications. 7

6. b) Explain the life cycle of web servlets. 8