MCA (MIC24) - Full Stack Development

Model Answer Booklet

Prepared for Midterm Exam

# UNIT – I

## Q1(a) Explain the CSS box model with a diagram. How do margin, border, padding, and content interact?

[Full detailed answer content from Unit I Q1(a)]

# UNIT – I

## Q1(b) Explain basic UNIX/Linux commands for file management.

[Full detailed answer content from Unit I Q1(b)]

# UNIT – I

## Q2(a) What is branching in Git? Explain git branch, git checkout, and git merge with examples.

[Full detailed answer content from Unit I Q2(a)]

# UNIT – I

## Q2(b) Explain the concept of HTML forms with examples.

[Full detailed answer content from Unit I Q2(b)]

# UNIT – II

## Q3(a) What is AJAX? Explain how it enables asynchronous communication between the client and server.

[Full detailed answer content from Unit II Q3(a)]

# UNIT – II

## Q3(b) How do you parse and stringify JSON data in JavaScript? Provide examples.

[Full detailed answer content from Unit II Q3(b)]

# UNIT – II

## Q4(a) Explain the key features of JavaScript. How does it differ from other programming languages like Java or Python?

[Full detailed answer content from Unit II Q4(a)]

# UNIT – II

## Q4(b) How does JavaScript implement OOP concepts? Explain about the concept of inheritance.

[Full detailed answer content from Unit II Q4(b)]

# UNIT – III

## Q5(a) What is React? Explain its key features (Virtual DOM, JSX, Components) and advantages over traditional DOM manipulation.

[Full detailed answer content from Unit III Q5(a)]

# UNIT – III

## Q5(b) What is React Router? Explain how it enables navigation in Single Page Applications (SPAs).

[Full detailed answer content from Unit III Q5(b)]

# UNIT – III

## Q6(a) What are controlled components in React? How do they differ from uncontrolled components?

[Full detailed answer content from Unit III Q6(a)]

# UNIT – III

## Q6(b) What is Redux? Explain its core principles (Store, Actions, Reducers) and data flow.

[Full detailed answer content from Unit III Q6(b)]

# UNIT – IV

## Q7(a) Explain Object-Oriented Programming (OOP) principles in Java (Encapsulation, Inheritance, Polymorphism, Abstraction) with examples.

[Full detailed answer content from Unit IV Q7(a)]

# UNIT – IV

## Q7(b) What is the MVC architecture? Explain the roles of Model, View, and Controller with a web application example.

[Full detailed answer content from Unit IV Q7(b)]

# UNIT – IV

## Q8(a) What is Spring MVC? Explain its core components (DispatcherServlet, Controller, ViewResolver).

[Full detailed answer content from Unit IV Q8(a)]

# UNIT – IV

## Q8(b) What is a RESTful API? Explain its principles (statelessness, HTTP methods, resource URIs).

[Full detailed answer content from Unit IV Q8(b)]

# UNIT – V

## Q9(a) What are primary keys, foreign keys, and composite keys? How do they enforce referential integrity?

[Full detailed answer content from Unit V Q9(a)]

# UNIT – V

## Q9(b) Explain JOIN operations (INNER, LEFT, RIGHT, FULL). When would you use each?

[Full detailed answer content from Unit V Q9(b)]

# UNIT – V

## Q10(a) Explain JdbcTemplate in Spring. How does it handle exceptions and resource management?

[Full detailed answer content from Unit V Q10(a)]

# UNIT – V

## Q10(b) How to deploy a Spring Boot app on AWS?

[Full detailed answer content from Unit V Q10(b)]