

# Practical Examination Question Paper

Course: Concepts of Operating Systems & Software Development Methodologies

Duration: 3 Hours

Total Marks: 50

## Instructions:

- 1 Answer all questions.
- 2 Each question carries equal marks.
- 3 Write commands, code, or steps clearly.
- 4 Where applicable, execute and demonstrate output.

## Section A: Operating Systems (20 Marks)

- Q1. Write Linux commands to create a directory, set file permissions, and copy files using both absolute and relative paths.
- Q2. Write a shell script to check whether a given number is prime or not.
- Q3. Write a shell script to display the largest of three numbers entered by the user.
- Q4. Write a shell script to print the Fibonacci series up to N terms.
- Q5. Simulate the First-Come-First-Serve (FCFS) CPU scheduling algorithm and calculate Turnaround Time and Waiting Time.
- Q6. Write a program using fork() system call to create a child process and display process IDs of parent and child.
- Q7. Write a shell script to demonstrate the use of 'case' statement for a simple calculator (Add, Subtract, Multiply, Divide).
- Q8. Explain and demonstrate page replacement using FIFO algorithm with an example.

## Section B: Software Development Methodologies (30 Marks)

- Q1. Create a Git repository, commit initial code, create a new branch, and merge it into the main branch.
- Q2. Write Git commands to view commit history, revert a commit, and push changes to a remote repository.
- Q3. Install Docker, create a Dockerfile for a simple web application, and build and run the Docker container.
- Q4. Deploy a sample web application on Kubernetes and expose it as a service.
- Q5. Install and configure Selenium WebDriver using Eclipse. Write a test script to log in to a sample website using username and password fields.
- Q6. Write a Selenium script to select multiple checkboxes and verify their state.
- Q7. Configure Jenkins and create a pipeline job that integrates with a Selenium test suite.

Q8. Prepare a sample test plan document for a web application with at least 5 test cases (manual or automated).