



POORNIMA UNIVERSITY, JAIPUR
END SEMESTER EXAMINATION, 2023-2024 EVEN SEMESTER

Write Roll No Below: _____

BCA (All) I () - II (Main/Back) End Semester Examination,
23BCACCA2103: Linux and Shell Script

Time: 3 Hours

Total Marks: 60

Min. Passing Marks: 21/24/27

Question Paper ID: 001090

Instructions: Attempt all five questions. There is an internal choice either (a or b) in Q1 to Q5. Marks of each question or its parts are indicated against each question/part. Draw neat sketches wherever necessary to illustrate the answer. Assume missing data suitably (if any) and clearly indicate the same in the answer.

Bloom Level(BL): 1-Remembering, 2-Understanding, 3-Applying, 4-Analysing, 5-Evaluating, 6-Creating

Use of following supporting material is permitted during examination for this subject: Nil

- Q1. (a)** (i) What is Linux? Discuss its features and also draw the Linux Architecture. **(6 Marks)** **Marks BL CO**
12 1 1
(ii) Elaborate on the index node command, including its syntax and functionality. **(6 Marks)**

(OR)

- (b)** (i) Explain the following command with syntax **(6 Marks)**
Cat , ls , echo , mkdir , who , ps , du , df
(ii) What is file permission? How change the file permission? **(6 Marks)**

- Q2. (a)** (i) Explain different types of Shells in Linux. Write a shell script to print sum of two numbers. **(6 Marks)** **Marks BL CO**
12 1 2
(ii) Define the pipe command and explain how to count the number of user logging in current system with example. **(6 Marks)**

(OR)

- (b)** (i) Explain the tee command with syntax and variables in shell script. **(6 Marks)**
(ii) Write notes on **(6 Marks)**
(a) Concatenating files (b) Count characters ,Words and lines

- Q3. (a)** (i) What are the key components of the Unix file system, and how do they facilitate efficient data management and organization. **(6 Marks)** **Marks BL CO**
12 1 3
(ii) Perform following task from given data: **(6 Marks)**

Roll NO	Name of the student	Class	Address
101	Ram	BCA	Jaipur
102	Anil	B.Tech	New Delhi
103	Riya	MCA	Kanpur
104	Sita	B.A	Rampur

- (i) Write the Sed command to replace "Jaipur" with "india"
(ii) Write the Sed command to update in actual file of all who are BCA to BCA(AIDS)
(iii) Write the Sed command to display last line record.

(OR)

- (b)** (i) What are system calls in the context of Linux operating systems, and could you elaborate on the various types of system calls and their respective functionalities within the Linux environment?" **(6 Marks)**
(ii) What are the various commands that belong to the 'grep' family in linux -like systems, and how does each command differ in terms of functionality and usage? **(6 Marks)**

- Q4. (a)** (i) How to differentiate between fork() and vfork().and also write a C program to implement the fork() . **(6 Marks)** **Marks BL CO**
12 1 4
(ii) Explain each stage of lifecycle of a process with suitable diagram. **(6 Marks)**

(OR)

- (b)** (i) What do you mean by signals in linux environment? Write about SIGINT, SIGKILL, SIGALRM. **(6 Marks)**
(ii) What is process table? What are the attributes of process table? **(6 Marks)**

- Q5. (a)** (i) Elaborate the concept of IPC through pipe and shared memory with appropriate diagram. **(6 Marks)** **Marks BL CO**
12 1 5
(ii) What is socket? Explain socket attributes and socket communications. **(6 Marks)**

(OR)

- (b)** (i) Explain characteristics of Perl programming language. **(6 Marks)**
(ii) Elaborate shmget and shmat function in inter process communication. **(6 Marks)**

*****End of Question Paper*****