



Faculty of Science / Engineering

End Semester Examination May 2025

CA3EL13 Linux & Shell Programming

Programme	:	BCA / BCA-MCA (Integrated)	Branch/Specialisation	:	-
Duration	:	3 hours	Maximum Marks	:	60

Note: All questions are compulsory. Internal choices, if any, are indicated. Assume suitable data if necessary. Notations and symbols have their usual meaning.

Section 1 (Answer all question(s))				Marks	CO	BL
Q1.	Which command is used to display the operating system name?			1	1	1
	<input type="radio"/> os <input type="radio"/> unix <input type="radio"/> kernel <input checked="" type="radio"/> uname					
Q2.	In which of these directories do we store the user-defined files of the system that we use for the creation of various user directories?			1	1	1
	<input type="radio"/> /etc/users <input checked="" type="radio"/> etc/skel/ <input type="radio"/> /etc/default <input type="radio"/> /usr/temp					
Q3.	Which command is used to extract a column from a text file?			1	2	2
	<input type="radio"/> paste <input type="radio"/> get <input checked="" type="radio"/> cut <input type="radio"/> tar					
Q4.	Which of the following commands will allow the user to search contents of a file for a particular pattern?			1	2	2
	<input type="radio"/> touch <input checked="" type="radio"/> grep <input type="radio"/> find <input type="radio"/> ls					
Q5.	User's password information has been stored in-			1	3	1
	<input type="radio"/> /etc/password <input type="radio"/> /etc/group <input type="radio"/> /etc/passwd <input checked="" type="radio"/> /etc/shadow					
Q6.	Which of the following is used for creating user's environment?			1	3	1
	<input type="radio"/> su <input checked="" type="radio"/> su - <input type="radio"/> -su <input type="radio"/> su --					
Q7.	Which is the correct statement for adding two numbers in a shell script?			1	4	2
	<input type="radio"/> z= expr x+y <input type="radio"/> z=`expr x+y` <input type="radio"/> z=`expr x + y` <input checked="" type="radio"/> None of these					
Q8.	In awk, the built-in variable FS is-			1	4	1
	<input checked="" type="radio"/> Input field separator <input type="radio"/> Output field separator <input type="radio"/> Record separator <input type="radio"/> Subscript separator					
Q9.	Which exact command is used to set subnet mask in the Linux operating system?			1	5	2
	<input type="radio"/> ifconfig <ip address> subnet <subnet mask> <interface> <input type="radio"/> ifconfig <interface> <ip address> subnet <subnet mask> <input checked="" type="radio"/> ifconfig <interface> <ip address> netmask <subnet mask> <input type="radio"/> ifconfig <ip address> netmask <subnet mask> <interface>					

Q10. Which exact command is used to get information about routing tables?

1 5 1

- ☐ netstat -p
 ☐ netstat -s
 ☒ netstat -r
 ☐ None of the above

Section 2 (Answer all question(s))

Marks CO BL

Q11. What is a kernel?

2 1 1

Rubric	Marks
What is a Kernal?	2

Q12. Define the essential differences between batch, time sharing and real-time operating systems.

3 1 1

Rubric	Marks
Essential differences between Batch operating systems.(from other 2)-1 marks Essential differences between Time-sharing operating systems. (from other 2)-1 marks Essential differences between Real-time operating systems.(from other 2)- 1marks	3

Q13. (a) What are the primary purposes and key features of an operating system, particularly Linux?

5 1 1

Rubric	Marks
What are the primary purposes of an operating system, particularly Linux?-2 marks What are the key features of an operating system, particularly Linux?-3 marks	5

(OR)

(b) Draw and explain Linux Architecture.

Rubric	Marks
Draw Linux Architecture.-2 marks Explain Linux Architecture.-3 marks	5

Section 3 (Answer all question(s))

Marks CO BL

Q14. Explain the concept of changing process priority with nice.

2 2 2

Rubric	Marks
What is process priority [1 Mark] nice command [1 Mark], [1+1] Mark	2

Q15. How do you compare the contents of two files? Explain.

2 2 2

Rubric	Marks
Using cmp 1 Mark comm command 1 Mark	2

Q16. (a) Explain more, cron, who, du, sleep and kill command with proper syntax and example.

6 2 1

Rubric	Marks
Explain each command with example [1 Mark]	6

(OR)

(b) Explain pr, bc, tr, cut, uniq and sort command with proper syntax and example.

Rubric	Marks
Explain each command with example(1 Mark), 1*6=6.	6

Section 4 (Answer all question(s))

Marks CO BL

Q17. Explain the functions of a System Administrator.

2 3 1

Rubric	Marks
Each function 1 Mark	2

Q18. Define sed. Write syntax with example.

2 3 2

Rubric	Marks
Definition – 1 Marks Syntax , example – 1Marks	2

Q19. (a) How are the Linux users added,remove and modify user from the Linux system?

6 3 1

Rubric	Marks
users added 2 Mark remove user 2 Mark modify user 2 Mark	6

(OR)

(b) What is system monitoring and logging? Explain with the help of their commands.

Rubric	Marks
System monitoring and logging? 3 Mark Commands 3 Mark	6

Section 5 (Answer all question(s))

Marks CO BL

Q20. Define expr command. How are tested using test command on files and strings?

4 4 1

Rubric	Marks
expr command 2 Mark Test command 2 Mark	4

Q21. (a) Write a script to perform following

- Calculate the sum of integers from 1 to N using a loop.
- Check whether the user is eligible for vote or not.

6 4 3

Rubric	Marks
Each program 3 Mark	6

(OR)

(b) What are the Positional Parameters? Explain their roles in in shell scripts and write a shell script to print integer numbers from 1 to 20.

Rubric	Marks
Positional Parameters 2 Mark Roles in in shell scripts 2 Mark Program 2 Mark	6

Section 6 (Answer any 2 question(s))

Marks CO BL
5 5 1

Q22. Explain Distributed File System and Network management in linux.

Rubric	Marks
Distributed File System 2.5 Mark Network management 2.5 Mark	5

Q23. Explain system startup and shutdown process in detail.

5 5 1

Rubric	Marks
System startup 2.5 Mark Shutdown 2.5 Mark	5

Q24. Write short note on ping, trace route, read, wall and telnet.

5 5 2

Rubric	Marks
Each command 1 Mark	5
