

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 checked="" 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> <interface>		<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 -r

- netstat -s
 None of the above

Section 2 (Answer all question(s))

Q11. What is a kernel?

Marks CO BL
2 1 1

Rubric	Marks
What is a Kernel?	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	3
Essential differences between Time-sharing operating systems. (from other 2)-1 marks	2
Essential differences between Real-time operating systems.(from other 2)- 1marks	

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	5
What are the key features of an operating system, particularly Linux?-3 marks	

(OR)

(b) Draw and explain Linux Architecture.

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

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))

Q17. Explain the functions of a System Administrator.

Marks CO BL
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))

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

Marks CO BL
4 4 1

Rubric	Marks
expr command 2 Mark Test command 2 Mark	4

Q21. (a) Write a script to perform following

6 4 3

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

Rubric	Marks
Each program 3 Mark	6

(OR)

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

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

Section 6 (Answer any 2 question(s))

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

Marks CO BL
5 5 1

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

Q23. Explain system startup and shutdown process in detail.

5 5 1

Rubric	Marks
System startup 2.5 Mark	5
Shutdown 2.5 Mark	

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

5 5 2

Rubric	Marks
Each command 1 Mark	5
