CBCS SCHEME

USN

BCS515C

Fifth Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026
Unix System Programming

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	List and explain the salient features of UNIX Operating system.	10	L1	CO1
	b.	Explain the architecture of UNIX with a neat diagram.	10	L2	CO1
		OR			
Q.2	a.	Explain any 4 directory related commands with syntax and example of each.	10	L2	CO1
	b.	Explain the file types and the file system tree with neat diagram.	10	L1	CO1
		Module – 2			
Q.3	a.	Illustrate the file attributes and permissions with its options.	10	L2	CO2
	b.	Explain the use of chmod command to change file permission using both absolute and relative methods.	10	L2	CO2
		OR			
Q.4	a.	Explain grep command with all its options.	10	L2	CO2
	b.	How test command works? Explain for each with example.	6	L2	CO2
	c.	Write a shell script to display current date and calendar.	4	L3	CO2
		Module – 3			
Q.5	a.	Explain the POSIX and ISO C standards.	4	L2	CO3
	b.	Explain the environment list. Demonstrate how to create, set and update environment variables using C program.	10	L3	CO3
	c.	How to change the file properties? Explain with its syntax and purpose.	6	L2	CO3
		OR			
Q.6	a.	With a neat diagram, explain the memory layout of a C program in UNIX and explain memory allocation API's.	10	L2	CO3
	b.	How a process can be initiated and terminated with a neat diagram? Explain.	10	L2	CO3

		Module – 4			
Q.7	a.	Explain fork( ) and vfork( ) with the programming example.	10	L3	CO4
	b.	Write a description on wait and waitpid( ) with suitable example.	10	L3	CO4
		OR			
Q.8	a.	What are Pipes? What are its limitations? Write a C program to send data from parent to child over a pipe.	10	L3	CO4
	b.	With a neat diagram, explain the client-server communication using FIFO.	10	L2	CO4
		Module – 5			
Q.9	a.	Explain Daemon process by developing program to transform a normal user into daemon process.	10	L3	CO5
	b.	Illustrate signal in UNIX and develop a program to setup signal handlers for sigsetjmp( ) and abort( ).	10	L3	CO5
		OR			
Q.10	a.	Discuss how error logging is done by daemon process with suitable diagram.	10	L2	CO5
	b.	Explain the prototypes of following API's : i) Signal ii) Kill iii) Alarm iv) Sigaction v) System	10	L2	CO5

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