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# B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

## February / March 2023 Semester End Main Examinations

**Programme: B.E.**

**Semester: V**

**Branch: Computer Science and Engineering**

**Duration: 3 hrs.**

**Course Code: 20CS5PCUSP**

**Max Marks: 100**

**Course: Unix Shell and System Programming**

**Date: 27.02.2023**

**Instructions:** 1. Answer any FIVE full questions, choosing one full question from each unit.  
2. Missing data, if any, may be suitably assumed.

### UNIT - I

1	a) With a neat diagram explain the architecture of UNIX operating system.	10
	b) Mention the use of the following commands (i)rm (ii) od (iii) cat (iv) file (v) echo	10

### UNIT - II

2	a) What is Case Conditional? Write a shell script to perform all Arithmetic Operations.	10
	b) Demonstrate the usage of the following: i. Test ii. Set and Shift	10

### OR

3	a) Explain the shell features of while and for with syntax and example programs.	8
	b) Explain the use of here command with example.	6
	c) Describe the string handling facilities of expr with syntax and relevant examples a. Determine the length of the string b. Extract a substring c. Locate the position of a character in a string	6

### UNIT - III

4	a) Explain in detail each of the fields in the outputs of ls -l command.	10
	b) Elaborate on grep as a means for pattern searching and analyse the effect of following commands. • grep -i "welcome" • egrep "HELLO Hello hello" file1 • grep "UNIX\$" file1	10

**Important Note:** Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

- `ls | grep '.*\.(txt|doc)'`
- `$ls -l |grep “^_”`

## **UNIT - IV**

## UNIT - V

6 a) Explain memory layout of a C program with an example and neat diagram. **10**

b) Explain in brief the following with the syntax and example. **10**

(i) fork() and vfork(). (ii) wait() and waitpid()

OR

7 a) Define FIFO. Explain client server communication using a FIFO with a neat diagram. **10**

b) What are environment variables and command line arguments? Write a program in C to echo all its command line arguments to its standard output **10**

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