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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Fourth Semester, B.E. - Computer Science and Engineering

Semester End Examination; May/June - 2018

UNIX System Programming

Time: 3 hrs

Max. Marks: 100

Note: Answer **FIVE** full questions, selecting **ONE** full question from each unit.

UNIT - I

- 1 a. Explain the features of Unix operating system. 7
- b. Define: 3
- i) System call ii) File iii) Process.
- c. Explain the following commands : 10
- i) stty ii) pwd iii) script iv) echo v) printf
- 2 a. Explain the Unix file system with Unix directory organization. 8
- b. Write a 'C' program to Emulate CP Command (Using fopen and fclose). 8
- c. Write the difference between "cmp" and "diff" command with an example. 4

UNIT - II

- 3 a. Explain: i) Relative permission ii) Absolute permission. 5
- b. File Permission are rw__w__r__ write chmod expressions required to change them for the following : 8
- i) r__r____x ii) rwxrwx__x iii) r_xr_xr_x iv) rwxrwxr__
- Using both relation and absolute method.
- c. Explain the following commands : 7
- i) touch ii) unmask iii) find iv) ln
- 4 a. Mention and explain the commands that are suitable for; 8
- i) To run jobs in background ii) To run job with a low priority
- iii) To schedule a job to run at specified time iv) To run jobs periodically
- b. Explain the following commands with example : 10
- i) uniq ii) sort iii) grep iv) cut v) head
- c. Write a command to delete all spaces in a file. 2

UNIT - III

- 5 a. Explain the special parameter used by shell. 6
- b. Write a shell script to accept two file names as arguments, check if the permission for these files are identical. 8
- c. Explain the following statements with syntax and example : 6
- i) test ii) case iii) if

- 6 a. Explain the looping statements in a shell script. 4
- b. Write a shell script to test all file related tests with test. 8
- c. Write the importance of set and shift and write a shell script to search pattern in a given file. 8

UNIT - IV

- 7 a. Compare ANSIC with K & RC. 5
- b. List the API common characteristics. 5
- c. Explain different types of files in Unix and explain open and read file APIs. 10
- 8 a. Write a program to create a FIFO file and perform read and write operation from the same file. 10
- b. Write the importance of symbolic link file and write the different system calls supported with the same. 10

UNIT - V

- 9 a. Outline the environment structure of a process and mention any four environment variables. 6
- b. Give reasons as to why shared libraries are better? 6
- c. Mention at least six resource limit and briefly explain the limits that they put on a process. 8
- 10 a. Explain various exec functions along with its prototypes and diagram that shows the relationship. 10
- b. Explain network log in with suitable diagram. 6
- c. Write the difference between fork and vfork. 4

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