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Fourth Semester B.E. Degree Examination, June 2012
Unix and Shell Programming

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting
at least TWO questions from each part.**

PART – A

- 1 a. With neat diagram, explain the architecture of unix operating system. (06 Marks)
- b. With the help of a diagram, explain the parent-child relationship. Explain the unix file system. (06 Marks)
- c. Explain the following with examples:
 i) Absolute and relative path names ii) Internal and external commands. (08 Marks)
- 2 a. A file's current permissions are `rw _ r _ x r _ _`. Specify the `chmod` expression required to change them for the following:
 i) `rwX rwX rwX` ii) `r _ _ r _ _ _ _ _`
 iii) `_ _ _ _ _ _ _ _` iv) `_ _ _ r _ _ r _ _`
 using both the relative and absolute methods of assigning permissions. (08 Marks)
- b. Explain briefly the file attributes listed using `ls -l` command. (06 Marks)
- c. What are the different modes of Vi editor? Explain with a diagram. (06 Marks)
- 3 a. Explain the three standard files with respect to unix operating systems. (06 Marks)
- b. Explain the mechanism of process creation. (06 Marks)
- c. Explain the following commands with an example:
 i) Running jobs in background ii) Execute later. (08 Marks)
- 4 a. Explain the following environment variables with examples:
 i) SHELL ii) LOGNAME iii) PATH (06 Marks)
- b. Differentiate between hard link and soft link in unix with examples. (06 Marks)
- c. Explain the following commands with example:
 i) tail ii) paste iii) tr iv) pr (08 Marks)

PART – B

- 5 a. With suitable examples, explain the `grep` command and its various options. (08 Marks)
- b. Explain the line addressing and context addressing in `sed` with examples. (06 Marks)
- c. Explain the different ways of using test statements, with examples. (06 Marks)
- 6 a. What is shell programming? Write a shell program that will do the following tasks in order:
 Clear the screen
 Print the current directory
 Display current login users. (08 Marks)
- b. Explain the shell features of 'while' and 'for' with syntax. (08 Marks)
- c. What is the 'exit' status of a command and where is it stores? (04 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
 2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

- 7** a. What is AWK? Explain any three built in functions in AWK. (07 Marks)
- b. Write an AWK sequence to find HRA, DA and Netpay of an employee, where DA is 25% of basic, HRA is 50% basic and netpay is the sum of HRA, DA and basic pay. (07 Marks)
- c. Explain the list and arrays in PERL. (06 Marks)
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- 8** a. Explain the following string handling functions of PERL with examples:
i) length ii) index iii) substr iv) reverse (08 Marks)
- b. Write a PERL program to print numbers that are accepted from keyboard using while and array construct. (06 Marks)
- c. Explain the following in PERL with examples.
i) for each looping construct ii) join (06 Marks)

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