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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)
- 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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