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**Third Semester B.E. Degree Examination, June/July 2011**  
**UNIX and Shell Programming**

Max. Marks:100

Time: 3 hrs.

**Note: Answer any FIVE full questions.**

- 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 pathnames      ii) Internal and External commands. (08 Marks)
- 2 a. Give the significance of seven attributes of the `ls - l` command. (07 Marks)  
b. What is file permissions? Explain how to change basic file permission with an example. (07 Marks)  
c. Explain the different modes in which a Vi editor works. (06 Marks)
- 3 a. Explain the three standard files with respect to Unix operating system. (06 Marks)  
b. Explain the mechanism of process creation. (06 Marks)  
c. Explain the following commands with an example :  
i) Running jobs in Background (`&` and `nohup`)  
ii) Execute later (`at` and `batch`). (08 Marks)
- 4 a. What are Environment variables? Explain different environment variables available in Unix operating system. (06 Marks)  
b. What are the differences between Softlink and Hardlink? Give examples. (06 Marks)  
c. Write short notes on Find and Sort commands. (08 Marks)
- 5 a. Explain "grep" command with all options. (08 Marks)  
b. Explain BRE (Basic Regular Expression) character subset used for constructing regular expressions. (05 Marks)  
c. Give the syntax of a Sed command line and briefly explain each component of this line. (07 Marks)
- 6 a. Explain the use of `test` and `[ ]` to evaluate an expression in shell. (06 Marks)  
b. What is shell programming? Write a shell program to create a menu which displays the list of files, current date, process status and current users of the system. (08 Marks)  
c. Explain the shell features of "while" and "for" with syntax. (06 Marks)
- 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 50% of basic, HRA is 12% of basic and the 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 string handling function in PERL and also write a program to find the number of characters, words as well as to print the reverse of a given sentence. (08 Marks)  
b. What do the `Chop()` and `Split()` functions do? Explain. (06 Marks)  
c. Explain file handling in PERL. (06 Marks)

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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.

