

--	--	--	--	--	--	--	--	--	--

**Fourth Semester B.E. Degree Examination, June/July 2016**  
**UNIX and Shell Programming**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting  
atleast TWO questions from each part.**

**PART – A**

- 1 a. With neat diagram, explain architecture of UNIX operating system. (06 Marks)  
 b. With the help of examples, explain the following commands : (06 Marks)  
 i) apropos ii) whatis  
 c. Explain the following with suitable examples : (08 Marks)  
 i) absolute and relative pathnames  
 ii) internal and external commands.
- 2 a. Files current permissions are `rw -- w - r --` write `chmod` expressions required to change them for the following : (08 Marks)  
 i) `r -- r ---- x`  
 ii) `rwxrwx -- x`  
 iii) `r - x r - x r - x`  
 iv) `rwxrwxr --`  
 using both relative and absolute methods of assigning permissions. (06 Marks)  
 b. What are different modes of vi editor? Explain with a neat diagram. (06 Marks)  
 c. Write UNIX commands for the following : (06 Marks)  
 i) Find and replace all the occurrences of `unix` with `UNIX` in the text file after confirming the user (vi editor command).  
 ii) List all the files in `PWD` which are having exactly five characters in their filename and any number of characters in their extension  
 iii) To copy all files stored in `/home/vtu` with `.c`, `.cpp` and `.java` extensions to `progs` directory in current directory  
 iv) To delete all files containing `*` in their file name  
 v) To delete all files with three character extension except `.out` from current directory  
 vi) To display (list) contents of current directory and its subdirectories.
- 3 a. Explain 3 standard files supported by UNIX. Also give details about special files used for output redirection in UNIX. (08 Marks)  
 b. Explain mechanism of process creation. Also given details about process states and zombies. (08 Marks)  
 c. Explain following with examples : (04 Marks)  
 i) cron ii) HOME iii) PATH iv) MAIL.
- 4 a. i) Differentiate between hard link and symbolic link (08 Marks)  
 ii) Explain significance of permissions to directory.  
 b. What does `touch foo` command mean? Why `touch` command is important for the system administrator? (06 Marks)  
 c. Explain the following with example : (06 Marks)  
 i) `head` ii) `tail` iii) `cut`.

## PART – B

- 5 a. With the help of example explain grep command and list its options with their significance. (08 Marks)  
b. Explain line addressing and context addressing in sed with example. (06 Marks)  
c. Briefly explain interval regular expression and tagged regular expression. (06 Marks)
- 6 a. Explain shell features of while and for with syntax. (08 Marks)  
b. What is exit status of a command and where it is stored? And how it can be accessed? Give examples. (06 Marks)  
c. Write a shell code to accept a string from the terminal and display suitable message if it doesn't have at least 10 characters using : i) case ii) expr. (06 Marks)
- 7 a. What is AWK? Explain any three built in functions of AWK. (08 Marks)  
b. What are associative arrays? How they are implemented in AWK? (06 Marks)  
c. With syntax and examples, explain control flow statements in AWK. (06 Marks)
- 8 a. Explain any three string handling functions in Perl. (06 Marks)  
b. With suitable examples explain split and join functions in Perl. (06 Marks)  
c. Write a Perl program that prompts the user to input string and a number and prints the string those many times on different lines to standard output. (08 Marks)

\*\*\*\*\*