

Code : 1882

TYBCA (SEM –V) Examination March/April \* 2010  
October

TYBCA SEM-V Paper 502 Unix and Shell Programming (Subject)

\* \* \* \* a.m a.m

\_\_\_\_\_ day \_\_\_\_\_ Time \_\_\_\_\_ P.M \_\_\_\_\_ P.M

Time 3 Hours

Total Marks : 70

Instructions: (1) Figure on the right indicate marks  
(2) Take assumption when ever necessary

**Q: 1 Answer the following questions. (Attempt any 14) [14]**

1. Differentiate between absolute path and relative path.
2. Explain set commands of vi editor.
3. How can we suspend foreground and background job?
4. List the functions of kernel.
5. How command substitution differs from piping mechanism?  
Explain with an example.
6. Who can change the attributes of a file or directory? If yes then how?
7. What is PPID? Which process has PPID 1?
8. If following command is run from a shell script, who will be the parent and grandparent of all these processes?  
Cat fl | cut -fl | sort -r
9. Explain the purpose of sticky bit.
10. How will you forcibly remove a file to which you don't have write permission?
11. Differentiate between \$\* and @\$ with proper illustration.
12. What is the significance of following unix system variable.  
(i) HOME (ii) PS1
13. List process execution metacharacters of shell.
14. State the purpose of -n option with sed.
15. What will be the output of following code:  
A=`expr -5%-2` # command enclosed within back quote  
echo \$A
16. What is the use of test statement?

**Q: 2. (A) Explain following commands giving examples:  
(Any THREE)**

(i) diff (ii) at (iii) touch (iv) write (v) eval

[6]

**Q.2(B)** An integer or a floating-point number should be accepted from user. Write a menu-driven script for the following options.

- (i) convert decimal to binary number
- (ii) convert decimal to octal number
- (iii) convert decimal to hexadecimal number

Proper validation must be expected

[8]

**OR**

**Q.2(B) (1)** Write a script using awk utility to display file(s) contents in toggle-case. Assume that file(s) should be passed from command-line.

[5]

**(2)** Write a script that removes all empty files in current working directory. Appropriate data validation is expected.

[3]

**Q: 3. (A) Answer any THREE from the following**

[12]

1. Write a note on kernel architecture of Unix OS.
2. Write a note on different role played by shell during the program execution.
3. Explain booting sequences of Unix OS.
4. Explain pattern-matching features of grep utility.
5. Explain on-line communication commands.

**Q. 3(B)** Explain *tee* command with proper illustration.

[2]

**Q: 4. (A) Answer the following questions (Any 6).**

[6]

1. How can you identify the invisible characters in a file?
2. What is zombie State
3. What is daemons process? How can you display these processes?
4. What is the difference between screen editor and line editor?  
List out any two names of line and screen editor.
5. What is the purpose of /dev/null? Give proper illustration.
6. What does init do when a user logs out?
7. What superblock consist of .
8. How can you create subshell? What is the difference between login shell and current shell?

**(B) Write a command for the following. (Any 8)**

[8]

1. To display contents of top 3 largest files in a working directory.
2. To count number of words in lines 40 through 60 of file fl.txt.
3. Match all filenames not beginning with a dot(.).
4. Transfer recursively the ownership of all files in current directory to 'bca5'.
5. Copies all 6-character files in working directory to dir1 exist in working directory.
6. To move all files of working directory modified within the last 24-hours to mydir directory under your parent directory.
7. To display all processes run by user1 on terminal pts/1.  
Assume that user1 logged in from more than one terminal.
8. To display all files of current directory whose 1<sup>st</sup> character is not digit.
9. To delete all special characters from the file x1.
10. To display inode number of all files of current directory.

**Q: 5. (A) Answer the following questions (Any 4)**

[8]

1. Differentiate between system variables of awk utility FNR and NR.
2. What is regular expression? Write a regular expression that matches comment line of c programs.
3. Explain with an example insert (i) and append (a) commands of sed utility.
4. Explain different role of caret (^) in regular expression.
5. Explain with an example the purpose of BEGIN and END block of awk utility.
6. Explain array in awk utility.

**Q: (B) Write a command using grep or sed or awk utility**

(Any 6)

[6]

1. To display line number, no of characters and word in each line of file fl.
2. To display those lines of file fl that contains exactly 50-characters in it.
3. To replaces 'hello' with 'HELLO' in input file fin.sh and write those lines to output file fout.sh.
4. To extract all username and their home directory from /etc/passwd file.
5. Locate lines where the second and second last characters of the fl.sh are the same.
6. Display all files of working directory that contains 'hello' pattern in it.
7. To display all lines that contains pattern g\* in a line.