



**ENGINEERING & MANAGEMENT EXAMINATIONS, DECEMBER - 2008**  
**UNIX AND SHELL PROGRAMMING**  
**SEMESTER - 3**

Time : 3 Hours ]

[ Full Marks : 70

**GROUP - A**

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for the following :

10 × 1 = 10

i) Which command will show the Kernel version of Unix ?

- a) Kernel
- b) Kname
- c) Uname
- d) tty.

ii) The command for deleting a directory which is not empty is

- a) rmdir
- b) rm - r
- c) rm \*
- d) rm - rd.

iii) How many options are there in this command ?

ls - lut chap 1 chap 2

- a) 2
- b) 0
- c) 3
- d) 1.

iv) The & is used to

- a) make the job run faster
- b) run it in the background
- c) stop a job
- d) abort the process.

v) When we are executing a shell script the shell acts as

- a) an interpreter
- b) a compiler
- c) an operating system
- d) none of these.

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- vi) Your shell script has a name `ls`. If you execute `ls`
- a) your script would get executed
  - b) the `ls` command would get executed
  - c) whether script is executed or command is executed depends upon the value of `PATH`
  - d) both `ls` and the script would get executed one after another.

- vii) The shell metacharacter `$#` represents
- a) number of arguments supplied to the shell script
  - b) total number of files in the current directory
  - c) the number of users who have logged in
  - d) total number of processes running in the background.

- viii) What output will this command sequence produce ?
- Who | grep -c "^\$LOGNAME"
- a) count the users logged in
  - b) count of all users
  - c) count of users using the same username as the user executing the command
  - d) none of these.

- ix) To append `.c` to a variable `x`, you have to use
- a) `echo $x.c`
  - b) `echo $x".c"`
  - c) `echo ${x}.c`
  - d) any of these.

- x) To move to the end of a line, you have to use
- a) `$`
  - b) `e`
  - c) `E`
  - d) `^`



**GROUP - B**

**( Short Answer Type Questions )**

Answer any *three* of the following.

3 × 5 = 15

- 2. Is it possible that two files have same *i*-node number ? Justify.
- 3. What is a Zombie Process ? When does it occur ?
- 4. What do the following shell parameters stand for ?
  - i) \$#                      ii) \$\*                      iii) \$@
  - iv) \$?                      v) \$!
- 5. Is Unnix a multitasking OS ? Explain.
- 6. What is race condition ? What is a critical section ?

**GROUP - C**

**( Long Answer Type Questions )**

Answer any *three* of the following questions.

3 × 15 = 45

- 7. a) "UNIX is a multitasking multiuser operating system". Explain. 3
- b) Describe the layered architecture of UNIX operating system. What is its advantages ? 4
- c) What are the characteristics of UNIX file system ? 3
- d) Describe different kinds of files in UNIX. 3
- e) What is a shell ? 2
- 8. a) Explain the significance of file permissions for a directory. 3
- b) What is umask ? How can file permissions be defined with it ? 3
- c) Explain action arguments such as -exec, -ok, -print used with 'find' command. 3
- d) What is a filter in UNIX ?  
Which of the following are filters ?  
date, pg, ls, grep. 3
- e) Write down the applications of *chown* and *chgrp* commands. 3



- 9. a) What are the two types of processes in a UNIX system ? 2
- b) What is meant by the term 'swap space' as applied to memory management ? 2
- c) Explain the use of following UNIX commands giving examples where necessary : 3
  - i) ps
  - ii) top
  - iii) du.
- d) What is a daemon ? 2
- e) What is the advantage of executing a process in background ? 1
- f) How does *nice* command work in UNIX ? 3
- g) What does the *exit* command do ? 2
- 10. a) Write a shell script to rename all the files in the current directory that have uppercase names to lowercase names. 5
- b) How can you use the value of a shell variable in a *sed* command ? 1
- c) Explain internal and external commands in UNIX. 2
- d) Write a shell script that shows you its name and its process id number. 4
- e) What is the difference between *>* and *>>*. 3
- 11. a) Define subnet. 2
- b) What is the significance of *loopback address* ? 1
- c) Give the differences between *grep*, *egrep* and *fgrep* commands. 3
- d) What does *grep* "*^\\**" do ? Is the *\* really necessary ? 2
- e) A file contains examination records in the following format :

Name	Subject1	Subject2	Subject3	Subject4	Subject5
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—

Write a script using *awk* to arrange the records according to the total marks of all subjects in the descending order. 7

END