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 posible 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 opeating 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, 1s, 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