Name : ....

Roll No. : ....

Invigilator's Signature : ....

CS/BCA/SEM-5/BCA-502/2010-11

2010-11

UNIX AND SHELL PROGRAMMING

Time Allotted : 3 Hours   Full Marks : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following :

                                                    10 × 1 = 10

   i)   What does kill $! do ?

        a)   Kills all processes spawned by user

        b)   Kills all background processes

        c)   Kills the most recent background processs

        d)   Kills the oldest background process.

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

    a)   rmdir   b)   rm – r

    c)   rm*   d)   rm – rd.

iii)   To see the last access time of various files in a file system the command is

    a)   ls – 1u   b)   ls – 1

    c)   ls – lat   d)   ls – mt.

iv)   The command cal j 1997 would give the output as

    a)   the calendar of January, June and July 1997

    b)   only calendar of January 1997

    c)   an error

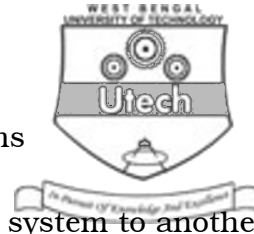   d)   none of these.

v)   Each entry in inode table is of size

    a)   64 kB   b)   32 kB

    c)   32 bytes   d)   64 bytes.

vi) The command cut – f 2, 8 – d " : " file 1 would output

   a)   the fields 2 to 8 from file 1 where delimiter between fields is :

   b)   the fields 2 to 8 from file 1 including the delimiter : between fields

   c)   the columns 2 to 8 from file 1 with : between each column

   d)   none of these.

vii) The UNIX command "a.out / &" runs the program a.out

   a)   with highest priority

   b)   in the background

   c)   only when no other process is running on the system

   d)   none of these.

viii) The hidden file in UNIX

   a)   has a special bit associated with the descriptor

   b)   has names starting with a dot

   c)   can be accessed only by the operating system kernel

   d)   none of these.

ix)   In UNIX, mounting a file system means

a)   copying all the files from one file system to another

b)   moving all the files from one file system to another

c)   loading a file system from backup medium like tape

d)   providing a link to the file system to be mounted so that it appears as a local sub-directory.

x) $? represents

a)   number of arguments specified in command line

b)   name of executed command

c)   exit status of last command

d)   none of these.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following.   3 × 5 = 15

2.   What are the similarities between thread and process ?

3.   What are the different kinds of threads ?

4.   What is the functionality of kernel in UNIX architecture ?

5. What does "bulk loading of a table" mean ? Indicate advantages and disadvantages of using these features.

6. Briefly explain three phases involved in process creation.
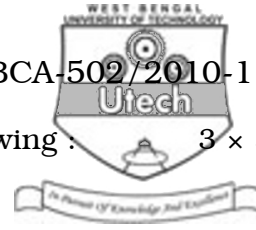
GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following.   3 × 15 = 45

7. Write the commands for the following :   5 × 3

   a) To list find the records of a file containing 10 different strings

   b) To convert a general file to a hidden file

   c) To select the lines that have exactly two characters using grep command.

   d) To find the 51st record of a file containing 100 records in unit.

   e) Used for temporary switch user.

8. a) How is a new process in Unix created ? What is the new process called ? Give the syntax of the corresponding system call. What operations are performed by the kernel for this system call ?

   b) What are file system quotas ?

   c) What is the special feature of the X window architecture ? What are X widgets ?   7 + 4 + 4

9. a) What are file access permissions ? How can you change the file access permissions ? Explain.

   b) What is the relationship between the priorities of kernel processes and user processes ? Can a user modify the priorities of kernel processes ?

   c) What are the main functions performed by Unix System Administrator ? 5 + 5 + 5

10. a) Write commands to do the following :

   i) Display the list of users currently logged in along with their count on the terminal.

   ii) Terminate the last background process without knowing its PID such that it cannot ignore the signal to terminate it.

   iii) Use the current working directory along with the user name as the prompt.

   iv) Count the number of files in the directory tree / usr /abc.

   v) Count the number of blank lines in a file.

   b) Write a crontab entry to execute run.sh script every 30 minutes on every Tuesday, Thursday and Saturday between 9 am to 5 pm. 10 + 5

11. Write short notes on any *three* of the following : 3 × 5

    a)   Directory in Unix

    b)   Domain Names Services (DNS)

    c)   Process Control Block (PCB)

    d)   Unix File system layout.

―――――――――