

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 - lu
- b) ls - l
- c) ls - lat
- d) ls - mt.

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

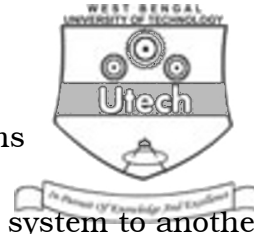
- a) the calendar of January, June and July 1997
- b) only calendar of January 1997
- c) an error
- d) none of these.

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.  $3 \times 5 = 15$

- 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**

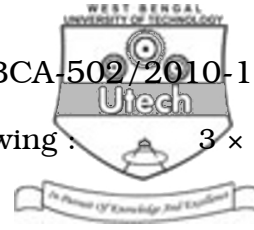
**( Long Answer Type Questions )**

Answer any *three* of the following.  $3 \times 15 = 45$

7. Write the commands for the following :  $5 \times 3$ 
  - 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.

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