Name :	Utech
Roll No. :	
Invigilator's Signature :	

CS/MCA/SEM-3/MCA-302/2012-13

2012

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 : $10 \times 1 = 10$
 - i) What is the binary prepresentation of the permission : rwxr-xrw-?
 - a) 656 b) 424
 - c) 756 d) 746.
 - ii) To change the user ID and the group ID of a file, use
 - a) chmode() b) umask()
 - c) chown() d) access().
 - iii) If you want to quit without saving current work you need to use
 - a) :q! b) :q
 - c) :wq d) :wx.

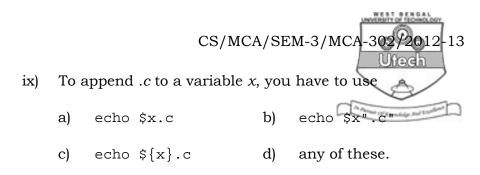
[Turn over

3128



- iv) The UNIX command rm -r project will
 - a) delete the file project from current directory
 - b) delete all the files from directory project
 - c) recursively delete the directory project and all its subdirectory
 - d) none of these.
- v) The UNIX command cp ch ? book
 - a) copies all files starting with ch to directory book
 - b) copies all files with three character names and with ch to directory book
 - c) compress whether file starting with ch exists in directory book
 - d) display error message can't copy multiple files.
- vi) To copy an entire directory structure, we need
 - a) cp s olddir newdir
 - b) cp -d olddir newdir
 - c) cp -o olddir newdir
 - d) cp -r olddir newdir.
- vii) UNIX allows the use of more than one command in one line by specifying the following symbol among the commands
 - a) : b) ;
 - c) | d) >.
- viii) What does the redirection symbol "\$<\$" do?
 - a) Redirects standard output
 - b) Redirects standard input
 - c) Adds output to the end of the file
 - d) None of these.

3128



x) The available disk space can be determined under UNIX using the command

a) dir	b)	du
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c) df d) file.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following $3 \times 5 = 15$

- 2. a) What is meant by command substitution ? Explain with the help of an example.
 - b) What is meant by daemon process ? Name any two daemon processes. 3+2
- 3. a) What do you mean by absolute pathname and relative pathname ?
 - b) Is it possible that two files have same *i*-node number ? Justify. 2 + 3
- 4. How is process created ? Mention briefly the role of the fork and exec system calls in process creation.
- 5. Write a shell script to check whether an integer is prime or not ?
- 6. What does the directory file contain ? What does cd do when used without argument ? What is the difference between who | tee user.lst | wc -1 and who | tee /dev/tty | wc-1 ?

[Turn over



 3×15

= 45

GROUP – C

(Long Answer Type Questions

Answer any *three* of the following.

- 7. a) What is *i*-node ? What is the purpose of it ? In what way a programmer can use *i*-node ?
 - b) What will be the output of the command cat foo foo foo ?
 - c) Explain the role of the set-user-id and sticky bit.
 - d) Write a shell script to print only those words of the file FILE, whose beginning and last character are same.

5 + 1 + 2 + 7

- 8. a) Write an awk script to find the frequency of words present in the text file MATTER. Print only those words whose frequency is 5 or more.
 - b) Write shell script to print given number in reverse order, for example, if number is 123 then it must printed as 321.
 8 + 7
- 9. a) Write a shell script to delete all files in root and its subdirectories having extension 'tmp', which have not been created or referred to in the last 15 days.
 - b) Explain the structure of UNIX file system. 7 + 8
- 10. A file named MARKS consists of name, Marks1, Marks2, Marks3 and Marks4 fields, separated by comma. Print the marks of those whose average marks are equal to or greater than 50%, in descending order of average marks, followed by alphabetical order of name in the following format :

Sl. No. Name Avg. Marks

Write the program (shell script or awk script) to accomplish the above task.

3128