

CS/MCA(N)/ODD/SEM-3/MCA-302/2019-20

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MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

Paper Code : MCA-302

PUID : 03150 (To be mentioned in the main answer script)

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 any ten of the following : 10 × 1 = 10

i) What is the binary representation of the permission : `rwxr-xrw-?`

- a) 656
- b) 424
- c) 756
- d) 746.

ii) If you want to quit without saving current work you need to use

- a) `:q!`
- b) `:q`
- c) `:wx`
- d) `:wx.`

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- iii) which of the following processes has the PID 1 ?
 - a) Kernel
 - b) UNIX
 - c) init
 - d) Shell.
- iv) Global file information about disk usage are stored in
 - a) Inode Block
 - b) Boot Block
 - c) Super Block
 - d) Data Block.
- v) The `&` command is used to
 - a) make the job run faster
 - b) run it in the background
 - c) stop a job
 - d) abort the process.
- vi) Regular expression not matching either of *a, b or c* is
 - a) `!|abc|`
 - b) `^|abc|`
 - c) `!|a|b|c|`
 - d) `[^abc|`.
- vii) the shell parameter `$!` represents
 - a) name of executed command
 - b) PID of current shell
 - c) exit status of last command
 - d) PID of last background job.
- viii) How to create a new file without opening it ?
 - a) `Less filename`
 - b) `Touch filename`
 - c) `Cat filename`
 - d) `More filename.`

```

ix) int main ( )
    {
    fork( ); fork( ); fork( ); fork( );
    printf("Hello");
    return 0;
    }

```

How many hello will print ?

- a) 4
- b) 10
- c) 16
- d) 15.

x) How many child processes will create in the above program ?

- a) 15
- b) 16
- c) 4
- d) 10.

xi) All the contents of a file are stored in

- a) Super block
- b) Boot block
- c) Data block
- d) Inode block.

GROUP - B
(Short Answer Type Questions)

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

2. Write a shell script which count the number of lines and words supplied at standard input.

3. Write the significance of the following UNIX commands :

- a) mount
- b) kill
- c) unmask
- d) nice
- e) su.

5 × 1

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

1 + 2 + 2

5. Distinguish between the following :

a) Internal command and external command

b) Absolute path and relative path.

2 × 2 ¹/₂

6. What are fork and exec system calls meant for ? How are they different ?

2 + 3

GROUP - C

(Long Answer Type Questions)

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

7. How can a user be added and deleted from a UNIX system ? Explain shutdown command elaborately. How can an ordinary user become a super user ? How can different files be searched in a UNIX system ? What is the job of user mask ? Where do we need to use hard link ? $4 + 3 + 2 + 2 + 2 + 2$

8. a) Write a shell script to generate all combinations of 3, 5 and 7 using for loop. <http://www.makaut.com>
- b) Explain the difference between while loop and until loop with suitable examples.
- c) What command would give user read, write and execute permission, group members execute permission and give others only read permission for a file ? Use both relative and octal notations.
- d) What do you understand by filter ? $5 + 4 + 4 + 2$

9. a) What is quoting ? What are three quote tokens ?
- b) What is regular expression ? List out the components of it.
- c) What are cgrep and fgrep ? Give examples.
- d) Differentiate between line editor and screen editor.

$(2 + 2) + 4 + 4 + 3$

10. a) Briefly explain the features of Unix operating system.
- b) What is the difference between the following vi commands ?
- i) :w
- ii) :q!
- iii) :wq
- iv) zz.
- c) What do you mean by link of a file ? What is symbolic link ? Why is it needed ? $5 + 4 + 2 + 2 + 2$

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

- a) Telenet
- b) awk
- c) gzip and gunzip
- d) Daemom Process
- e) Unit Boot System.



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