



**MAULANA ABUL KALAM AZAD UNIVERSITY OF
TECHNOLOGY, WEST BENGAL**

Paper Code : BCA-502

PUID : 05145 (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) Which part of the UNIX operating system interacts with the hardware ?
 - a) Kernel
 - b) Shell
 - c) Vi editor
 - d) Application program.
 - ii) What is the PID of the first process that is set up when the system is booted ?
 - a) 1
 - b) 0
 - c) any
 - d) 2.
 - iii) Programs and process are synonymous.
 - a) True
 - b) False.
 - iv) Which command is used for preparing a file for printing ?
 - a) cd
 - b) cat
 - c) print
 - d) pr

- v) pr command adds lines of margin at the top and bottom.
- | | |
|------|-------|
| a) 5 | b) 4 |
| c) 2 | d) 1. |
- vi) Test statement cannot
- | |
|-------------------------------|
| a) compare two numbers |
| b) compare two strings |
| c) compare two files |
| d) check a file's attributes. |
- vii) Which of the following keywords are used in while loop ?
- | | |
|---------|-----------------|
| a) do | b) done |
| c) then | d) do and done. |
- viii) Which of the following expression is a correct wildcard pattern if we want an expression in which the last character is not numeric ?
- | | |
|-------------|---------------|
| a) * [!0] | b) * 0-9 |
| c) [0-9] | d) * [!0-9] |
- ix) What is a directory file ?
- | |
|---|
| a) A directory containing data |
| b) A directory containing details of the files and subdirectories it contains |
| c) A directory contains files |
| d) A directory containing data and files. |
- x) The most common file type is
- | | |
|------------------|-------------------|
| a) Ordinary file | b) Database file |
| c) Data file | d) None of these. |
- xi) Each entry of directory file has component(s) namely
- | |
|------------------------------|
| a) filename |
| b) inode number |
| c) filename and inode number |
| d) file size. |
- xii) Which of the following is a feature of UNIX ?
- | | |
|-----------------|------------------|
| a) Multitasking | b) Multiuser |
| c) Portability | d) All of these. |

GROUP - B**(Short Answer Type Questions)**Answer any *three* of the following. $3 \times 5 = 15$

2. Briefly explain the `tty` command in UNIX.
3. Briefly explain the following commands : 3 + 2
 - i) `cp` <http://www.makaut.com>
 - ii) `cat`.
4. What do mean by UNIX process life cycle ? Give a neat diagram of the UNIX process life cycle. 3 + 2
5. Write a shell script (i) to show all files having extension `.sh`, (ii) to show all files whose names are 3 characters long, and (iii) to show all files whose names are beginning with letters `a`, `b`, `c`. $1\frac{1}{2} + 1\frac{1}{2} + 2$
6. a) What are the significance of the following environment variables ? 3
HOME, PATH, USER.
- b) Briefly explain the use of aliases in UNIX. 2

GROUP - C**(Long Answer Type Questions)**Answer any *three* of the following. $3 \times 15 = 45$

7. a) What will be the output of the following ? 7 × 2
 - i) `ls *.txt` ii) `mv * ../test`
 - iii) `cp foo foo*` iv) `cp ?????? test`
 - v) `lp note[0-1 || 0-9]` vi) `rm *.[!t] [!x] [!l]`
 - vii) `cp-r/home/user/{c,java}`
- b) What is character class in UNIX ? 1

8. a) A file (file 1) contains the following four patterns :
 Agarwal, agrawal, Aggarwal and aggarwal.
 How to search all of them using BRE character subset ? How to search metacharacters in a file ?
 3 + 2
- b) Briefly explain grep-E with suitable examples. 5
- c) Write the commands to do the following using grep :
- Search the string "HELLO" from the file file 1 if it occurs at the very beginning of a line,
 - Search the string "HELLO" from the file file 1 if it occurs at the end of a line,
 - Search the string "HELLO" from the file file 1 if it is the only word in the line. 2 + 2 + 1
9. a) Write a shell script, which receives two filenames as arguments, checks whether the two files contents are the same or not and if they are same then the second file is deleted. 7
- b) Write a shell script to generate all combinations of 1, 2 and 3. 8
10. a) Briefly explain Kernel and Shell in UNIX. 3 + 3
- ✓ b) How to display the system date in UNIX ? Give the command to display the present month and month name. Give the command to display the date in mm/dd/yy format. Briefly explain with suitable example the use of echo command in UNIX.
 2 + 2 + 2 + 3
- ✓ 11. How to list the file attributes in UNIX ? What are the attributes being listed ? What do you mean by hard link and soft link ?
 1 + 7 + 4 + 3