

AMIETE – CS/IT (New Scheme)

Time: 3 Hours

JUNE 2015

Max. Marks: 100

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE: There are 9 Questions in all.

- Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.
- The answer sheet for the Q.1 will be collected by the invigilator after 45 minutes of the commencement of the examination.
- Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.
- Any required data not explicitly given, may be suitably assumed and stated.

Q.1 Choose the correct or the best alternative in the following: (2×10)

- a. The command used to display a specific file is:
- (A) mkdir (B) ls
(C) cat filename (D) cp filename
- b. Which command is used to change protection modes of files starting with the string 'emp' and ending with 1, 2 or 3?
- (A) chmod u+x emp[1-3] (B) chmod 777 emp*
(C) chmod u+r ??? emp (D) chmod 222 emp?
- c. Which directory contains device special files?
- (A) /etc/devs (B) /etc/dev
(C) /root/bin (D) /dev
- d. What will be the output of following command?
- \$ echo "The process id is" \$\$\$\$
- (A) The process id is \$\$ (B) The process id is \$<pid>\$<pid>
(C) The process id is <pid><pid> (D) The process id is \$\$\$\$
- e. What would be the current working directory at the end of the following command sequence?
- \$ pwd
/home/user1/proj
\$ cd src
\$ cd generic
\$ cd .
\$ pwd
- (A) /home/user1/proj (B) /home/user1/proj/src
(C) /home/user1 (D) /home/user1/proj/src/generic

- f. How do you print the lines between 5 and 10, both inclusive?
- (A) `cat filename | head | tail -6` (B) `cat filename | head | tail -5`
(C) `cat filename | tail +5 | head` (D) `cat filename | tail -5 | head -10`
- g. The statement `z = 'expr 5 / 2'` would store which of the following values in `z`?
- (A) 0 (B) 1
(C) 2 (D) 2.5
- h. What is the output of the following code?
- ```
os=Unix
echo 1.$os 2."$os" 3.'$os' 4.$os
```
- (A) 1.Unix 2.Unix 3.Unix 4.Unix      (B) 1.Unix 2.Unix 3.\$os 4.Unix  
(C) 1.Unix 2.Unix 3.Unix 4.\$os      (D) 1.Unix 2.\$os 3.\$os 4.\$os
- i. Which of these commands will set the permissions on file 'textfile' to read and write for the owner, read for the group, and nothing for everyone else?
- (A) `chmod 046 textfile`      (B) `chmod 640 textfile`  
(C) `chmod 310 textfile`      (D) `chmod rw r nil textfile`
- j. Which one of the following is not true?
- (A) In typical awk program, all input is read either from standard input or specified files  
(B) awk language divides its input into records and fields  
(C) awk reads an input record and the record is automatically separated by the interpreter into pieces called "fields"  
(D) The number of fields need to be a constant

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**Answer any FIVE Questions out of EIGHT Questions.**  
**Each question carries 16 marks.**

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- Q.2** a. What is a pager? Name the two standard pagers used by *man*. (4)
- b. What is difference between an argument and an option? Explain with example. (4)
- c. How will you select from a file (i) lines 3 to 10      (ii) all but the last line. (4)
- d. What are pipes in Unix? Give one example. (4)
- Q.3** a. What attributes of files are displayed when we execute `ls -l` command? Briefly explain about each. (8)
- b. How do you substitute for a pattern in vi editor? Explain with example. (4+4)

- Q.4** a. You want to concatenate two files, *abc* and *xyz*, but also insert some text after *abc* and before *xyz* from the terminal. How will you do this? (4)
- b. What are three distinct phases in the creation of a process? Explain it. (2×3)
- c. What do these commands do? (i) `grep a b c` (ii) `grep <HTML> foo` (3+3)
- Q.5** a. What is 'grep' filter? Explain with example. (3+3)
- b. How do you locate lines containing these patterns? (6)  
(i) `saxena` or `saksena` (ii) `rajiv`, `rajeeb` or `Rajeev`  
(iii) `SIGSTOP` or `SIGTSTP`
- c. Write **awk** command to locate lines longer than 100 and smaller than 150 characters in a file. (4)
- Q.6** a. If `rmdir c_progs` fails, what could be the possible reasons? (4)
- b. How will you copy a directory structure `bar1` to `bar2`? Does it make any difference if `bar2` exists? (4)
- c. Write a shell script to check whether a given number is prime or not. (8)
- Q.7** a. How is **chown** different from **chgrp** when it comes to renouncing ownership? (4)
- b. Name three ways how to exit from a *vi* session after saving your work. (4)
- c. Explain the principal components: Kernel and Shell, of the UNIX operating system. (8)
- Q.8** a. You repeatedly have to toggle between `/user/include` and `/user/lib`. How do you use a shortcut to do that repeatedly? (4)
- b. Write a shell program to count number of words, characters, white spaces and special symbols of a given text. (12)
- Q.9** a. Write **perl** script to ask from user repeatedly to enter a number, and when the user enters 0, print the total of all numbers entered so far. (8)
- b. Write **perl** script that prompts a user to input a string and a number, and prints the string that many times, with each string on a separate line. (8)