ROLL NO. _____

Code: AC109/AT109   **Subject: UNIX & SHELL PROGRMMING**

AMIETE – CS/IT (New Scheme)

Time: 3 Hours   **DECEMBER 2016**   **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. Which command is used to display the characteristics of a process?
  (A) pid   **(B)** ps
  (C) du   **(D)** au

b. Which symbol will be used with grep command to match the pattern pat at the beginning of a line?
  (A) ^pat   **(B)** pat$
  (C) Spat   **(D)** pat^

c. Which command is used to select those lines that ends with a digit 2 in the file empl.lst
  (A) grep "^2" empl.lst   **(B)** grep "2..$" empl.lst
  (C) grep "7^" empl.lst   **(D)** grep "2$" empl.lst

d. Which of the following command is used to update access and modification times of a file?
  (A) grep   **(B)** wc
  (C) touch   **(D)** cat

e. Which of the following command is used to go to home directory?
  (A) cd..   **(B)** cd
  (C) cd \   **(D)** cd $ HOME

f. Which command is used to remove the read permission of the file 'note' from both the group and others?
  (A) chmod go-x note   **(B)** chmod go+rw note
  (C) chmod go+r note   **(D)** chmod go-r

g. Which of the following UNIX tools, receives input only from the standard input?
(A) awk   **(B)** grep
(C) sed   **(D)** tr

h. Which of the following are not a filter?
(A) date   **(B)** sort
(C) cat   **(D)** grep

i. Choose the octal representation of the permission r - - w - - x
(A) 421   **(B)** 567
(C) 623   **(D)** None of these

j. By default, file reading, chopping and pattern matching operate on
(A) $ **(B)** $_
(C) @_   **(D)** None of these

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

Q.2   a. List the features of Unix.   **(4)**

b. What is the purpose of cat command? Discuss its any two valid flags.   **(4)**

c. Distinguish between Absolute pathname and Relative pathname through an example.   **(4)**

d. List and discuss any six ls command options.   **(4)**

Q.3   a. Briefly discuss giving examples, the purpose of chmod command.   **(8)**

b. Give three ways to exit from vi session after saving your work.   **(4)**

c. How do you combine four lines into a single line in vi editor?   **(4)**

Q.4   a. What are the three sources of standard input and standard output?   **(4)**

b. Using UNIX commands how do you compare the efficiency of any two programs.   **(4)**

c. List any five different job control commands.   **(4)**

d. Name the commands that do not create a new process.   **(4)**

Q.5   a. What is inode number? Where it is stored? Briefly, explain the information
          stored in each entry of inode table.   **(2+2+2)**

        b. Brief three time stamps associated in a UNIX file. Also define the purpose of
            touch command.   **(3+3)**

        c. How do you translate characters using tr filter. Explain with example?   **(2+2)**

Q.6   a. Write the regular expression to search the following patterns: **(6)**
            (i) SUPERBLOCK OR SUPERCLOCK
            (ii) saxena or saksena
            (iii) rajiv , rajeeb or rajeev

        b. Explain the purpose of following commands: **(2+2)**
            (i)   grep x y z
            (ii) grep "^*" Why \ is used?

        c. Write a Korn or Bash alias which lists only directories in the current directory. **(3)**

        d. What is the difference between wild card and a regular expression?   **(3)**

Q.7   a. Write a shell script to generate fibbonaci series.   **(8)**

        b. Explain through an example the syntax of *for* and *while* loop in shell
            programming.   **(4+4)**

Q.8   a. Using awk command, write a while loop to center the output of the command
            echo "GOOD MORNING" , where the page width is 55 characters.   **(6)**

        b. List five built-in variables and five built-in functions used in awk.   **(5+5)**

Q.9   a. Write a perl script to convert a decimal number to binary.   **(8)**

        b. Write a perl script to compute the total numbers input by the user till the user
            enters '0'   **(8)**