

**AMIETE – CS/IT (New Scheme)**

Time: 3 Hours

**June 2019**

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. To run the script, we should make it executable first by using \_\_\_\_\_  
(A) chmod +x (B) chmod +r  
(C) chmod +w (D) chmod +rwx
- b. To spawn a child of our own choice for running the script, we can use \_\_\_\_ command.  
(A) ps (B) pr  
(C) sh (D) \$\$
- c. Which of the following is/are true about Shell?  
(A) Shell is a multi-faceted program  
(B) Shell is a command interpreter  
(C) Shell provides us with an environment to work in  
(D) Shell is a multi-faceted, command interpreter and provides an environment to work in
- d. Which command would be most suitable to remove the following files?  
dirx diry dirz dirzw  
(A) rm dir? (B) rm dirx diry dirz dirzw  
(C) rm \* (D) rm dir\*
- e. Which of the following command will list all the hidden filenames in our directory having at least three characters after the dot (.)?  
(A) ls (B) ls -a  
(C) ls .???\* (D) ls \*
- f. Which one of the following command is used for searching for a pattern in one or more file(s)?  
(A) cd (B) cp  
(C) paste (D) grep

- g. Which command is used for counting words, lines and characters in a file?  
(A) diff (B) count  
(C) man (D) wc
- h. How many types of modes are used by vi editor?  
(A) 2 (B) 4  
(C) 3 (D) 1
- i. What is the default mode of vi editor?  
(A) Command mode (B) Input mode  
(C) Ex mode (D) Insert mode
- j. For pattern-matching, awk uses regular expressions in \_\_\_\_ style.  
(A) sed (B) grep  
(C) perl (D) print

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Answer any FIVE Questions out of EIGHT Questions.

Each question carries 16 marks.

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- Q.2** a. Explain role of Kernel and Shell of the UNIX operating system. (6)
- b. Explain the concept of Parent-Child relationship of Unix file system. (6)
- c. Will the command “cp foo bar” work if (4)  
(i) foo is an ordinary file bar is a directory?  
(ii) both foo and bar are directories?
- Q.3** a. Explain different types of modes of vi editor and also explain how you can switch from one mode to another? (6)
- b. How do you change permissions under Unix? Explain with suitable examples. (6)
- c. Explain briefly the significance of the first four fields of the ls -l output. (4)
- Q.4** a. Explain the output of the following commands. (6)  
i) \$ cat >file1 // if file1 contains data  
ii) \$ cat < file3 >> file1  
iii) \$ ps -e
- b. What is the ZOMBIE state of the process? Explain the mechanism of process creation in UNIX. (6)
- c. Explain the difference between an interactive and non interactive shell (4)
- Q.5** a. What are hard links and soft links? Explain with example. (4)

- b. Discuss the filters *tail*, *paste* and *sort* with suitable examples. (6)
- c. Explain the output of the following commands. (6)
- (i) \$ ls -l | cut -c1-10 >file4
- (ii) \$ who | tee file5
- Q.6** a. Explain the use of *grep* command with suitable example. (4)
- b. Explain the difference between wild card and a regular expression in detail. (6)
- c. What is *sed* command? Discuss the addressing mechanisms of *sed* command. (6)
- Q.7** a. What do you understand by a shell script? Write a shell script to print the calendar of the current month. (8)
- b. What do you understand by command line arguments? What is the significance of the positional parameter *\$\** and *\$#*. Write a shell script that accepts a filename as command line argument and display the contents of this file on computer screen. (8)
- Q.8** a. Explain the working of *awk* filter. Discuss *FS* and *OFS* built-in-variable of *awk* filter in brief. (8)
- b. Explain with an example how *if* statement can be used in an *awk* command? (4)
- c. What is the difference between *print* and *print \$0*? (4)
- Q.9** a. Write a perl script that converts decimal number to binary using *foreach* loop. (8)
- b. Explain the following with suitable examples (8)
- (i) *chop* Function
- (ii) *substr* String Handling Function