

AMIETE – CS/IT (Current & New Scheme)

Time: 3 Hours

June 2018

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)

- Which of the following OS is not based on Linux?
(A) Ubuntu (B) Redhat
(C) Cent OS (D) BSD
- In linux everything is stored as a _____
(A) file (B) Directory
(C) executables (D) None of these
- Which of the following are not system calls ?
(A) chmod (B) open
(C) lseek (D) getc
- Which system call can be used by a user process to lock a memory so that it cannot be swapped out ?
(A) Memory files() (B) memlock()
(C) Pipe() (D) Active memory regions
- Which of the following features of UNIX may be used for inter process communication ?
(A) Signals (B) Pipes
(C) Semaphore (D) All of these
- Which command is used to check file system usage in a system ?
(A) mount (B) df
(C) du (D) dd
- The connection between the device file and device driver is based on the
(A) Name of device file (B) Number of device file
(C) Name & number of device file. (D) None of these

Code: AC72/AT72/AC117/AT117

Subject: LINUX INTERNALS

- h. Which is not a valid file type in LINUX ?
 (A) Socket (B) FIFO
 (C) Softlink (D) Inode
- i. The kernel identifies the driver with its
 (A) Module (B) Major Number
 (C) Device file (D) None of these
- j. What command is used with vi editor to replace text from cursor to right ?
 (A) S (B) R
 (C) s (D) None of these

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

- Q.2** a. Explain the use of Process Table? "Table Structure process has a dynamic structure" comment on restrictions on number of tasks. (8)
 b. Explain the working of LILO. (8)
- Q.3** a. How the dynamic memory management is accomplished in LINUX? Discuss with suitable examples. (8)
 b. Explain the meaning of the system call nice. (8)
- Q.4** a. Describe the evolution of virtual memory in LINUX. (8)
 b. Describe the purpose of virtual memory areas. What are the types of data structures used to create virtual memory areas? (8)
- Q.5** a. How the data is exchanged using communication via file mechanism? Discuss the two variants of locking entire files. (8)
 b. What is socket programming? Write down the programming syntax of socket descriptor, bind() function and connect() function. (8)
- Q.6** a. Discuss implementations of PROC file system. (8)
 b. Explain which data structure is used to administer Ext2 file system. (8)
- Q.7** a. What is a DMA controller? Explain the various transfer mode of DMA controller. (8)
 b. How many broad types of devices are allowed in LINUX? Describe them. (8)
- Q.8** a. Describe the layer model of the network implementation. (8)
 b. Write short notes on the following: (4×2)
 (i) TCP (ii) Ethernet
- Q.9** a. Explain the working of PCMCIA card manager. Also, discuss the functions of PCMCIA card manager. (8)
 b. Draw a diagram depicting the Daemon for dynamic loading and unloading of modules. (8)