

**AMIETE – CS/IT (Current & New Scheme)**

Time: 3 Hours

**DECEMBER 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)**

- Lp0 device file is used to access?  
(A) Tape drive (B) Mouse  
(C) Floppy drive (D) Printer
- Which of the following function is not available in UDP socket programming:  
(A) accept( ) (B) bind( )  
(C) socket( ) (D) close( )
- To find out a file's inode number, use this option on the "ls" command.  
(A) -inode (B) -i  
(C) -num (D) -in
- Files are held on block devices, which can process requests to read or write blocks of data. Which of the following combination specifies the valid block sizes for any given device?  
(A) 512, 1024, 2048, 4096, 8192 (B) 128, 512, 1024, 2048  
(C) 512, 1024, 2048, 4096 (D) 64, 128, 512, 1024, 2048
- What command is used with vi editor to delete a single character?  
(A) z (B) y  
(C) a (D) x
- Which command is used to check file system usage in a system?  
(A) mount (B) du  
(C) df (D) dd
- Binary directory contains  
(A) Special pseudofiles (B) Executable files  
(C) Library files (D) System log files
- What protocol allows a user to retrieve her/his mail from the mail server to her/his mail reader?  
(A) FTP (B) POP3  
(C) Both (A) & (B) (D) None of these

Code: AC72/AT72/AC117/AT117

Subject: LINUX INTERNALS

- i. The interrupt routines become active when the hardware signals an exception condition, which may be new characters input from the keyboard or the clock generator issuing a signal everyz  
 (A) milliseconds (B) 10 milliseconds  
 (C) 100 milliseconds (D) None of these
- j. *gdb* is the name for:  
 (A) Garbage Data Base (B) Get data byte  
 (C) Global data bin (D) Debugger

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

- Q.2** a. Explain the main characteristics of Linux. (8)  
 b. Explain sequence of steps to compile Kernel. (8)
- Q.3** a. Differentiate between hardware interrupts & software interrupts. (8)  
 b. What is micro kernel? What is the main advantage and drawback of using micro kernel architecture? (8)
- Q.4** a. Describe the purpose of virtual memory areas. What are the types of data structures used to create virtual memory areas? (8)  
 b. Describe the process of “Converting the Linear address into a physical address” through a diagram. (8)
- Q.5** a. Show the implementation of synchronization in the LINUX kernel. (8)  
 b. Explain *ipcs* and *ipcrm* commands with the help of an example. (8)
- Q.6** a. Draw the basic schematic structure of a UNIX file system and discuss the basic arrangement of a typical UNIX inode table. (8)  
 b. Describe the structure of the ext2 File System. (8)
- Q.7** a. What is a device driver and what special attention must be taken while implementing a device driver? (8)  
 b. Explain in detail DMA operation with the help of example. (8)
- Q.8** a. Explain flags of the network devices. (6)  
 b. Describe the layer model of the network implementation. (10)
- Q.9** a. What are modules? Describe how data mapping takes place between modules. (8)  
 b. Explain with the help of a diagram depicting the Daemon for dynamic loading and unloading of modules. (8)