

**AMIETE – CS/IT**

Time: 3 Hours

**DECEMBER 2013**

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. What command is used to count the total number of lines, words, and characters contained in a file?

- (A) countw (B) wcount  
(C) wc (D) None of these

b. Find the Incorrect statement about Memory symmetry?

- (A) All processor share the same memory.  
(B) All physical addresses are same.  
(C) All processors execute the same operating system.  
(D) Data and applications are not visible to all processors.

c. What hardware architectures are not supported by Ret Hat?

- (A) SPARC (B) IBM-compatible  
(C) Alpha (D) Macintosh

d. What file specifies the order in which to use specified name services?

- (A) /etc/services (B) /etc/nsorder  
(C) /etc/nsswitch.conf (D) /etc/hosts

e. How many primary partitions can exist on one drive?

- (A) 16 (B) 4  
(C) 2 (D) 1

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- f. What command is used with vi editor to replace text from cursor to right
- (A) S (B) s  
(C) R (D) None of these
- g. What command do you use to create Linux file systems?
- (A) fdisk (B) mkfs  
(C) fsck (D) None of these
- h. Which of the following is not a communication command?
- (A) grep (B) mail  
(C) mesg (D) write
- i. What command is used to display the characteristics of a process?
- (A) au (B) ps  
(C) du (D) pid
- j. What protocol allow a user to retrieve her/his mail from the mail server to her/his mail reader?
- (A) POP3 (B) FTP  
(C) Both (A) & (B) (D) None of these

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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 the main characteristics of Linux. (12)  
b. What are additional configuration facilities? (4)
- Q.3** a. Draw a diagram showing family relationships of processes. (8)  
b. What are hardware interrupts? How they are used? (8)
- Q.4** a. Explain how paging is implemented in Linux. (12)  
b. Explain the four LRU lists. (4)
- Q.5** a. What are the types of IPC supported by Linux? (10)  
b. How is communication via files is performed? (6)
- Q.6** a. Draw a diagram for the structure of a UNIX inode. (8)

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- b. Explain the two algorithms to limit the fragmentation of files. (8)
- Q.7** a. What is the concept of Polling and Interrupts? (8)
- b. What are the device drivers? What role does Operating System play for the same? (8)
- Q.8** a. Explain the layer structure of a network. (10)
- b. Explain flags of the network devices. (6)
- Q.9** a. What are modules? What can be implemented in modules? (8)
- b. What is the need for coding Atomic Operations in the header file `asm / atomic.h`? (8)