

ALCCS - NEW SCHEME

Time: 3 Hours

AUGUST 2012

Max. Marks: 100

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE:

- Question 1 is compulsory and carries 28 marks. Answer any FOUR questions from the rest. Marks are indicated against each question.
- Parts of a question should be answered at the same place.

- Q.1** a. How does the distinction between kernel mode and user-mode function as a rudimentary form of protection (security) system?
- b. What is the difference between Multiprogramming and Multitasking operating system?
- c. Explain CPU Scheduling criteria.
- d. How deadlock can be characterized?
- e. What are the various types of fragmentation?
- f. What are the various operations on directories? Explain two level directory structures.
- g. Explain any four program threats. (7 × 4)
- Q.2** a. What do you mean by Parallel (Multiprocessor) System? What are its main types? Explain. (9)
- b. What are virtual machines? Explain their model with functioning? Also discuss its advantages and disadvantages. (9)
- Q.3** a. What is inter-process communication? How it is implemented? (9)
- b. What is Bounded Buffer problem? Discuss briefly with the help of Producer and Consumer Process. (9)
- Q.4** a. What is contiguous memory allocation? How will you solve the dynamic storage allocation problem? (9)
- b. Explain Segmentation with Paging taking case of Intel 386. (9)

Code: CT31**Subject: OPERATING SYSTEM**

- Q.5** a. What is thrashing? Explain the concept of Working set Window with the help of example. (9)
- b. What is SCAN algorithm for disk scheduling? (9)
- Q.6** a. State three advantages of placing functionality in a device controller rather than in the kernel. State three disadvantages. (9)
- b. How security can be achieved using Authentication? Explain MAC (Message Authenticate Code). (9)
- Q.7** a. What is the use of Access Matrix to protect the resources? Explain its implementation. (9)
- b. The benefits of multithreaded programming can be broken down into four major categories. Discuss them briefly. (9)