

ALCCS – OLD SCHEME

Time: 3 Hours

FEBRUARY 2013

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.

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- Q.1** a. What is an operating system? What are the services provided by operating system?
 b. Differentiate between Buffering and Spooling.
 c. What is thread? How thread is different from a process?
 d. Differentiate between preemptive and non preemptive scheduling.
 e. What is semaphore? Explain its use in inter process communication?
 f. What are the four main reasons for building distributed systems?
 g. How the process management is performed in the UNIX OS. (7×4)
- Q.2** a. State different scheduling criteria that must be kept in mind while choosing different scheduling algorithms. (5)
 b. List the action taken by event handler when process makes an I/O request. (4)
 c. Discuss about the UNIX file system. (9)
- Q.3** a. When do page fault occurs? Describe the actions taken by the operating system when a page fault occurs. (9)
 b. What is the main difference between deadlock and starvation? Suppose that a system is in an unsafe state. Show that it is possible for the processes to complete their execution with entering deadlock state. (9)
- Q.4** a. Write Short note on the following:
 (i) Overlay (ii) Thrashing (2×4.5)
- b. Describe the segmented paging scheme of memory management and the hardware required to support the system. (9)

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- Q.5** a. Discuss the various attributes of a file? What are the methods that help in accessing the information stored in a file? Discuss them briefly? **(3+6)**
- b. What do you mean by critical section problem? Using semaphores, write a solution to readers and writers problem that gives priority to readers. **(2+7)**
- Q.6** a. What is a process? Explain different states of a process with the help of state diagram. **(9)**
- b. What is the difference between computation migration and process migration? Which is easier to implement, and why? **(5+4)**
- Q.7** a. Explain the following statements about Operating System:-
- (i) "The operating system as an extended machine"
- (ii) "The operating system as a resource manager" **(2×4.5)**
- b. Discuss the differences among following:
- (i) Multiprogramming and Multitasking
- (ii) Parallel system and Distributed system **(2×4.5)**