DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
ANNA UNIVERSITY :: CHENNAI - 600 025

B.E. [EEE] IV Semester - Full-Time :: Nov. / Dec. 2012
EE 9029 - OPERATING SYSTEMS

Time: 3 Hrs. **Max. Marks: 100**

Answer ALL Questions

Part - A (10 x 2 = 20)

1. What are the three main purposes of an operating system?
2. What is the purpose of the command interpreter?
3. Describe the differences among short-term, medium-term, and long-term scheduling.
4. List three examples of deadlocks that are not related to a computer-system.
5. Why are page sizes always powers of 2?
6. List four ways a systems might provide for users to protect their files against other users.
7. Describe three circumstances under which blocking I/O should be used.
8. Describe the three most important aspects of tertiary-storage performance
9. Define 'Cryptography'.
10. What do you mean by Access control matrix? State the objects involved in the same.

Part - B (5 x 16 = 80)

11. i) Write a note on Digital immune system. [8]
    ii) Explain how passwords are protected in Unix. [8]

12. a] i) Discuss hardware protection in detail. [16]

    Or

    b] i) Explain the categories of system programs. [6]
    ii) List and explain the services provided by operating systems. [10]

13. a] i) Explain criterias suggested for comparing scheduling algorithms. [5]
    ii) Expand and explain the following scheduling algorithms: FCFS, SJF and SRTF. [11]

    Or

    b] i) Discuss the necessary conditions for the occurrence of a deadlock. [6]
    ii) What are the data structures used to implement Banker's algorithm? [6]
    ii) Give the algorithm for finding out whether or not a system is in a safe state or not. [4]

14. a] i) Define paging. What is the need for the same? [4]
    ii) Explain FIFO and LRU Page replacement policies. [12]

    Or

    b] i) What the operating system must do for the six basic file operations. [6]
    ii) Explain Sequential, Direct and Indexed access methods for files. [10]

15. a] i) How to choose the best among the disk scheduling algorithms? [4]
    ii) Explain FCFS, SSTF and SCAN disk scheduling algorithms. [12]

    Or

    b] i) What are the principles to be employed to improve I/O efficiency? [6]
    ii) With a neat diagram describe the typical lifecycle of a blocking read request. [10]

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