MCA DEGREE IV SEMESTER EXAMINATION APRIL 2013

CAS 2401 OPERATING SYSTEM

Time : 3 Hours   Maximum Marks : 50

PART A
(Answer *ALL* questions)

(15 x 2 = 30)

I. (a) What are system calls? How a system call can be used?
    (b) Explain the different states associated with a process with a diagram.
    (c) What are the benefits of multithreaded programming?

II. (a) Define semaphore and explain the operations associated with semaphore.
    (b) Explain monitors.
    (c) Briefly explain atomic transactions.

III. (a) How demand paged memory management is carried out?
     (b) What do you mean by thrashing? How to prevent thrashing?
     (c) Explain file attributes.

IV. (a) Explain how swapspace is managed.
    (b) Explain buffering in the context of I/O scheduling.
    (c) Explain Direct Memory Access (DMA).

V. (a) What are the goals of protection?
    (b) List out the security violations that may occur in computer systems.
    (c) How intrusion detection is carried out?

PART B

(5 x 4 = 20)

VI. A. Explain the different operating system structures.
         OR
     B. Explain the different multithreading models.

VII. A. Discuss Priority and Round Robin scheduling with examples.
         OR
     B. Explain Banker's algorithm for deadlock avoidance.

VIII. A. Explain any three page replacement algorithms with suitable example.
          OR
      B. Write short notes on:

          (i)   Access control list
          (ii) Linked allocation of disk space.

IX. A. Explain SCAN scheduling and SSTF scheduling in detail.
         OR
     B. Discuss the distributed system design issues.

X.   A. Explain Access Matrix and its implementation.
         OR
     B. Explain in detail symmetric and asymmetric encryption algorithms.

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