2007

Subject Code—7284

M.C.A. (Fourth Year) EXAMINATION

(5 Years Integrated Course)

MCA-404

OPERATING SYSTEM—II

Time : 3 *Hours* *Maximum Marks :* 100

Note : Attempt any *Five* questions out of eight. All questions carry equal marks.

1. What is Thread ? Discuss user and kernel threads. Explain multithreaded programming along with its benefits. **20**

2. Write short notes on the following : **5×4=20**
   (a) Interprocesses Communication
   (b) Dispatcher
   (c) Preemptive and non-preemptive scheduling
   (d) CPU scheduling criteria.

3. (a) What is race condition ? Why do we need process synchronization and coordination ? Discuss with example.

(b) What is a semaphore ? Explain its implementation along with example. **10+10**

4. What is a deadlock ? Illustrate safe and unsafe state in deadlock avoidance. Explain Banker's algorithm for safe sequence. **20**

5. What is basic concept of demand paging ? How is a page-fault handled in it ? Discuss various page replacement methods in brief. **20**

6. (a) Define thrashing and its cause.

(b) What is directory structure ? Discuss and explain logical structure of a directory. **8+12**

7. (a) What do you understand by free-space management ? Discuss various approaches for free-space management.

(b) Write down the various disk scheduling algorithms in brief. **10+10**

8. Write short notes on the following : **5+5+10**

(a) Network Operating System

(b) Distributed Operating System

(c) Basic Architecture and memory management in UNIX operating system.