Roll No. .....

Subject Code—6796-X

M.C.A. (First Year) EXAMINATION

(5 Years Integrated Course)

(For Re-appear Batch Prior to 2009)

MCA-105

OPERATING SYSTEM–I

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

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

1. An Operating System acts as resource manager. Justify this w.r.t. the functionality of an operating system.

2. Distinguish among time-sharing, a parallel system, real time system and multitasking.

3. What is an operating system structure ?

Compare important operating system structures.

4. (a) Describe the differences among short-term, medium-term and long-term scheduling.

   (b) Explain the process state and process control block.

5. What is the significance of scheduling algorithms in operating system ? What are the advantages of priority scheduling over round-robin scheduling ? Explain with suitable example.

6. How is a deadlock characterized ? Explain the term detection, recovery and prevention in context of deadlock. Explain one method for deadlock avoidance.

7. What happens when a page fault occurs ? Compare the following page replacement algorithms with respect to optimality :

   (a) first-in, first-out page replacement

(b) least recently used page replacement

(c) optimal page replacement.

8. Write short notes on the following :

(a) Paging and segmentation

(b) Thrashing

(c) Scheduling queue

(d) Swapping.