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PS – 386

II Semester M.C.A. Examination, November/December 2022
(CBCS) (2020-21 and Onwards)
COMPUTER SCIENCE
2MCA 1 : Operating System

Time : 3 Hours Max. Marks : 70

Instruction : *Answer **any five** questions from Section – **A** and **any four** questions from Section – **B**.*

SECTION – A

I. Answer **any five** of the following questions. **Each** carries **6** marks. **(5×6=30)**

1) Explain the different operating system structures.
2) Define system call. Describe the system call related to process management.
3) What is critical section problem ? Explain solution to consumer/producer problem.
4) Write difference between paging and segmentation.
5) What is disk scheduling ? Explain FCFS and SCAN disk scheduling.
6) How can deadlocks be prevented ? Describe them.
7) What is thrashing ? How do we overcome thrashing ?
8) By using access matrix, how do we secure an operating system ?

SECTION – B

II. Answer **any four** questions. **Each** carries **10** marks. **(4×10=40)**

9) a) In what ways two process communicate with each other ? **4**
   b) Explain three multithreaded models. **6**
10) a) Explain Peterson's solution to the mutual exclusion problem. **7**
   b) What is critical section ? Given a variable x and two process wish to write on that variable, at the same time. How does OS manage such a situation ? **3**

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11) a) What is a page table ? What are the various mechanisms for realising page table ? **5**

b) Discuss contiguous memory allocation. **5**

12) a) Explain FIFO page replacement algorithm with an example. **5**

b) Explain allocation of frames methods. **5**

13) a) Write any 5 difference between Windows and Linux Operating System. **5**

b) Explain types of VMs and their implementations. **5**

14) Write short notes on : **10**

i) Storage Management

ii) Semaphores.
