14849

MCA 3rd Semester Examination
Operating System (N.S.)

MCA-303

Time : 3 Hours Max. Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt any Five questions but select at least 1 question each from Section A, B, C & D. Section E is compulsory.

SECTION - A

1. Explain in detail functioning of Multi Programmed Batch Operating System. (12)

2. Write a note explaining various features of a Distributed Operating System. (12)

SECTION - B

3. Explain various concepts of process synchronization & it’s classical problems. (12)

4. Write short notes on following:
   (i) Deadlock Recovery Mechanism.
   (ii) Multiple Processor Scheduling (12)

SECTION - C

5. Discuss following memory management techniques.
   (i) Continuous Allocation
   (ii) Segmentation with Paging. (12)

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6. Compare and contrast the following file systems.
   (i) Direct/INEXED Access Methods
   (ii) Single Level/Tree Directory Structure. (12)

SECTION - D

7. Discuss various Disk Scheduling algorithms like FCFS, SSTF, C-SCAN etc. (12)

8. Discuss general Architecture of UNIX operating system. (12)

SECTION - E

9. Attempt any twelve parts (Each of 1 marks)
   (i) What are operating system services?
   (ii) Name four P-C (Personal Computer) based O.S. (Operating Systems).
   (iii) List different types of operating system based on architectural differences.
   (iv) Give two differences in FCFS and SJF process scheduling.
   (v) What are semaphores?
   (vi) Name two techniques for recovery from Deadlock.
   (vii) Differentiate between logical & physical address space.
   (viii) List two important aspects related to virtual memory.
   (ix) Write few lines on Thrashing.
   (x) List a few important properties of an indexed file structure.
   (xi) What is Demand Paging?
   (xii) What are Boot Blocks?
   (xiii) What is use of Hash Tables?
   (xiv) Give a UNIX command for DNS setting. (1\times12=12)