

[Total No. of Questions - 9] [Total No. of Printed Pages - 2]
(2123)

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MCA 3rd Semester Examination

Operating Systems

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 five questions in all by selecting one question each from Sections A, B, C & D and Full E-Section is compulsory.

SECTION - A

1. List various functions of an operating system and explain how are they implemented. (12)
2. Explain any two of following types of operating systems in detail.
 - (i) Real Time Systems
 - (ii) Distributed Systems
 - (iii) Time Sharing systems (12)

SECTION - B

3. Discuss various aspects of inter process communication in process management component of a processor, for an O.S. (Operating System). (12)
4. Write notes on any two of following:
 - (i) Process Synchronization
 - (ii) Deadlock Handling
 - (iii) Various Types of Process Scheduling. (12)

SECTION - C

5. Discuss following memory management techniques:
 - (i) Segmentation with Paging
 - (ii) Demand Paging (12)

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6. Compare and analyze following Page Replacement Algorithms.
- (i) FIFO
 - (ii) LRU
- (12)**

SECTION - D

7. Discuss in detail following two File Allocation Methods:
- (i) Linked Allocation
 - (ii) Indexed Allocation
- (12)**
8. Discuss in detail various features of UNIX operating system structure.
- (12)**

SECTION - E

9. Attempt any twelve parts:
- (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.
 - (xv) Name few market versions, flavours of UNIX. **(1×12=12)**