



SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY :: PUTTUR
Siddharth Nagar, Narayanavanam Road – 517583

QUESTION BANK

Subject with Code : Operating Systems (19MC9107)

Course& Branch: MCA

Year &Sem: I Year & II-Sem

Regulation:R19

UNIT –I

Operating System Overview

- | | |
|---|-----|
| 1. What are the objectives and functions of operating systems? | 12M |
| 2. Explain different services provided by operating systems. | 12M |
| 3. Define system calls. Discuss various types of system calls. | 12M |
| 4. What are the challenges in design and implementation of operating systems? | 12M |
| 5. Write a short note on Evolution of Operating Systems. | 12M |
| 6. a) Write a short note on Computer System Architecture. | 6M |
| b) Write about OS structure. | 6M |
| 7. What are the system programs and explain in detail. | 12M |
| 8. Explain about OS structure and OS operations. | 12M |
| 9. Write a brief description on Operating System Design and Implementation. | 12M |
| 10. Explain the following. | |
| a) System Calls | 6M |
| b) System Programs | 6M |

UNIT –II**Process Management, CPU Scheduling and Process Coordination**

1. Define process state. Explain different process state with neat diagram. 12M
2. Write short note on Process control block, context switch and dispatcher. 12M
3. What is a thread? Discuss about thread scheduling. 12M
4. Discuss the following.
 - a) FCFS & SJF CPU scheduling algorithms in detail . 6M
 - b) Explain about Priority, round-robin cpu scheduling algorithms. 6M
5. What is mean by process synchronization? Discuss in detail about classic problems of synchronization. 12M
6. Write about the Critical Section Problem and Peterson's solution. 12M
7. How Semaphore and monitors are used in process synchronization? 12M
8. Explain Scheduling Queues, Schedulers in detail. 12M
9. Explain multiple processor scheduling, real-time scheduling and thread scheduling. 12M
10. Explain about preemptive scheduling and scheduling criteria in detail. 12M

UNIT –III**Memory Management and Virtual Memory**

1. Write short note on the following.
 - a) Contiguous Allocation 6M
 - b) Swapping 6M
2. Explain the paging memory management technique in detail. 12M
3. Write a brief description on Logical & Physical Address Space and Contiguous Allocation. 12M
4. Explain about the structure of the page table. 12M
5. Write a brief description on Segmentation with Paging. 12M
6. Write a short note on Page Replacement Algorithms. 12M
7. Briefly explain demand paging in detail. 12M
8. Explain any one of the page replacement algorithm with suitable illustration. 12M
9. Write a brief description on segmentation technique. 12M
10. Explain about allocation of Frames, Thrashing. 12M

UNIT – IV**Mass Storage Structure & File System Interface**

1. Discuss about mass storage structure and disk structure in detail. 12M
2. Discuss about various disk scheduling in detail. 12M
3. Explain about RAID structure in detail. 12M
4. Explain about stable storage and tertiary storage structure in detail. 12M
5. Define file. Explain the different file accessing methods. 12M
6. Explain various directory structures. 12M
7. Briefly discuss about file sharing. 12M
8. Explain file implementation methods . 12M
9. Discuss on directory implementation. 12M
10. Discuss about free space management. 12M

UNIT –V
Deadlocks

1. What is deadlock? Explain Methods for Handling Deadlocks. 12M
2. What are the necessary conditions of a deadlock? Explain in detail. 12M
3. Write short notes on resource allocation graph. 12M
4. Explain deadlock prevention method with example. 12M
5. Explain banker's algorithm for deadlock avoidance. 12M
6. Explain about deadlock detection algorithm in detail. 12M
7. Discuss about deadlock recovery technique. 12M
8. Discuss the goals of protection and principles of protection in detail. 12M
9. Write about domain protection and Principles of Protection. 12M
10. Discuss language based protection. 12M