SIDDHARTH GROUP OF INSTITUTIONS :: PUTTUR
Siddharth Nagar, Narayanavanam Road – 517583

QUESTION BANK

Subject with Code : Operating Systems (18MC9104) **Course& Branch**: MCA

Year & Sem: I Year & II-Sem **Regulation:**R18

UNIT –I

Operating System Overview

1. What are the objectives and functions of operating systems? 12M
2. Write short notes on : simple batch, multi-programmed, time-shared systems 12M
3. Explain different services provided by operating systems. 12M
4. What are the differences between distributed systems and real time systems? 12M
5. A. Define system calls 4M
   B. Discuss various types of system calls. 8M
6. What are the challenges in design and implementation of operating systems? 12M
7. Write short note on Evolution of Operating Systems. 12M
8. A. Write short note on System Architecture 6M
   B. Write shortly about OS structure. 6M
9. What are the system programs and explain in detail 12M
10. Explain about Single processor systems, Multiprocessor systems and Clustered systems. 12M
11. Describe the differences between symmetric and asymmetric multiprocessing. What are the advantages and disadvantages of multiprocessor systems? 12 M

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UNIT –II

Process Management, CPU Scheduling and Process Coordination

1. A. Define process state 4M
   B. Explain different process state with neat diagram. 8M
2. Write short note on: Process control block, context switch, 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 algorithm. 6M

5. What is mean by process synchronization? Discuss in detail classic problems of synchronization. 12M
6. Write about Peterson's Algorithm. 12M
7. How Semaphore and monitors are used in process synchronization? 12M
8. Explain preemptive and non-preemptive scheduling in detail. 12M
9. Explain multiple processor scheduling, real-time scheduling and thread scheduling 12M
10. Explain about preemptive and non-preemptive scheduling and scheduling criteria in detail. 12M

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UNIT –III

Memory Management and Virtual Memory

1. Write short note on :
   a. Overlays 6M
   b. Swapping 6M
2. Explain the paging memory management technique in detail. 12M
3. Define page fault. Discuss the various steps involved while handling it. 12M
4. Explain about the structure of the page table. 12M
5. What is fragmentation? Explain internal and external fragmentation in detail. 12M
6. Briefly explain about the following algorithm with suitable example.
   a. First fit 4M
   b. Best fit 4M
   c. Worst fit 4M
7. Explain demand paging in detail 12M
8. Explain any one of the page replacement algorithm with suitable illustration 12M
9. Explain segmentation technique in brief. 12M
10. Explain about allocation of Frames, Thrashing 12M

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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. Explain the different file accessing methods 12M
6. Explain various directory structure 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

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UNIT –V

Deadlock

1.	What is deadlock? Explain with an example.	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.	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	12M
10.	Discuss language based protection.	12M

Prepared by: Saiyed Faiayaz Waris, Assoc. Professor, CSEDept.