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

QUESTION BANK (DESCRIPTIVE)

Subject with Code: OS (**20MC9103**)

Course & Branch: MCA I Year I-Sem   **Regulation:** R20

UNIT – I
Operating System Overview & Operating System Structure

1	What are the objectives and functions of operating systems?	[L1][CO1]	[12M]
2	Explain different services provided by operating systems.	[L2][CO1]	[12M]
3	Define system calls. Discuss various types of system calls.	[L5][CO2]	[12M]
4	What are the challenges in design and implementation of operating systems?	[L1][CO6]	[12M]
5	Write a short note on Evolution of Operating Systems.	[L6][CO6]	[12M]
6	a) Write a short note on Computer System Architecture.	[L6][CO1]	[6M]
	b) Write about OS structure.	[L6][CO4]	[6M]
7	What are the system programs and explain in detail?	[L1][CO1]	[12M]
8	Explain about OS structure and OS operations.	[L2][CO1]	[12M]
9	Write a brief description on Operating System Design and Implementation.	[L6][CO6]	[12M]
10	Explain the following.	[L2][CO2]	[6M]
	a) System Calls	[L2][CO2]	[6M]
	b) System Programs		

UNIT – II
Process Management, CPU Scheduling and Process Coordination

1	Define process state. Explain different process state with neat diagram.	[L5][CO2]	[12M]
2	Write short note on Process control block, context switch and dispatcher.	[L6][CO2]	[12M]
3	What is a thread? Discuss about thread scheduling.	[L1][CO4]	[12M]
4	Discuss the following.	[L6][CO4]	[6M]
	a) FCFS & SJF CPU scheduling algorithms in detail.	[L6][CO4]	[6M]
	b) Explain about Priority, round-robin cpu scheduling algorithms.		
5	What is mean by process synchronization? Discuss in detail about classic problems of synchronization.	[L1][CO2]	[12M]
6	Write about the Critical Section Problem and Peterson's solution.	[L6][CO2]	[12M]
7	How Semaphore and monitors are used in process synchronization?	[L1][CO2]	[12M]
8	Explain Scheduling Queues, Schedulers in detail.	[L2][CO2]	[12M]
9	Explain multiple processor scheduling, real-time scheduling and thread scheduling.	[L2][CO2]	[12M]
10	Explain about preemptive scheduling and scheduling criteria in detail.	[L2][CO2]	[12M]

UNIT – III

Memory Management & Virtual Memory

1	Write short note on the following. a) Contiguous Allocation b) Swapping	[L6][CO3] [L6][CO3]	**[6M]** **[6M]**
2	Explain the paging memory management technique in detail.	[L2][CO3]	**[12M]**
3	Write a brief description on Logical & Physical Address Space and Contiguous Allocation.	[L6][CO3]	**[12M]**
4	Explain about the structure of the page table.	[L2][CO4]	**[12M]**
5	Write a brief description on Segmentation with Paging.	[L6][CO4]	**[12M]**
6	Write a short note on Page Replacement Algorithms.	[L6][CO4]	**[12M]**
7	Briefly explain demand paging in detail.	[L2][CO4]	**[12M]**
8	Explain any one of the page replacement algorithm with suitable illustration.	[L2][CO4]	**[12M]**
9	Write a brief description on segmentation technique.	[L6][CO4]	**[12M]**
10	Explain about allocation of Frames, Thrashing.	[L2][CO4]	**[12M]**

UNIT – IV
Mass Storage Structure & File System Interface

1	Discuss about mass storage structure and disk structure in detail.	[L6][CO3]	**[12M]**
2	Discuss about various disk scheduling in detail.	[L6][CO4]	**[12M]**
3	Explain about RAID structure in detail.	[L2][CO4]	**[12M]**
4	Explain about stable storage and tertiary storage structure in detail.	[L2][CO3]	**[12M]**
5	Define file. Explain the different file accessing methods.	[L5][CO5]	**[12M]**
6	Explain various directory structures.	[L2][CO4]	**[12M]**
7	Briefly discuss about file sharing.	[L2][CO4]	**[12M]**
8	Explain file implementation methods.	[L2][CO4]	**[12M]**
9	Discuss on directory implementation.	[L6][CO4]	**[12M]**
10	Discuss about free space management.	[L6][CO3]	**[12M]**

UNIT – V
Deadlocks & Protection

1	What is deadlock? Explain Methods for Handling Deadlocks.	[L1][CO2]	**[12M]**
2	What are the necessary conditions of a deadlock? Explain in detail.	[L1][CO2]	**[12M]**
3	Write short notes on resource allocation graph.	[L6][CO3]	**[12M]**
4	Explain deadlock prevention method with example.	[L2][CO2]	**[12M]**
5	Explain banker's algorithm for deadlock avoidance.	[L2][CO2]	**[12M]**
6	Explain about deadlock detection algorithm in detail.	[L2][CO2]	**[12M]**
7	Discuss about deadlock recovery technique.	[L6][CO2]	**[12M]**
8	Discuss the goals of protection and principles of protection in detail.	[L6][CO5]	**[12M]**
9	Write about domain protection and Principles of Protection.	[L6][CO5]	**[12M]**
10	Discuss language-based protection.	[L6][CO5]	**[12M]**

PREPARED BY: Mr.P.Balaji, Associate Professor, Dept. of MCA, SIETK, Puttur.