Course Code: 20MC9103 **R20**

SIDDHARTH GROUP OF INSTITUTIONS: PUTTUR
(AUTONOMOUS)
Siddharth Nagar, Narayanavanam Road – 517583
QUESTION BANK (DESCRIPTIVE)

Subject with Code: Operating Systems & 20MC9103 **Course & Branch**: M.C.A

Year & Sem: I - M.C.A & I - Sem **Regulation:** R20

UNIT – I
Operating System Overview & Operating System Structure

1	a) What are the objectives of operating systems?	[L1][CO1]	[6M]
	b) Explain about the functions of operating system.	[L2][CO1]	[6M]
2	Illustrate different kinds of services provided by operating systems.	[L3][CO1]	[12M]
3	a) Define about system calls.	[L1][CO1]	[6M]
	b) Briefly discuss about various types of system calls.	[L2][CO1]	[6M]
4	a) What are the challenges of designing in operating system?	[L1][CO1]	[6M]
	b) How can you design & implement of operating systems?	[L2][CO1]	[6M]
5	Describe in detail about the evolution of operating systems.	[L2][CO1]	[12M]
6	a) Organize and explain Computer System Architecture.	[L4][CO1]	[6M]
	b) Write about operating system structure.	[L1][CO1]	[6M]
7	a) What are the system programs in operating system?	[L1][CO1]	[6M]
	b) Explain in detail about OS services?	[L2][CO1]	[6M]
8	a) Explain about operating system structure.	[L2][CO1]	[6M]
	b) Explain about operating system operations.	[L2][CO1]	[6M]
9	a) Write a brief description on operating system designing.	[L6][CO1]	[6M]
	b) Briefly write about operating system implementation.	[L2][CO1]	[6M]]
10	Explain the following.		
	a) System Calls	[L2][CO1]	[6M]
	b) System Programs	[L2][CO1]	[6M]

Course Code: 20MC9103 **R20**

UNIT – II

Process Management, CPU Scheduling and Process Coordination

1	a) Define process in process management.	[L1][CO2]	[6M]
	b) Explain different process state with neat diagram.	[L5][CO2]	[6M]
2	a) Write about process control block in detailed.	[L6][CO2]	[6M]
	b) Discuss about context switch and dispatcher.	[L5][CO2]	[6M]
3	What is a thread? Discuss about various kinds of thread scheduling.	[L1][CO2]	[12M]
4	Evaluate various CPU scheduling algorithm for the following processes	[L6][CO2]	[12M]

Process	P0	P1	P2
Burst Time	24	3	3
Arrival Time	0.0	1.0	2.0

5	a) What is mean by process synchronization?	[L1][CO2]	[6M]
	b) Discuss in detail about classic problems of synchronization.	[L2][CO2]	[6M]
6	a) Analyze critical section problem in detail	[L4][CO2]	[6M]
	b) Discuss about Peterson's solution.	[L2][CO2]	[6M]
7	a) What is Semaphore and explain in detail.	[L1][CO2]	[6M]
	b) How the monitors are used in process synchronization?	[L2][CO2]	[6M]
8	a) Explain in detailed about scheduling queues.	[L2][CO2]	[6M]
	b) How the Schedulers are assigned in CPU scheduling.	[L5][CO2]	[6M]
9	a) Explain multiple processor scheduling.	[L2][CO2]	[6M]
	b) Differentiate between real-time scheduling and thread scheduling.	[L4][CO2]	[6M]
10	a) Explain about preemptive scheduling.	[L2][CO2]	[6M]
	b) Discuss about scheduling criteria in detail.	[L2][CO2]	[6M]

Course Code: 20MC9103 **R20**

UNIT – III
Memory Management & Virtual Memory

1	Write short notes of the following.		
	a) Contiguous Allocation	[L1][CO3]	[6M]
	b) Swapping	[L1][CO3]	[6M]
2	a) Explain about case studies of Linux and Windows.	[L2][CO3]	[6M]
	b) Examine various memory management technique in detail.	[L4][CO3]	[6M]
3	a) Write a brief description on Logical & Physical Address Space.	[L1][CO3]	[6M]
	b) Briefly explain about demand paging.	[L2][CO3]	[6M]
4	a) Explain about the structure of the page table.	[L2][CO3]	[6M]
	b) Identify various page replacement algorithms.	[L4][CO3]	[6M]
5	a) Write a brief description on Segmentation with Paging.	[L2][CO3]	[6M]
	b) Explain about performance of demanding paging.	[L2][CO3]	[6M]
6	a) Briefly explain about Virtual memory.	[L2][CO3]	[6M]
	b) Discuss about the case study of Linux	[L2][CO3]	[6M]
7	a) Briefly explain about demand paging in detail.	[L2][CO3]	[6M]
	b) Discuss about the case study of Windows.	[L2][CO3]	[6M]
8	Analyze any one of the page replacement algorithm with suitable example.	[L4][CO3]	[12M]
9	a) What is segmentation with example?	[L1][CO3]	[6M]
	b) Write a brief description on segmentation technique.	[L2][CO3]	[6M]
10	a) Explain about allocation of Frames.	[L2][CO3]	[6M]
	b) Elaborate the content of Thrashing.	[L2][CO3]	[6M]

Course Code: 20MC9103 **R20**

UNIT – IV
Mass Storage Structure & File System Interface

1	a) Discuss about mass storage structure.	[L2][CO4]	[6M]
	b) Explain about disk structure in detail.	[L2][CO4]	[6M]
2	a) Discuss about various disk scheduling in detail.	[L2][CO4]	[6M]
	b) Briefly explain about disk management.	[L2][CO4]	[6M]
3	a) What is RAID structure with example?	[L1][CO4]	[6M]
	b) Explain RAID application's in present era?	[L2][CO4]	[6M]
4	a) How do you use stable storage?	[L2][CO4]	[6M]
	b) Explain tertiary storage structure in detail.	[L2][CO4]	[6M]
5	a) Define file with example.	[L1][CO4]	[6M]
	b) Explain different file accessing methods.	[L2][CO4]	[6M]
6	a) Explain various directory structures.	[L2][CO4]	[6M]
	b) Discuss about swap space management.	[L2][CO4]	[6M]
7	a) Briefly discuss about file sharing.	[L2][CO4]	[6M]
	b) Explain about protection in file sharing.	[L2][CO4]	[6M]
8	a) Analyze file system implementation methods.	[L4][CO4]	[6M]
	b) Elaborate the content of efficiency and performance.	[L2][CO4]	[6M]
9	a) Generalize and discuss on directory implementation.	[L6][CO4]	[6M]
	b) Explain about file system mounting.	[L2][CO4]	[6M]
10	a) Discuss about free space management.	[L2][CO4]	[6M]
	b) Contrast the case studies of Linux & Windows.	[L2][CO4]	[6M]

Course Code: 20MC9103 **R20**

UNIT – V
Deadlocks & Protection

1	a) What is deadlock with clear example?	[L1][CO5]	[6M]
	b) Explain methods for handling deadlocks.	[L2][CO5]	[6M]
2	a) What are the necessary conditions of a deadlock?	[L1][CO5]	[6M]
	b) Explain in detail about deadlock prevention methods.	[L2][CO5]	[6M]
3	a) Analyze various resource allocation graph.	[L4][CO5]	[6M]
	b) How to avoid the deadlock when it was happened.	[L2][CO5]	[6M]
4	a) Explain about language based protection.	[L2][CO5]	[6M]
	b) How can you identify the program threats? Explain briefly?	[L2][CO5]	[6M]
5	a) Apply banker's algorithm for deadlock avoidance.	[L3][CO5]	[6M]
	b) How can you explain the cryptography as a security tool?	[L2][CO5]	[6M]
6	a) Explain about deadlock detection algorithm in detail.	[L2][CO5]	[6M]
	b) Briefly discuss about firewalling to protect systems and networks.	[L2][CO5]	[6M]
7	a) Discuss about deadlock recovery technique.	[L2][CO5]	[6M]
	b) Illustrate about computer security classifications.	[L3][CO5]	[6M]
8	a) Discuss the goals of protection and principles of protection in detail.	[L2][CO5]	[6M]
	b) Explain briefly about user authentication techniques.	[L2][CO5]	[6M]
9	a) Write about domain protection and Principles of Protection.	[L1][CO5]	[6M]
	b) Discuss about system and network threats.	[L2][CO5]	[6M]
10	a) Discuss language-based protection.	[L2][CO5]	[6M]
	b) Briefly explain about revocation of access rights & capability based systems.	[L4][CO5]	[6M]

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