DEPARTMENT OF INFORMATION TECNOLOGY

OPERATING SYSTEMS(23IT403)

UNIT WISE QUESTION BANK, SHORT AND LONG ANSWER TYPE QUESTIONS

SHORT QUESTIONS

UNIT – I

S.No	Questions	BT	CO	PO
	Part – A (Short Answer Questions)			
1	What is the key difference between a trap and an interrupt?	L4	CO1	PO5
2	What are the types of System calls?	L4	CO1	PO4
3	List any four process management system call.	L3	CO1	PO5
4	Define user mode and kernel mode. Why two modes are required?	L4	CO1	PO5
5	What is the O.S features required for multiprogramming	L4	CO1	PO5
6	What are the advantage and disadvantage of multiprocessor system?	L4	CO1	PO4
7	Describe the difference between symmetric and asymmetric multiprocessing?	L4	CO1	PO5
8	Distinguish between the client-server and peer-to-peer models of distributed system	L5	CO1	PO5
9	What difference is between loosely coupled and tightly coupled system.	L3	CO1	PO4
10	What are advantages of distributed System?	L3	CO1	PO4

UNIT – II

S.No	Questions	BT	CO	PO
	Part – A (Short Answer Questions)			
1	Define process?	L4	CO2	PO2
2	What is meant by the state of the process?	L3	CO2	PO3
3	What does PCB contain?	L3	CO2	PO2
4	What are the 3 different types of scheduling queues?	L4	CO2	PO2
5	Define schedulers?	L3	CO2	PO4
6	What are the types of scheduler?	L4	CO2	PO4
7	Define critical section?	L4	CO2	PO3
8	Name dome classic problem of synchronization?	L4	CO2	PO2

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9	What is the use of cooperating processes?	L4	CO2	PO3
10	Define semaphores.	L5	CO2	PO2

UNIT – III

S.No	Questions	BT	CO	PO
	Part – A (Short Answer Questions)			
1	What is deadlock?	L3	CO3	PO2
2	What are goals of system protection?	L5	CO3	PO3
3	What is Access matrix?	L5	CO3	PO3
4	What are different methods for handling deadlocks?	L4	CO3	PO2
5	What is Access control?	L4	CO3	PO2
6	What are principles of protection?	L5	CO3	PO4
7	What are necessary conditions for deadlocks?	L3	CO3	PO4
8	Explain domain of protection.	L5	CO3	PO3
9	Explain capability based system?	L4	CO3	PO5
10	Explain laguange based protection.	L3	CO3	PO3

UNIT – IV

S.No	Questions	BT	CO	PO
	Part – A (Short Answer Questions)			
1	Define Swapping	L4	CO4	PO3
2	What is External Fragmentation?	L3	CO4	PO2
3	What is Internal Fragmentation?	L5	CO4	PO2
4	What do you mean by Compaction?	L5	CO4	PO4
5	What are Pages and Frames?	L4	CO4	PO4
6	What is the use of Valid-Invalid Bits in Paging?	L4	CO4	PO1
7	What is the basic method of Segmentation?	L5	CO4	PO3
8	What is Virtual Memory?	L3	CO4	PO3
9	What is Demand Paging?	L5	CO4	PO3
10	What is the basic approach of Page Replacement?	L4	CO4	PO2

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UNIT – V

S.No	Questions	BT	CO	PO
	Part – A (Short Answer Questions)			
1	What is a File?	L3	CO5	PO2
2	List the various File Attributes	L5	CO5	PO3
3	What are the various File Operations?	L5	CO5	PO3
4	What is the information associated with an Open File?	L4	CO5	PO2
5	What are the different Accessing Methods of a File?	L4	CO5	PO2
6	What is Directory?	L5	CO5	PO4
7	What are the operations that can be performed on a Directory?	L3	CO5	PO4
8	What are the most common schemes for defining the Logical Structure of a Directory?	L5	CO5	PO3
9	Define UFD and MFD	L4	CO5	PO5
10	What is a File?	L3	CO5	PO3

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LONG QUESTIONS

UNIT- I

S.No	Questions	BT	CO	PO
	Part – B (Long Answer Questions)			
1	Define operating system and list the basic services provided by operating system.	L4	CO1	PO3
2	Differentiate among the following types of OS by defining their essential properties. a) Time sharing system b) Parallel system c) Distributed system d) Real time system	L3	CO1	PO2
3	Explain batch system and Multiprogrammed System in detail.	L5	CO1	PO4
4	Explain the terms : a) Real time System b) Distributed System	L4	CO1	PO4
5	Explain the terms : a) Parallel System b) Batch System	L5	CO1	PO1
6	Explain O.S as extended machine in detail.	L5	CO1	PO1
7	Explain OS as resources manager	L3	CO1	PO3
8	Explain essential features of following structure of O.S a) Monolithic System b) Layered Systems c) Micro Kernels	L5	CO1	PO1
9	Explain essential features of following structure of O.S a) Client Server Model b) Virtual Machines	L4	CO1	PO2
10	Differentiate among the following types of OS by defining their essential properties: a) Time Sharing System b) Parallel System c) Simple batch System d) Real time System	L4	CO1	PO3

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UNIT- II

S.No	Questions	BT	CO	PO
	Part – B (Long Answer Questions)			
1	Define process and Explain process states in details with diagram	L4	CO2	PO3
2	Explain process states and process control block in details	L3	CO2	PO2
3	Explain the process state transition diagram used in multiprogramming environment.	L4	CO2	PO2
4	What is thread? Explain classical thread model OR Explain threads in detail	L5	CO2	PO4
5	Explain and differentiate between user level and kernel level thread.	L4	CO2	PO4
6	List the main difference and similarities between threads and process.	L5	CO2	PO1
7	Explain the following process scheduling algorithm a) Priority scheduling b) Shortest job first scheduling	L5	CO2	PO1
8	Explain the effect of increasing the time quantum to an arbitrary large Number and decreasing the time quantum to an arbitrary small number for round robin scheduling algorithm with suitable example?	L3	CO2	PO3
9	Consider following processes with length of CPU burst time in milliseconds Process Burst time P1 5 P2 10 P3 2 P4 1 All process arrived in order p1, p2, p3, p4 all time zero a) Draw Gantt charts illustrating execution of these processes for SJF and round robin (quantum=1) b) Calculate waiting time for each process for each scheduling algorithm c) Calculate average waiting time for each scheduling algorithm	L5	CO2	PO1
10	What are various criteria for a good process scheduling algorithm? Explain any two preemptive scheduling algorithms in brief	L4	CO2	PO2

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UNIT- III

S.No	Questions	BT	CO	PO
	Part – B (Long Answer Questions)			
1	What are the conditions for deadlock? Explain deadlock detection and recovery in detail.	L4	CO3	PO3
2	Explain deadlock prevention in detail	L3	CO3	PO2
3	Write short notes on: a. Deadlock modeling b. Bankers algorithm.	L4	CO3	PO2
4	Explain deadlock avoidance using banker's algorithm in details	L5	CO3	PO4
5	What is deadlock? Explain deadlock detection with multiple resources of each type	L4	CO3	PO4
6	Explain bankers algorithm for multiple resources to avoid deadlock	L5	CO3	PO1
7	Explain various methods for recovery from deadlock.	L5	CO3	PO1
8	Discuss deadlock detection with one resource of each type	L3	CO3	PO3
9	Write short notes on- a) Bankers algorithm for single resources. b) Ostrich algorithm.	L5	CO3	PO1
10	Explain swap space management methods of disk in detail.	L4	CO3	PO2

UNIT- IV

S.No	Questions	BT	CO	PO
	Part – B (Long Answer Questions)			
1	Discuss briefly the following issues related to device independent i/o software. a) Uniform interfacing for device drivers. b) Buffering.	L4	CO4	PO3
2	Discuss in details devices drivers.	L3	CO4	PO2
3	Write short notes on: a) Devices independent I/O software b) Goals of I/O software c) Interrupt handler	L4	CO4	PO2
4	Discuss the following: a) Magnetic disk b) CDs c) RAID d) DVDs e) Formatting Disk	L5	CO4	PO4
5	Discuss the following related to disk space management a) Block size b) Keeping track of free blocks	L4	CO4	PO4
6	Write short notes on: . a)I/O Devices. b) Device drivers c)Device controllers	L5	CO4	PO1
7	Write short notes on: a)Disk space management b)Disk arm scheduling algorithm	L3	CO4	PO3

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8	Write short note on: a) Segmentation b) Page table c) Compaction d) Working set model e) fragmentation	L5	CO4	PO1
9	Explain following page replacement algorithm in detail. i. LRU ii. FIFO	L4	CO4	PO2

UNIT- V

S.No	Questions	BT	CO	PO
	Part – B (Long Answer Questions)			
1	What are the objectives and minimal set of requirement for the file management system?	L4	CO5	PO3
2	What criteria are important in choosing a file organization?	L3	CO5	PO2
3	Explain briefly file system architecture & file management function.	L4	CO5	PO2
4	List& briefly explain 5 file organization.	L5	CO5	PO4
5	Compare file organization methods	L4	CO5	PO4
6	Which are the typical information elements of a file directory?	L5	CO5	PO1
7	Which are the typical operations performed on directory?	L5	CO5	PO1
8	What are methods of free space management of Disk?	L3	CO5	PO3
9	Explain linked list allocation using index in details.	L5	CO5	PO1
10	Explain file system reliability & performance in detail.	L5	CO5	PO1

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