Module 4 pyqs :

Q 2 B	Solve any One	10
i)	With respect to Contiguous memory allocation, Illustrate the working of Best Fit, Worst Fit and First Fit allocation algorithm with suitable examples for each.	10
	What are the various file accessing methods? Explain them.	
	OR	
	Solve any **One**	
	Explain the different schemes for defining the logical structure of a directory?	10 10

		Marks
Q4	Solve any **Two**	20
i)	A disk drive has 200 cylinders, numbered 0 to 199. The drive is currently serving a request at cylinder 53. The queue of pending requests, in order is 98, 183, 37, 122, 14, 124, 65, 67. Starting from the current head position, what is the total distance (in cylinders) that the disk arm moves to satisfy all the pending requests for each of the following disk-scheduling algorithms? i) FCFS ii) SSTF iii) SCAN iv) LOOK v) C-SCAN	10

Q4 (b)	On a disk with 1000 cylinders, numbers 0-999, compute the number of tracks the disk arm must move to satisfy all requests in the disk queue. Assume the last request received was at track 345 and the head is moving toward track 0. The queue in the FIFO order contains requests for the following tracks 123, 874, 692, 475, 105, 376. Perform the computation for the following scheduling algorithms: i. FIFO ii. SSTF iii. SCAN	10

Q5 (b)	What criteria should be adopted for choosing type of file organization? Describe the implementation of file allocation techniques. OR Suppose that a disk drive has 200 tracks, numbered 0 to 199. The head of moving disk is currently serving a request at track 143, The queue of pending requests in FIFO order is 86, 147, 91, 177, 94, 150, 102, 175, 130. What is the total number of head movement needed to satisfy all the pending requests for following disk scheduling algorithm viz. FCFS, SSTF and SCAN (direction → increasing order) ?	10

Q5 (a)	What are the categories of I/O devices? Explain operating system I/O design issues.	10

Q. 2	Attempt the following questions:	10
	(a) What are the various allocation methods with reference to file systems? (b) Disk track request queue is : 27, 129, 110,186, 147, 41, 10, 64, 120 Assume that the disk head is initially positioned over track 100 and total tracks on disk are 200. Represent the disk head movement graphically and calculate the number of tracks traversed and average seek length in SCAN, LOOK, C-SCAN, if disk head is moving in the direction of *decreasing* track numbers.	

Q.4 (a)	Explain 3 techniques for performing I/O function. **OR** Explain a model of I/O organization for Local peripheral device, Communication port and File System with the help of diagrams.	10 10

Q4. (b)	Explain file system software architecture along with elements of file management. **OR** Explain different record blocking methods with the help of proper example.	10 10

Q.5 (a)	Disk track requests: 27, 129, 110, 186, 147, 41, 10, 64, 120. Assume that the total tracks are 200 and the disk head is initially positioned over track 100 and is moving in the direction of increasing track number. Calculate the seek length, average seek length. And show the head movements with the help of diagram for following: a. SSTF b. SCAN c. C-SCAN (scan direction → upward)	10

Q.4 (c)	Explain different types of I/O buffering techniques with the help of diagrams. **OR** Draw and explain model of I/O organization for Local peripheral devices, communication port and file system.	10

Q.4(b)	Explain different file organization techniques with the help of diagram. **OR** Describe different file allocation strategies with the help of diagram.	10

Q.4(a)	Disk track request queue is : 27, 129, 110,186, 147, 41, 10, 64, 120 Assume that the disk head is initially positioned over track 100 and total tracks on disk are 200. Represent the disk head movement graphically and calculate the number of tracks traversed and average seek length in SCAN, LOOK, C-SCAN a. If disk head is moving in the direction of decreasing track numbers. b. If disk head is moving in the direction of increasing track numbers.	10