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(An Autonomous Institution)

Regulations: A17

Code No: 6EC03 **Date: 06-August-2024 (FN)**

B.Tech II-Year II- Semester External Examination, August - 2024 (Supplementary)

OPERATING SYSTEMS (CSE and IT)

Time: 3 Hours **Max.Marks:75**

Note: *a) No additional answer sheets will be provided.*
b) All sub-parts of a question must be answered at one place only, otherwise it will not be valued.
c) Missing data can be assumed suitably.

Bloom's Cognitive Levels of Learning (BCLL)

Remember	L1	Apply	L3	Evaluate	L5
Understand	L2	Analyze	L4	Create	L6

Part - A Max.Marks:25

ANSWER ALL QUESTIONS

		BCLL	CO(s)	Marks
1	Discuss batch systems?	L3	CO1	[2M]
2	Distinguish between preemptive and non-preemptive scheduling techniques?	L3	CO2	[2M]
3	Describe the purpose of banker's algorithm?	L3	CO3	[2M]
4	State the benefits of a virtual memory system?	L1	CO4	[2M]
5	Explain the operations that can be performed on a directory?	L2	CO5	[2M]
6	Define Security Attacks.	L1	CO6	[3M]
7	Describe context switching?	L3	CO	[3M]
8	What do you meant by thrashing?	L2	CO	[3M]
9	Define the terms with respect to disk I/O - seek time, latency time?	L1	CO	[3M]
10	Distinguish between internal and external fragmentation?	L3	CO	[3M]

Part – B Max.Marks:50

ANSWER ANY FIVE QUESTIONS. EACH QUESTION CARRIES 10 MARKS.

			BCLL	CO(s)	Marks
11.	a)	Distinguish between multiprogramming and multitasking?	L3	CO1	[5M]
	b)	Explain Is OS is a resource manager? If so justify your answer	L2	CO1	[5M]
12.	a)	Distinguish between preemptive and non-preemptive scheduling. Explain any two types with an example.	L3	CO2	[5M]
	b)	Explain the Round Robin scheduling algorithm with suitable example.	L2	CO2	[5M]
13.	a)	Write and explain Readers – Writers problem solution	L1	CO3	[5M]
	b)	Explain different methods of recovery from deadlocks	L2	CO3	[5M]
14.	a)	Explain the differences between Internal & External Fragmentation.	L2	CO4	[5M]
	b)	Consider the following page reference string: 1,2,3,4,2,1,5,6,2,1,2,3,7,6,3,2,1,2,3,6. How many page faults would occur in LRU replacement algorithms with three frames? Note: All frames are initially empty.	L4	CO4	[5M]

15.	a)	List any four common file types and their extensions?	L1	CO5	[5M]
	b)	Consider that a disk drive has 5,000 cylinders, numbered 0 to 4,999. The drive is currently serving request at cylinder 143, and the previous request was at cylinder 125. The queue of pending requests, in FIFO order, is: 86, 1470, 913, 1774, 948, 1509, 1022, 1750, 130 Starting from the current head position, what is the total distance (in cylinders) that the disk arm moves to satisfy all pending requests for each of the following disk scheduling algorithms? i. FCFS ii. SSTF iii. SCAN iv. C-SCAN v. LOOK vi. C-LOOK	L4	CO5	[5M]
16.	a)	Explain security attacks with an example.	L2	CO6	[5M]
	b)	Discuss I/O hardware with an example.	L3	CO6	[5M]
17.	a)	List and discuss the various services provided by the operating system?	L1	CO1	[4M]
	b)	Define the term ‘Dispatch Latency”.	L1	CO2	[3M]
	c)	What is a semaphore?	L2	CO3	[3M]
18.	a)	Consider a logical address space of eight pages of 1024 words each mapped onto a physical memory of 32 frames. i) How many bits are in the logical address? ii) How many bits are in the physical address?	L3	CO4	[5M]
	b)	Discuss about various file allocation methods	L2	CO5	[5M]

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