

Reg. No.

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B.E./ B. TECH.DEGREE EXAMINATIONS, MAY 2023

Seventh Semester

CS18051-FUNDAMENTALS OF OPERATING SYSTEMS

(Regulation2018/2018A)

TIME:3 HOURS

MAX. MARKS: 100

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	To apply the functionality of operating systems.	2
CO 2	To design various Scheduling algorithms.	4
CO 3	To apply the principles of concurrency and to design deadlock prevention, detection and avoidance algorithms.	3
CO 4	To compare and contrast various memory management schemes..	4
CO 5	To Implement a prototype file systems and I/O systems.	3

PART- A(10x2=20Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	Does the time sharing differ from Multiprogramming? If so, How?	1	2
2.	Why API's need to be used rather than System calls?	1	2
3.	Differentiate between pre-emptive and non-preemptive scheduling.	2	2
4.	What is the usage of Thread Libraries?	2	1
5.	List the necessary conditions for a deadlock situation to occur in the system.	3	1
6.	Write the importance of Process Synchronization.	3	2
7.	What do you mean by 'Thrashing'?	4	1
8.	Mention the significance of LDT and GDT in Segmentation.	4	2
9.	What is the responsibility of kernel in LINUX Operating System?	5	2
10.	What file access pattern is particularly suited to chained file allocation on disk?	5	2

PART- B (5x 14=70Marks)

	Marks	CO	RBT LEVEL
11. (a)	(14)	1	2

(OR)

- (b) Explain in detail about the Evolution of Operating Systems with necessary examples. (14) 1 2
12. (a) Discuss how the scheduling algorithms are selected for a system. What are the criteria need to be considered? Explain the different evaluation Methods. (14) 2 3
- (OR)**
- (b) State Process. Discuss the components of Process and various states of a Process with the help of a Process state transition diagram. (14) 2 3
13. (a) State critical section problem and discuss three solutions to solve the critical section problem. (14) 3 3
- (OR)**
- (b) Outline a solution using semaphores to solve dining philosopher problem. (14) 3 3
14. (a) Explain in detail about the Paging concept for the address translation mechanism of logical address into physical address. (14) 4 4
- (OR)**
- (b) State thrashing and explain the methods to avoid thrashing. (14) 4 4
15. (a) Analyse the RAID in different levels. Which RAID Level is more suitable for cloud server applications? (14) 5 3
- (OR)**
- (b) Compare the functionalities of FCFS, SSTF, C-SCAN and C-LOOK with example (14) 5 3

PART- C (1x 10=10Marks)

(Q.No.16 is compulsory)

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LEVEL |
|-----|---|-------|----|--------------|
| 16. | Justify the importance of Translation Look aside Buffer (TLB) | (10) | 4 | 5 |
