

USN

--	--	--	--	--	--	--	--	--	--

10EC65



Sixth Semester B.E. Degree Examination, July/August 2022
Operating Systems

Max. Marks:100

Note: Answer any FIVE full questions, selecting at least TWO questions from each part.

PART – A

- 1 a. What are goals of an operating systems? Explain briefly. (04 Marks)
- b. Describe batch processing systems and functions of scheduling and memory management. (08 Marks)
- c. Why I/O bound programs need to be given higher priorities in a multiprogramming environment. Illustrate with timing diagram. (08 Marks)
- 2 a. Explain system generation operations. (04 Marks)
- b. Explain layered OS structure. How it is superior compared to monolithic structure? (08 Marks)
- c. Compare and contrast Kernel and micro kernel based OS functions. (08 Marks)
- 3 a. With a process state transition diagram and PCB structure, explain the function of states, state transition and functions of a schedule. (08 Marks)
- b. Explain race condition in air line reservation system with an algorithm. (08 Marks)
- c. Mention the three kinds of entities used for concurrency within a process in threads in solaris, along with a diagram. (04 Marks)
- 4 a. Compare contiguous and noncontiguous memory allocation. (04 Marks)
- b. Describe buddy system allocation for program controlled data. How does it differ from process-of-two-allocator? (08 Marks)
- c. Describe:
 - (i) Best fit technique for free space memory allocation
 - (ii) Variable partitioned memory allocation with their merits and demerits. (08 Marks)

PART – B

- 5 a. Explain page out daemon' handling virtual memory in Unix OS. (04 Marks)
- b. Describe address translation mechanism using ATU and TLB in demand page allocation. (08 Marks)
- c. Explain briefly:
 - (i) Stack property
 - (ii) Belady's anomaly
 - (iii) Shared pages
 - (iv) LRU page replacement policy (08 Marks)
- 6 a. Compare sequential and direct file organization. (04 Marks)
- b. Describe the interface between file system and IOCS. (08 Marks)
- c. Explain the file system actions when a file is opened. (08 Marks)
- 7 a. Explain long term, short term medium term schedulers. (06 Marks)
- b. With a neat diagram, briefly explain the mechanism and policy schedules of short term process schedulers. (08 Marks)
- c. Write short notes on scheduling a Unix. (06 Marks)
- 8 a. Explain: (i) Symmetric and asymmetric naming (ii) Blocking and non blocking protocols (06 Marks)
- b. With an example, explain mail box features and its advantages. (08 Marks)
- c. Explain pipes and message queues in Unix. (06 Marks)

CMRIT LIBRARY
 BANGALORE - 560 037

* * * * *

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
 2. Any revealing of identification, appeal to evaluator and/or equations written eg. 42+8 = 50, will be treated as malpractice.