

Code No: 843AC**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****MCA I Semester Examinations, July/August - 2021****OPERATING SYSTEMS****Time: 3 Hours****Max.Marks:75****Answer any five questions****All questions carry equal marks**

- 1.a) What are the challenges in designing a distributed operating system?
b) Explain the various functions of an operating system. [8+7]
- 2.a) What is system call? Explain the various types of system calls and its purpose.
b) What are time shared and real time systems? Explain them in detail. [8+7]
- 3.a) Explain exec system call with examples.
b) What is Deadlock? Explain about Deadlock Avoidance. [8+7]
- 4.a) Explain the concept of Binary semaphores in detail.
b) What is a race condition? Describe how monitors are used to solve synchronization problem. [7+8]
5. Explain about Inter Process Communication using FIFOs in detail with examples. [15]
- 6.a) Explain various LRU-Approximation page replacement algorithms.
b) Draw a neat diagram showing address translation scheme in paging with TLB. [8+7]
- 7.a) With a neat diagram explain about Unix File system.
b) Explain briefly about file protection. [8+7]
8. Discuss various file allocation strategies. Discuss the merits and demerits of various file allocation strategies. [15]

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