Reg No.:_____ Name:_____

0520MCA172072103

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Second Semester MCA (2 Year) Degree Examination July 2021

Course Code: 20MCA172

Course Name: ADVANCED OPERATING SYSTEMS

Max. Marks: 60 Duration: 3 Hours

PART A

Answer all questions, each carries 3 marks. Marks

1		Explain Critical Section problem.	(3)
2		List out the different states of a process	(3)
3		Explain the requirements of Mutual Exclusion algorithms	(3)
4		Illustrate Access Matrix model	(3)
5		Discuss the mechanisms for building Distributed File Systems	(3)
6		Explain Distributed Shared Memory. What are the central issues during the implementation of Distributed Shared Memory	(3)
7		Explain the structure of Multiprocessor Operating Systems.	(3)
8		Differentiate between UMA, NUMA & NORMA architectures	(3)
9		Compare Wait-Die algorithm and Wound-Wait algorithm.	(3)
10		Discuss about the requirements of a database system	(3)

PART B

Answer any one question from each module. Each question carries 6 marks.

Module I

11	(a)	Explain Serializer in Operating System.	(4)
	(b)	List out the advantages of Serializer over Monitor.	(2)

OR

12		Discuss two communication models that provide communication primitives in Distributed Systems	(6)

Module II

13		Discuss about mutual exckusion. Explain Lamport's Algorithm for Mutual Exclusion.	(6)

OR

14		Explain any six Design Principles for Secure Systems.	(6)

Module III

15		Discuss Sender Initiated Algorithm and Receiver Initiated Algorithm.	(6)

OR

16		Discuss Central Server algorithm and Migration algorithm.	(6)

Module IV

17		Discuss the design issues of Multiprocessor Operating Systems.	(6)

OR

18	(a)	Illustrate Virtualization in Operating Systems.	(2)
	(b)	Explain the advantages and disadvantages of Virtualization.	(4)

Module V

19		Explain:	
	(i	Logs,	(2)
	(ii)	Serial Logs,	(2)
	(iii)	Log Equivalences	(2)

OR

20	(a)	Discuss about 2 phase locking.	(2)
	(b)	Explain the problems with 2 phase locking	(4)

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