

Register No.: Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

SECOND SEMESTER MCA DEGREE EXAMINATION (Special), AUGUST 2021

Course Code: 20MCAT152

Course Name: ADVANCED OPERATING SYSTEMS

Max. Marks: 60

Duration: 3 Hours

PART A

(Answer all questions. Each question carries 3 marks)

	CO
1. Define monitors.	[1]
2. What is meant by causal ordering of messages?	[1]
3. Explain access matrix model with its components.	[2]
4. Classify the mutual exclusion algorithms.	[2]
5. Explain any three mechanisms for building distributed file systems.	[3]
6. What are the design issues in distributed shared memory?	[3]
7. List the types of interconnection networks used in multiprocessor systems.	[4]
8. What the different types of Hypervisors?	[4]
9. Explain the problem of concurrency control in database systems.	[5]
10. What are the basic synchronization primitives for concurrency control?	[5]

PART B

(Answer one full question from each module, each question carries 6 marks)

MODULE I

	CO	Marks
11. a) Explain critical section problem.	[1]	(3)
b) What are semaphores? Explain with its drawbacks.	[1]	(3)

OR

	CO	Marks
12. a) Outline the characteristics of distributed operating system.	[1]	(1)
b) Explain the issues in distributed operating systems.	[1]	(5)

MODULE II

		CO	Marks
13.	a) How do you measure the performance of the mutual exclusion algorithms?	[2]	(2)
	b) Explain Lamport's Algorithm.	[2]	(4)

OR

		CO	Marks
14.	Explain access control list method.	[2]	(6)

MODULE III

		CO	Marks
15.	Elaborate on the algorithms for implementing distributed shared memory.	[3]	(6)

OR

		CO	Marks
16.	Explain sender-initiated algorithms with its components.	[3]	(6)

MODULE IV

		CO	Marks
17.	Explain the structures of multiprocessor operating systems.	[4]	(6)

OR

		CO	Marks
18.	a) Discuss the design issues in memory management.	[4]	(2)
	b) Explain processor scheduling in multiprocessor operating systems with its issues.	[4]	(4)

MODULE V

		CO	Marks
19.	Describe lock-based algorithms in detail.	[5]	(6)

OR

		CO	Marks
20.	Elaborate on serializability in concurrency control with the concept of log.	[5]	(6)
