Roll No. | | | | | | | | | |

COER University

END SEMESTER EXAMINATION, EVEN SEM 2022-23

Time : 3 hours
Program Name : M.Tech.(CSE)
Course Name : Advanced Operating System

Total Marks : 100
Semester : II
Course Code : MTCS202

Note: All questions are compulsory. No student is allowed to leave the examination hall before the completion of the time.

Q. No 1	Attempt Any Four Parts. Each Question Carries 5 Marks.	CO	BL
(a)	Explain the concept of Distributed Operating System and give its features.	CO 1	2
(b)	Differentiate between a local procedure call and a remote procedure call?	CO 1	3
(c)	Explain the Concept of Casual ordering of messages.	CO 1	2
(d)	Explain the concept of global state. Discuss its categorization with example.	CO 1	2
(e)	Explain the characteristics important for a mutual exclusion algorithm.	CO 1	2

Q. No 2	Attempt Any Four Parts. Each Question Carries 5 Marks.	CO	BL
(a)	State the basic objectives that a check pointing scheme for the distributed database should satisfy. Explain the issues to be addressed and assumptions to be made by a check pointing algorithm.	CO 2	2
(b)	Define checkpoints in a distributed system. Explain the concept of rollback recovery algorithm with its phases.	CO 2	2
(c)	Explain why voting mechanism is more fault tolerant than a commit protocol. Discuss the steps for a static voting algorithm in distributed system.	CO 2	2
(d)	Why it is required for a system to be fault tolerant? How it can be done and explain the issues that a fault tolerant system may encounter due to certain type of failures?	CO 2	2
(e)	Explain the concept of two-phase commit protocol used in a distributed system.	CO 2	2

Q. No 3	Attempt Any Four Parts. Each Question Carries 5 Marks.	CO	BL
(a)	Explain the important goals of distributed file system. Explain the architecture of Distributed file system with the help of a suitable diagram.	CO 3	2
(b)	What are the mechanisms employed for building a distributed file system? Explain the concepts of mounting and caching relating it.	CO 3	2
(c)	Explain the concept of distributed shared memory and give its advantages.	CO 3	2
(d)	What are the differences between Read Replication and Full Replication algorithms? For which distributed system requirement, they are used?	CO 3	2
(e)	Define Memory Coherence and explain its various forms in detail.	CO 3	2

Q. No 4	Attempt Any Two Parts. Each Question Carries 10 Marks.	CO	BL
(a)	Explain the different design issues in distributed operating systems.	CO 4	2
(b)	What are the types of multiprocessor operating system? Explain.	CO 4	2
(c)	Explain the concept of multiprocessor synchronization along with types of instructions that can be used to achieve it.	CO 4	2

Q. No 5	Attempt Any Two Parts. Each Question Carries 10 Marks.	CO	BL
(a)	Explain typical architecture of distributed file system. Give the "Full replication algorithm" for implementation of Distributed Shared Memory.	CO 5	2
(b)	How do we implement cache coherence in the PLUS system? Explain the concept of PLUS write update protocol with the help of a diagram.	CO 5	2
(c)	Define Real Time Operating System (RTOS). Explain the requirements for RTOS, its types and architecture in detail.	CO 5	2

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