Code No: I0504/R16

M. Tech. I Semester Regular/Supplementary Examinations, Jan/Feb-2019

ADVANCED OPERATING SYSTEMS

Common to Computer Science (05) and Computer Science & Engineering (56)

Time: 3 Hours

Max. Marks: 60

Answer any FIVE Questions
All Questions Carry Equal Marks

1.	a	In how many ways operating system is designed with separation of policies and mechanisms? Explain each design approach in detail.	6
	b	What are the problems with message passing communication model? How these problems handled in Remote Procedure call? Explain.	6
2.	a	Discuss the inherent limitations of distributed systems and their impact on the design and development of distributed systems.	6
	b	What is the importance of sequence number in token based distributed mutual exclusion algorithms? Explain in detail.	6
3.	a	"Deadlock handling is complicated to implement in distributed systems" Justify this statement with deadlock handling strategies.	6
	b	Write about Byzantine agreement problem? How it is solved with Lamport. Shostak and Dolev algorithm	6
4.	a	Discuss any four issues that must be addressed in the design and implementation of distributed file system	6
	b	Explain the importance of granularity and page replacement in efficient implementation of distributed shared memory.	6
5.	a	Symmetrically initiated algorithms have the advantages of both sender and receiver initiated distributed scheduling algorithms. Justify the statement.	6
	b	Explain the implementation of backward error recovery approaches.	6
6.	a	Explain the design principles of secure systems and required preliminaries.	6
	b	Write about the Take-Grand model and its implementation with Bell. La-padula and Lattice model to deal with information flow control.	6
7.	a	Discuss the application of encryption in performing authenticated communication between entities in distributed systems.	6
	b	Explain the implementation of user level and kernel level threads.	6
8.	a	What is serializability theory? How it is implemented in distributed database systems.	6
	b	Discuss various concurrency control algorithms for fully replicated database systems.	6

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