Code No: I0504/R16

M. Tech. I Semester Regular/Supple Examinations, Jan/Feb-2018

ADVANCED OPERATING SYSTEM

Common to Computer Science (05) and Computer Science & Engineering (58)

Time: 3 Hours **Max. Marks: 60**

Answer any FIVE Questions
All Questions Carry Equal Marks

1.	a	What is advanced operating systems? Write about operating principles of architecture driven and application driven advanced operating systems.	6M
	b	Explain the communication aspects of distributed systems with respect to the geographical area.	6M
2.	a	How to achieve mutual exclusion with non token based algorithms for distributed systems.	6M
	b	What are the limitations of Lamport's logical clocks? How to overcome them with vector clocks.	6M
3.	a	Explain how an Edge-Chasing algorithm can be used for deadlock detection in distributed systems.	6M
	b	Suggest some solutions to the Byzantine agreement problem.	6M
4.	a	How to handle naming resolution and availability issues in distributed file systems? Explain.	6M
	b	Describe four basic algorithms to implement distributed shared memory.	6M
5.	a	Differentiate sender initiated and receiver initiated load sharing algorithms.	6M
	b	Write about two-phase algorithm for check pointing in distributed databases.	6M
6.	a	What are capabilities? Explain capability based addressing to implement access matrix	6M
	b	In detail explain protocol used for private key systems. And discuss the potential threats on it.	6M
7.	a	Differentiate the following: i) Tightly coupled vs. loosely coupled systems ii) UMA vs. NUMA vs. NORMA architectures.	6M
	b	Discuss various atomic hardware instructions implementation to achieve process synchronization.	6M
8.	a	Differentiate the working principles of 2 phase locking(2PL) and non 2 phase locking(N2PL) protocols	6M
	b	In detail write about the motivations and advantages of distributed databases.	6M

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