Code: 9A05505

B.Tech IV Year I Semester (R09) Regular & Supplementary Examinations December 2015
OPERATING SYSTEMS
(Common to ECE, EIE & E.Con.E)

Time: 3 hours   Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks
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1 (a) Explain the concept of multitasking.
   (b) Explain the special program used to generate a system.

2 (a) Solve producer-consumer problem using shared-memory.
   (b) Write about process management in UNIX.

3 (a) What is a monitor? Give the schematic view of a monitor with conditional variables and explain.
   (b) Explain in detail Timestamp-Based protocol.

4 (a) What is relocation? Explain dynamic relocation using a relocation register.
   (b) Explain the concept of virtual memory.

5 (a) What do you understand by safe and unsafe state?
   (b) Consider the following snapshot of a system:

	Allocation	Max	Available
	A B C	A B C	A B C
P_0	0 1 0	7 5 3	3 3 2
P_1	2 0 0	3 2 2	
P_2	3 0 2	9 0 2	
P_3	2 1 1	2 2 2	
P_4	0 0 2	4 3 3	

Answer the following questions using the Banker's algorithm:
   (a) Is the system in a safe state?
   (b) If a request from process P_1 arrives for (1, 0, 2) can the request be granted immediately?

6 (a) How to recover from system failures?
   (b) How to improve the performance of a disk?

7 (a) Explain how the operating system transforms I/O requests to hardware operations.
   (b) Discuss the problems with RAID.

8   How cryptography can be used as a security tool?

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