

**17P267**

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Name.....

Reg. No.....

**SECOND SEMESTER M.Sc. DEGREE EXAMINATION, MAY 2018**

(CUCSS - PG)

(Computer Science)

**CC17P CSS2 C02 - OPERATING SYSTEM CONCEPTS**

(2017 Admissions: Regular)

Time: Three Hours

Maximum: 36 Weightage

**Part A**

Answer *all* questions. Each question carries 1 weightage.

1. Differentiate between mode switch and process switch.
2. Explain the role of middleware.
3. Define different types of granularities.
4. Distinguish between physical and logical address space.
5. List the requirement for mutual exclusion.
6. Give the deadlock recovery strategy.
7. Explain thrashing.
8. Define different states of the thread.
9. Give the advantages of remote procedure call.
10. Define PCB.
11. Explain necessary conditions for occurring deadlock.
12. Define multithreading.

**(12 × 1 = 12 Weightage)**

**Part B**

Answer any *six* questions. Each question carries 2 weightage.

13. Define overlays with suitable example.
14. Briefly explain five state process model.
15. Explain any two CPU scheduling algorithms.
16. Discuss client server architecture.
17. Explain monitors.
18. Distinguish between counting and binary semaphore.

19. What is meant by priority inversion?
20. Discuss about paging mechanism.
21. Explain the reason for process creation.

**(6 × 2 = 12 Weightage)**

### Part C

Answer any *three* questions. Each question carries 4 weightage.

22. Consider the following snapshot of system:

	<u>Allocation</u>			<u>Max</u>			<u>Available</u>		
	A	B	C	A	B	C	A	B	C
P0	0	1	0	7	5	3	3	3	2
P1	2	0	0	3	2	2			
P2	3	0	2	9	0	2			
P3	2	1	1	2	2	2			
P4	0	0	2	4	3	3			

Answer the following using the Banker's algorithm:

- (a) What is the content of the matrix *Need*?
  - (b) Is the system in a safe state?
  - (c) If a request from process P1 arrives for (1, 0, 2), can the request be granted immediately?
23. Explain distributed message passing in a single system.
  24. (a) What is the need of process termination?  
(b) What is real time operating system?
  25. Explain any four page replacement technique with suitable example.
  26. How we can prevent deadlock?
  27. Explain real time scheduling.

**(3 × 4 = 12 Weightage)**

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