SECOND SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2019
(Regular/Supplementary/Improvement)

(CUCSS - PG)

CC17PCSS2 C02 - OPERATING SYSTEM CONCEPTS

(Computer Science)

(2017 Admission onwards)

Time: Three Hours   Maximum:36 Weightage

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

1. Explain the thread states.
2. Define multi threading.
3. List the requirements for mutual exclusion.
4. Give the deadlock recovery strategy.
5. Define overlays.
6. What is the difference between internal and external fragmentation?
7. What is meant by demand paging?
8. What is the difference between Process and Thread?
9. What is meant by priority inversion?
10. Explain best fit and first fit algorithms for memory allocation.
11. Give any two objectives of Operating Systems.
12. Give the advantages of Remote Procedure Call.

(12 x 1 = 12 Weightage)

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

13. Explain UNIX SVR4 Process management.
14. Write a note on ULTs & KLTs.
15. What is the difference between mode switch and process switch?
16. What is the average waiting time for these processes with the Round Robin scheduling algorithm.

Process	Arrival Time	Burst Time
P1	0	5
P2	1	3
P3	3	6
P4	5	1
P5	6	4

17. Explain the conditions for Deadlock. How deadlock can be described in terms of resource allocation graph.

18. What are the characteristics of Real Time Operating Systems?

19. What are the design issues involved in multiprocessor scheduling?

20. Give the design issues associated with RPC.

21. How does client/server differ from other distributed processing solution?

(6 x 2 = 12 Weightage)

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

22. Write a short note on mobile operating systems. Compare IOS and Android

23. Explain page replacement algorithms.

24. Explain real time scheduling algorithms.

25. Explain (a) readers writers problem (b) Dining Philosopher's problem.

26. Explain major achievements of Operating System.

27. Consider the following snapshot for a system:

Process Allocation Maximum Available

Process	Allocation				Maximum				Available			
	A	B	C	D	A	B	C	D	A	B	C	D
P0	0	0	1	2	0	0	1	2	1	5	2	0
P1	1	0	0	0	1	7	5	0				
P2	1	3	5	4	2	3	5	6				
P3	0	6	3	2	2	3	5	6				
P4	0	0	1	4	0	6	5	6				

a   Write an algorithm to find out whether the system is in a safe state or in unsafe state.

b   What is the content of the matrix Need?

c   Is the system in a safe state?

(3 x 4 = 12 Weightage)

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