Q. P. Code: 39373

(Time: 3hrs)   (Marks: 80)

N.B.   1. Question 1 is compulsory.
2. Attempt any three from remaining five questions.
3. Figure in right indicate full marks

Q 1	Attempt the following (any four)	
	a. Define Operating System? What are its objectives?	5
	b. Explain system call and enlist its types.	5
	c. Differentiate short and medium-term scheduler.	5
	d. What are advantages of multiprogramming?	5
	e. State characteristics of good process scheduler.	5
Q2. A	What is deadlock? Explain necessary and sufficient conditions for a deadlock to occur.	10
B	Explain in detail page table structures.	10
Q3. A	Explain LINUX operating system with kernel, memory management and IO management.	10
B		10

	R1	R2	R3
P1	3	2	2
P2	6	1	3
P3	3	1	4
P4	4	2	2

Claim matrix C

	R1	R2	R3
P1	1	0	0
P2	6	1	2
P3	2	1	1
P4	0	0	2

Allocation matrix A

R1	R2	R3
9	3	6

Resource vector R

Consider above snap shot of the system
1. Calculate available vector 2. Calculate need matrix 3. Calculate safe sequence 4. Is system in safe state?

Q4. A	Explain the different allocation methods with reference to file system.	10
B	Explain algorithm to avoid deadlock in dinning philosopher's problem.	10
Q5. A	Compare the following disk scheduling algorithms using appropriate example – SSTF,FCFS,SCAN,C-SCAN,LOOK	10
B	What is mutual exclusion? Give software approaches for mutual exclusion.	10
Q6. A	Explain need of page replacement. Explain optimal page replacement policy with example.	10
B	Explain UNIX file system	10

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