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B.E. / B.Tech. (Part Time) End Semester DEGREE EXAMINATION, NOV / DEC 2011

Fourth Semester

Common to Computer Science and Engineering / Information Technology

31

PTCS 9252 – OPERATING SYSTEMS

(Regulation 2009)

Time : 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. Write short notes on the functions provided by operating systems
2. Compare multitasking and multiprogramming
3. Write a note on real time scheduling .
4. What is a semaphore? Discuss the operations on it.
5. Compare logical address and physical address with an example
6. What is pure demand paging?
7. Write short notes on any two file management systems calls
8. Write a note on file mounting
9. What is thrashing?
10. Write short notes on Open source software

PART-B

5 x 16 = 80

11. Consider the following snap shot of a system. Execute Banker's algorithm and answer the following:

	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	0	6	5	2				
P4	0	0	1	4	0	6	5	6				

- (i) What is the content of the need matrix? (4)
- (ii) Is the system in a safe state? (6)
- (iii) If the request for process P1 arrives for (0, 4, 2, 0) can it be granted immediately (6)

- 12a. A dentist has a consultancy room in his residence. The room can accommodate ten patients maximum. The doctor goes to adjacent hall if no patients are waiting. The patients also go back if all ten chairs are occupied. If the doctor is available and there are free chairs the patient 16

occupies one chair. If the doctor is in the adjoining hall, patient calls him for consultancy. Write an algorithm to synchronize both doctor and patient.

(OR)

12.b What is a monitor? Write a monitor solution to dining philosopher problem and discuss 16

13a. Explain in detail the segmentation scheme of memory management with neat sketch. Discuss how it is different from paging scheme 16

(OR)

13b. Given memory partition of 100KB, 500KB, 200KB, and 600KB (in order). Show with neat sketch how would each of the first-fit, best-fit and worst fit algorithms place processes of 212 KB, 417KB, 112 KB and 426 KB (in order). Which algorithm is most efficient in memory allocation? 16

14a. Explain the various disk scheduling algorithms and compare them with an illustrative example. 16

(OR)

14b. (i) What are the possible structures for directory and discuss in detail 8

(ii) Explain various file allocation methods in detail. 8

15a. Discuss the architecture of Window 2000 operating systems with neat diagram and explain the memory management policy in it. 16

(OR)

15b. Write short notes on the following

(i) Process scheduling in LINUX 8

(ii) File system in LINUX 8