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**B.E./ B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV / DEC 2013**

Electrical and Electronics Engineering

Seventh Semester

28

**EE 9029 – OPERATING SYTEMS**

(Regulation 2008 )

Time : 3 Hours

Answer ALL Questions

Max. Marks 100

**PART-A (10 x 2 = 20 Marks)**

1. What is spooling?
2. Why is short term scheduler called so?
3. Define a semaphore
4. Define deadlock
5. Define virtual memory
6. What is relocation register for?
7. What is a cylinder in relation to hard disks?
8. Give the different file attributes
9. What are the different types of caching in relation to distributed systems?
10. What is an I node in Linux?

**PART B**

11. i) Given the following details, calculate the average waiting time and average turnaround time under shortest remaining job first, round robin with time slice = 4 and shortest job first strategies

Process no.	Arrival time	Priority	CPU burst
1	0	3	5
2	1	2	7
3	4	1	8

12

11. ii) What is multilevel feedback queue scheduling? What are the parameters, which define it completely?

4

PTO

12. a i) What is race condition? Why is it called so? Explain race condition with a proper example. How do you avoid race condition in computer? 10

12. a ii) What is critical section? What is critical section problem? Give a suggestion for the solution of it 6

OR

12. b) Differentiate clearly between dead lock avoidance and dead lock prevention. Give the necessary algorithms in each case. What is the sufficient condition for a dead lock to occur? 16

13. a i) Explain dynamic memory allocation. What are the disadvantages of it? What is compaction? 8

13. a ii) What type of address binding should be resorted to in dynamic memory allocation? Explain. 8

OR

13. b i) What is optimal algorithm in page replacement? In page replacements, the pages with highest access count (MFU) or least access count (LFU) should be replaced? Is any exception possible? If so how? 8

13 b ii) Explain the working window method of allocation of frames to processes in a system. 8

14. a i) What are the directory structures available in computer systems? Specify the advantages and disadvantages 8

14. a ii) How do operating systems enforce the file protection in a multi user scenario? 8

OR

14. b i) What are the different disk scheduling algorithms? Compare and contrast them. Why is circular scan algorithm called so? 16

15. a) Give the distributed deadlock detection algorithm. If a deadlock is detected in a distributed system, how is the victim process to be aborted found out? Give an example 16

OR

15. b) Give producer consumer problem. Give a solution to it using semaphores. Explain each of the semaphore constructs, with the initial values of each semaphore. 16