b) Discuss local and global page replacement techniques used in operating systems with case studies. 7

OR

6. Compare paging and segmentation. Consider a paged virtual memory system with 32-bit virtual addresses and 1K-byte pages and 16-bit physical address. Design the page table enteries and mapping mechanism. 12

UNIT-IV

7. a) What are the conditions to be satisfied for a deadlock to occur 4
   b) Explain the banker's algorithm for deadlock avoidance. 8

OR

8. a) Define a file system interface and access methods. 6
   b) Explain the various directory structures supported by operating systems. 6

UNIT-V

9. Explain the file system management for linked and indexed allocation methods and with the help of Unix and Windows how these mechanisms are implemented. 12

OR

10. What are the goals of protection. Explain the access matrix Mechanism for achieving protection. 12

[EURCS 404/EURIT 404]
B.Tech. DEGREE EXAMINATION

IV SEMESTER

OPERATING SYSTEMS

(Effective from the admitted batch 2007–08 onwards)
(Common for CSE & IT branches)

Time: 3 Hours **Max.Marks: 60**

Instructions: Each Unit carries 12 marks.
Answer all units choosing one question from each unit.
All parts of the unit must be answered in one place only.
Figures in the right hand margin indicate marks allotted.

UNIT-I

1. a) Explain monolithic, layered and micro kernel structures of operating system design with case studies. 6
   b) Explain the services provided by operating systems 6

OR

2. a) Discuss any 5 criteria used for scheduling processes in an operating system. 3
   b) Explain the state diagram of the processes in an operating system. 5
   c) With the help of a Goutt chart explain the Round Robin scheduling algorithm. 4

UNIT-II

3. a) What are the conditions to be satisfied by solution to critical section problem. 6
   b) Explain how monitors statisfy the condition of a good solution. 6

OR

4. a) Explain the Test-and-Set instruction and its limitation. 6
   b) Explain the inter process communication support in Unix/ Linux. 6

UNIT-III

5. a) Explain thrashing. Explain how it is detected and how the operating system responds to it. 5

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