

B.Tech II Year - II Semester Examinations, April/May-2012
OPERATING SYSTEMS
(INFORMATION TECHNOLOGY)

Time: 3 hours**Max. Marks: 80**

Answer any five questions
All questions carry equal marks

- - -

- 1.a) What are the advantages and disadvantages of buffer-cache?
- b) Consider the following page-reference string: 1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6. How many page faults occur for the LRU, FIFO and optimal page replacement algorithms, assuming 3, 4, 5 frames and initially all frames are empty? [16]
- 2.a) Explain Dijkstra's Bankers Algorithm for deadlock avoidance when multiple instances of each type of resources are present.
- b) Distinguish between Deadlock avoidance and Deadlock Prevention. [16]
- 3.a) Explain various file access and organization methods with their merits and demerits.
- b) Write a short note on record blocking. [16]
4. Explain the following terms:
 - a) Threats
 - b) Intruders
 - c) Viruses. [16]
- 5.a) Describe the hierarchical Operating System structure with a neat diagram.
- b) Write a short note on Virtual Machines and System calls. [16]
- 6.a) Differentiate between pre-emptive and non pre-emptive scheduling.
- b) Explain how semaphores are used to solve concurrency problems with an example. [16]
- 7.a) Explain briefly about the memory management scheme of paging along with its merits and demerits.
- b) In virtual memory management scheme what is thrashing and how does it occurs. [16]
- 8.a) Describe how CPU is allocated when processes priority scheduling is used.
- b) What are the major problems associated with priority scheduling and how can they be addressed? [16]

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