R09

Time: 3 hours   Max. Marks: 75

Answer any five questions
All questions carry equal marks
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1.a) In how many ways a thread can be implemented?Explain the differneces between that threads.
  b) Expalin clearly about Distributed systems and Special purpose systems.

2.a) Explain the following process state transitions:
  i) Blocked ! Blocked/Suspended.
  ii) Blocked/Suspended ! Ready/Suspended.
  iii) Ready/Suspended ! Ready.
  b) Consider the following set of process that arrive at time 0, with the length of the CPU burst given in milliseconds.

Process	Burst time
P_1	2
P_2	3
P_3	3

  Calculate the average waiting time when the processes arrive in the following order:
  i) P_1, P_2, P_3
  ii) P_2, P_3, P_1
  Provide the Gantt chart for the same.

3.a) Explain the Bernstein concurrency conditions through a simple example.
  b) Explain the solution for Dining-Philosopher problem.

4.a) Write short notes on following terms:
  i) Pure demand paging
  ii) Inverted page tables
  iii) Page replacement algorithms.
  b) A process references five pages 1,2,3,4 and 5 in the following order: 1,2,3,4,1,2,5,1,2,3,4,5
  Assume that the replacement algorithm is LRU and find the number of page faults during this sequence of references starting empty main memory with three page frames.

5.a) Discuss different deadlock prevention strategies along with their merits and demerits.
  b) Enumerate the conditions that characterize a deadlock? Explain resource-allocation-graph algorithm for deadlock detection with relevant diagrams.

6.a) Compare and contrast the file systems with respect to the following: UNIX, Linux, Windows.
  b) What are the various methods for file sharing?

7.a) State and explain the various procedures that the kerned I/O sub-system supervises.

b) Consider the following disk queen with requests for I/O to blocks on cylinders 98,183,37,122,14,124,65,67 in that order, using FCFS algorithm of the disk head is initially at cylinder 53,find the total head movement in cylinders. Also provide the necessary diagram to show the head movement for the above queue.

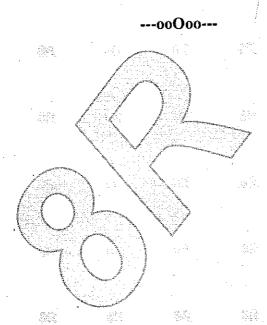8.a) Discuss about Vulnerability of passwords.

b) Write about morris internet worm.

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