

Q.P. Code :13893

[Time: Three Hours]

[Marks:80]

Please check whether you have got the right question paper.

- N.B:
1. Question.No.1 is compulsory.
 2. Attempt any 3 questions from the remaining 5 questions.
 3. Draw neat diagrams wherever necessary.

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| Q 1 | a) What is operating system? Discuss the role of an OS as a resource manager. | 5 |
| | b) Differentiate between deadlock avoidance and deadlock prevention. | 5 |
| | c) What are the advantages of Linux and Unix over windows? | 5 |
| | d) Explain the performance of demand paging. | 5 |
| Q 2 | a) Explain clearly, how Unix performs file management using I-nodes. | 10 |
| | b) What is process? Explain the life cycle of a process using process state transition diagram. | 10 |
| Q 3 | a) Explain clearly, paging and segmentation based memory management techniques. | 10 |
| | b) Explain the working of Buddy algorithm in Linux memory management. | 10 |
| Q 4 | a) What is semaphore? Give an implementation of bounded buffer producer consumer problem using semaphore. | 10 |
| | b) Explain the different methods of organizing directories in an operating system. | 10 |
| Q 5 | a) What is kernel of an operating system? What are the different types of kernels? | 10 |
| | b) Explain the working of EDF and RMA real time scheduling algorithms. | 10 |
| Q 6 | Write a details note on following | |
| | a) Disks Arm Scheduling Algorithms. | 10 |
| | b) Logical and physical address space. | 10 |
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