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BT–5 / D 12

OPERATING SYSTEM

Paper–IT–357

Time allowed : 3 hours] *[Maximum marks : 100*

Note : *Answer **five** questions, selecting at least **one** question from each unit. All questions carry eqaul marks.*

Unit–I

1. (a) Define process. What are the different states of a process ? Explain using state transition diagram.

   (b) What are the differences and similarities between semaphore and monitor ? Explain using suitable examples.

2. (a) What do you understand by the layered design of operating system ? What are the advantages of layered structure ? Explain.

   (b) What do ycu understand by concurrency ? Discuss the problems associated with it using producer-consumer problem.

Unit–II

3. What do you understand by deadlock ? What are the essential conditions for deadlock ? Explain any deadlock detection technique using suitable examples.

4. (a) What is the basic difference between paging and segmentation ? What extra hardware do we require for implementing demand paging and demand segmentation ? http://www.kuonline.in

   (b) Discuss the following page replacement policies with their merits and demerits :

   (i) Least Recently Used (LRU)

   (ii) First In First Out (FIFO)

   (iii) Not Recently Used (NRU)

Unit–III

5. (a) What do you understand by contiguous and non-contiguous disk allocation methods ? Discuss the problem of fragmentation also.

   (b) What are the advantages and disadvantages of performing file protection checks at file open time and at every read or write operation.

6. Differentiate between following :

   (a) Logical and physical file system

   (b) Blocking and buffering

   (c) Access Control List and Access Control Matrix.

Unit–IV

7. Write a detailed note on the deadlock handling strategies in Unix operating system.

8. (a) What do you understand by RPC ? What are the sequence of events during a RPC ? Discuss.

   (b) Discuss the characteristics features of Network Operating Systems.