CSE/IT 213 (R-15)

Total No. of Questions :09] [Total No. of Pages : 02

II/IV B.Tech. DEGREE EXAMINATIONS, NOVEMBER- 2019

First Semester

CSE/IT

OPERATING SYSTEMS

Time: Three Hours **Maximum marks:60**

Answer Question No.1 Compulsory **6X2=12 M**

Answer ONE Question from each Unit **4X12=48 M**

1. a) Features of special purpose systems
   b) Mention thread issues
   c) Atomic transaction
   d) File sharing
   e) RAID structure
   f) List and explain important parameters regarding disk operations.

UNIT-I

2. a) Write the advantages of peer-to-peer systems over client-server systems? Give an example to peer-to-peer model.
   b) Explain the term process context. Explain the process of context switching.

(OR)

3. a) What are the set of operating system services that provides functions that are helpful to the user? Explain.
   b) How parent and child relationship is created between processes? Explain how parent and child behave on its termination.

UNIT-II

4. Consider 3 processes P1, P2, and P3, which require 5,7 and 4 time units and arrive at time 0,1 and 3. Draw the Gant chart, process completion sequence and average waiting time for.
   i) Round robin scheduling with CPU quantum of 2 time units. **P.T.O**

(OR)

5. Discuss Peterson's algorithm with its Merits and Demerits.

UNIT-III

6. Define deadlock and give its characteristics. Explain Banker's algorithm to avoid a deadlock. What is the problems in its implementation.

(OR)

7. a) Discuss about swap-space management.
   b) Explain about FIFO, LRU page replacement algorithms with an example.

UNIT-IV

8. a) Explain the concept of Disk Management.
   b) Explain the Shortest Seek Time First algorithm with an example.

(OR)

9. a) Briefly explain about Acyclic Graph Directory Structure.
   b) Give a note on application I/O interface.

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II/IV B.Tech. (Supple) DEGREE EXAMINATIONS, JUNE- 2019

First Semester

CSE/IT

OPERATING SYSTEMS

Time: Three Hours **Maximum marks:60**

Answer Question No.1 Compulsory **6X2=12 M**

Answer ONE Question from each Unit **4X12=48 M**

1. a) Define Operating System. List the objectives of an operating system
   b) What are the various security issues that arise in multiprogramming and time shared systems?
   c) What are the necessary conditions for the occurence of deadlock?
   d) Reasons for process terminations.
   e) Difference between internal and external fragmentation?
   f) What are the various attributes that are associated with an opened file?

UNIT-I

2. a) Explain the role of process control block in OS.
   b) Differentiate the following:
      i) Process Switching vs Context Switching
      ii) Clock interrupt Vs I/O interrupt

(OR)

3. a) Giving the various components and explain how a real-time OS is different from conventional Operating Systems.
   b) Explain the characteristic features of distributed and special purpose Operating systems.

UNIT-II

4. a) Explain in detail Readers and Writers Problem of Synchronization. Give a solution for second Readers-Writers problem.
   b) Write the program for mutual exclusion using semaphores.

P.T.O

(OR)

5. What does it mean by preemptive CPU scheduling algorithms? Explain the CPU scheduling mechanism in priority scheduling algorithms with suitable example(s).

UNIT-III

6. a) Explain all the strategies involved in deadlock detection and how it is recovered.
   b) Write a brief on concept of thrashing and demand paging.

(OR)

7. Draw the hardware diagrams of Paging and Segmentation and explain its functioning. Discuss alternatives for page table implementation.

UNIT-IV

8. a) Explain different approaches for Free space management.
   b) Explain the concepts: File sharing and Record blocking.

(OR)

9. Write a brief on disk scheduling and explain different disk scheduling algorithms with suitable examples.