CSE/CYS 213 (R-22)

Total No. of Questions : 10] [Total No.of Pages : 02

II/IV B. Tech. DEGREE EXAMINATIONS, AUGUST - 2024

First Semester

CSE / CYS

OPERATING SYSTEMS

Time : **Three Hours** Maximum : **70** Marks

Answer ONE Question from each Unit. 5x14=70 M

All Questions carry equal marks.

UNIT - I

1. a) Define operating system. Explain various types of operating system.

   b) Explain about concepts of virtual machine.

(OR)

2. Explain types of operating system.

UNIT - II

3. a) What is Round Robin Scheduling ? Illustrate with an example. Can it be useful for a single user system ? If yes, then explain. If no, then why not ?

   b) With a neat sketch explain process state diagram.

(OR)

4. a) What are the criteria for evaluating the CPU scheduling algorithm ?

   b) Explain about Multi processor scheduling.

UNIT - III

5. a) Explain about Inter Process communication.

   b) Explain about Dead lock detection and recovery.

(OR)

6. a) Explain the readers writers problem and its solution using the concept of semaphores.

   b) Explain deadlock detection algorithm with an example.

P.T.O.

UNIT - IV

7. a) What is virtual memory ? Discuss the benefits of virtual memory techniques.

   b) Explain about Internal and External Fragmentation.

(OR)

8. What is the need of Page Replacement ? Consider the following reference string 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1.

   Find the number of Page Faults with FIFO, Optimal Page replacement and LRU with four frames which are empty initially. Which algorithm gives the minimum number of page faults?

UNIT - V

9. a) Discuss in detail about file system backups.

   b) Explain about Boot block and bad blocks.

(OR)

10. Explain the following disk scheduling algorithm with proper diagram.

    a) FCFS.

    b) SSTF.

    c) SCAN.

    d) LOOK.

    e) C-SCAN.