P–1032

Pyq SET/CSE/MIT/C-203

M.Sc. (IT) (Second Semester) Examination, 2024-25

(New Course)

Operating System

: Two Hours] [Maximum Marks : 60

: Attempt any *four* questions. All *questions carry equal* marks.

(a) What is an operating system? Explain different types of operating systems in detail. Explain how operating system services are provided by system calls?

(b) What is the concept of virtual machine? How virtual machines can be created in a system? Describe the monolithic kernel and micro kernel.

a) What do you understand by context switching? Explain with the help of neat diagram. Write the difference between user level and kernel level thread?

) Discuss the process control block. Write the various type of information contained by PCB.

3. (a) Explain the deadlock detection algorithm for single and multiple instances. Discuss deadlock recovery in detail.

(b) Discuss the critical section problem and its solution. Explain the Petersons algorithm using example

4. (a) What is file system? Write the function of various file systems. Explain the key terms associated with disk scheduling.

(b) What is the importance of disk scheduling algorithm in operating system? Discuss the various disk scheduling algorithm with the help of suitable example.

5. (a) For 3 page frames, the following is the reference string :

7 0 1 2 0 3 0 4 2 3 0 3 2 1 2 0 1 7 0 1

How many page faults does the LRU and FCFS page replacement algorithm.

(b) What is thrashing? When does it happen and how does it affect performance.

6. (a) What is revocation of access rights? Explain the program threats and system threats with example. How threats can be monitored?

(b) What is the purpose of a TLB? Explain the TLB lookup with the help of block diagram explaining the h/w required.

7. Write the short notes on any three:

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(a) Access Matrix.

(b) Real Time Scheduling.

(c) Kernel Level Thread.

(d) Bankers Algorithm.

(e) Multi-level Queue.