



Avinashilingam Institute for Home Science and Higher Education for Women

Deemed to be University Estd. u/s 3 of UGC Act 1956, Category 'A' by MHRD (now MoE)

Re-accredited with 'A++' Grade by NAAC. CGPA 3.65/4, Category I by UGC

Coimbatore - 641 043, Tamil Nadu, India

Continuous Internal Assessment Test I – February 2025 Semester-II

Class: I PG
Major/Branch: Computer Applications

Time: 2 Hours
Max. Marks: 60

23MCAC10 Operating Systems

Course Outcomes:

1. Analyze various process states and apply deadlock recovery measures.
2. Implement mutual exclusion primitives and process Synchronization.
3. Organize and manage storage efficiently.
4. Organize and manage processors effectively.
5. Implement operating system security, protection mechanisms and compare various operating systems.

Part A

6x1 = 6 marks

Choose the Correct Answer

1. Each process in the operating system is represented by CO1K2
a. Program Control Block b. Process Control Block
c. Process conversion Block d. Program dependency
2. If a resource is preempted, the process cannot continue with its normal execution CO2K2
a. Aborted b. rolled back c. terminated 4. Queued
3. Kernel threads CO2K3
a. cannot be supported and managed directly by the operating system
b. can be supported and managed directly by the operating system
c. are supported below the kernel and are managed without kernel support
d. are supported by storage organization
4. To avoid deadlock _____ CO2K2
a. there must be a fixed number of resources to allocate
b. resource allocation must be done only once
c. all deadlocked processes must be aborted
d. inversion technique can be used
5. Semaphore is a/an _____ to solve the critical section problem. CO2K1
a. hardware for a system b. special program for a system
c. integer variable d. block
6. Contiguous memory allocation is the classical memory allocation model in which CO3K12
a. Same process is allocated in a different area in the memory
b. all the process is allocated a single contiguous area in the memory
c. Each process is allocated a single contiguous area in the memory
d. All of the above

Part B

3 x 6 = 18

Answer ALL questions

Each answer should not exceed 400 words or two pages

7. a. Briefly explain the Interrupt processing and its types. CO1K1
(or)
7. b. Highlight the use of Process Control Block. CO1K1

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| 8. a. Explain the storage management and strategies involved in storage. (or) | CO3K2 |
| 8. b. Explain in detail about the storage hierarchy with a neat diagram | CO3K1 |
| 9. a. Explain the concept of resource allocation graph (or) | CO2K2 |
| 9. b. Explain the concept of Bankers Algorithm with example | CO2K2 |

Part C

3 x 12 = 36

Answer ALL questions

Each answer should not exceed 800 words or four pages

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| 10. a. State and explain the process state transitions. (or) | CO1K1 |
| 10. b. Highlight on the four necessary conditions of Deadlock | CO1K2 |
| 11. a. Explain the concept of critical section and mutual exclusion in an operating system (or) | CO2K2 |
| 11. b. Explain the implementation of semaphore | CO2K23 |
| 12. a. Explain the concept of fixed partition multiprogramming (or) | CO3K2 |
| 12. b. Explain the concept of variable partition multiprogramming | CO3K2 |

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