



R. Sambath

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 I – August 2025
III Semester

Class: II UG
Major: Computer Applications

Time: 2 Hours
Max Marks: 60

23BCAC05 Operating Systems

Course Outcomes:

- CO1. Recall the concepts of file management.
 - CO2. Apply security aspects in appropriate situations.
 - CO3. Apply knowledge gained through processor scheduling to other applications.
 - CO4. Analyze features and limitations of operating systems.
1. Explore various other operating systems.

Part-A **6x1=6**

Choose the Correct Answer

1. Consider a computer C1 has n CPUs and k processes. Which of the following statement is False? CO1K3
- a. Maximum number of processes in ready state is k
 - b. Maximum number of processes in block state is k
 - c. Maximum number of processes in running state is k
 - d. Maximum number of processes in running state is n
2. The common mechanism for implementing mutual exclusion is. CO1K2
- a. Semaphores
 - b. Message passing
 - c. Shared memory
 - d. Interrupt
3. Which of the following is NOT a storage placement strategy in contiguous memory allocation? CO2K1
- a. First-fit
 - b. Best-fit
 - c. Worst-fit
 - d. Last-fit
4. The primary purpose of a cache memory is CO2K1
- a. To store frequently accessed data for faster retrieval
 - b. To provide long-term storage for files
 - c. To act as a backup for main memory
 - d. To manage the flow of data between CPU and peripherals
5. The function of a Memory Management Unit (MMU) is CO2K2
- a. To manage the CPU's cache.
 - b. To translate virtual addresses to physical addresses.
 - c. To manage the system's input/output operations.
 - d. To schedule processes for execution.
6. The scheduling algorithm prioritize the process that requests the CPU first is CO3K2
- a. Shortest-Job-First
 - b. First-Come, First-Served
 - c. Priority Scheduling
 - d. Round-Robin

3x6=18

Part-B

Answer ALL Questions

Answer should not exceed 400 words or two pages

7. a. Explain process control block with neat diagram. CO1K1
(or) CO1K2
7. b. Discuss about interrupts and context switching. CO2K3
8. a. Write about mutual exclusion primitives. CO2K2
(or) CO2K2
8. b. Demonstrate the concept of virtual storage. CO2K2
9. a. Write notes on segmentation. CO3K2
(or) CO3K2
9. b. Discuss about scheduling levels.

Part-C

3x12=36

Answer ALL Questions

Answer should not exceed 800 words or four pages

- | | |
|---|-------|
| 10.a. Illustrate process states and process state transitions.
(or) | CO1K3 |
| 10.b. Define Semaphore. Explain the types of semaphores in detail. | CO1K2 |
| 11.a. Illustrate about single user storage allocation and storage protection.
(or) | CO2K2 |
| 11.b. Explain memory hierarchy and management strategies. | CO2K2 |
| 12.a. Discuss about paging with direct mapping and pure associative mapping.
(or) | CO2K2 |
| 12.b. Demonstrate the functionality of FIFO and Round- Robin scheduling algorithms. | CO3K3 |

Staff in-charge: S.Anitha
Number of copies (SF Campus-II) :50