

Dr. Babasaheb Ambedkar Open University

Term End Examination February – 2026

Course	: BCA	Date	: 12-02-2026
Subject Code	: BCAMA-201/BCAOL-201	Time	: 03:00pm to 05:15pm
Subject Name	: Operating System and Software Installation	Duration	: 02.15 Hours
		Max. Marks	: 70

Section A

Answer the following (Attempt any three)

(30)

1. What are Objectives of Operating System? Explain in detail.
2. Explain Process States with diagram in detail.
3. What is concurrency in an operating system? Explain the major problems that arise due to concurrency.
4. Discuss various Scheduling Algorithms and Explain any one with example.
5. Define the concept of Paging and Segmentation.

Section B

Answer the following (Attempt any four)

(20)

1. Define Batch Processing in Operating System with advantages and disadvantages.
2. Define Real-time Processing in Operating System.
3. Explain Monolithic OS Structure.
4. What are two Process Scheduling Policies? Explain in brief.
5. What are various Principles of I/O Software?
6. Define the concept of Cryptography.

Section C

Part – A (Multiple Choice Questions)

(10)

Q-1 An operating system can best be described as a software that:

- A) Compiles user programs
- B) Manages computer hardware and provides services to applications
- C) Controls only input devices
- D) Works only during system startup

Q-2 Which operating system technique groups similar jobs together and executes them without user interaction?

- A) Time sharing
- B) Real-time processing
- C) Batch processing
- D) Distributed processing

Q-3 Spooling stands for:

- A) System Peripheral Operation Offline
- B) Simultaneous Peripheral Operation Online
- C) Sequential Processing of Logical Operations
- D) Shared Processing of Logical Operations

Q-4 Which operating system structure is also known as “The Big Mess”?

- A) Layered structure
- B) Microkernel structure
- C) Client–Server structure
- D) Monolithic structure

Q-5 A process is defined as:

- A) A program stored on disk
- B) A program under execution
- C) A system call
- D) A compiled program

Q-6 Which data structure stores all important information related to a process?

- A) Page table
- B) File control block
- C) Process Control Block
- D) Stack frame

Q-7 Threads are often referred to as:

- A) Independent programs
- B) Heavyweight processes
- C) Lightweight processes
- D) Kernel modules

Q-8 Which scheduling algorithm allocates CPU time in fixed time slices to processes?

- A) FCFS
- B) Priority Scheduling
- C) Shortest Job First
- D) Round Robin

Q-9 Which memory management technique eliminates external fragmentation?

- A) Segmentation
- B) Paging
- C) Swapping
- D) Contiguous allocation

Q-10 Authentication in an operating system is mainly used to:

- A) Allocate system resources
- B) Verify the identity of a user
- C) Encrypt files
- D) Improve system performance

Part – B (State whether the following statements are true or false)

(10)

- 1 An operating system hides the complexity of hardware components such as CPU, memory, and disk from the end user.
- 2 In serial processing systems, users had direct interaction with the computer during program execution.
- 3 Multiprogramming improves CPU utilization by allowing another process to execute when the current process is waiting for I/O.
- 4 In time-sharing systems, CPU switches between jobs so frequently that users experience quick response time.
- 5 In hard real-time operating systems, secondary storage and virtual memory are commonly used.
- 6 Distributed operating systems make the presence of multiple computers transparent to the user.
- 7 In a layered operating system, each layer can use services of all other layers directly.
- 8 System calls provide a programming interface through which user programs request services from the operating system.
- 9 Daemons are background processes that usually start during system boot and wait for service requests.
- 10 User-level thread implementation allows the kernel to schedule individual threads directly.
