

Dr. Babasaheb Ambedkar Open University
Term End Examination July – 2026

Course: BCAMA / BCAOL

Subject Name: Operating System and Software Installation

Subject Code: BCAMA-201/BCAOL-201

Date: 06-07-2026

Time: 3:00pm to 5:15pm

Total Marks: 70

Section A

Answer the following (Attempt any three)

30 Marks

1. Define an Operating System. Explain its functionalities and the activities performed by a modern operating system.
2. Explain the evolution of Operating Systems from wiring-up plug-boards to distributed processing.
3. Differentiate between Monolithic, Layered, and Client-Server OS structures with appropriate examples.
4. What is a Process? Explain the components of a process and the life cycle of a process using a state transition diagram.
5. Discuss the different types of disk scheduling algorithms with their advantages and disadvantages.

Section B

Answer the following (Attempt any four)

20 Marks

1. Describe the "Time Sharing" operating system and its advantages.
2. Explain the difference between Hard and Soft real-time systems.
3. Differentiate between internal and external fragmentation in memory management.
4. Define the necessary conditions for a deadlock to occur.
5. Explain the concept of "Paging" and how logical addresses are translated to physical addresses.
6. List and explain the primary objectives of system security.

Section C

Part – A (Multiple Choice Questions)

10 Marks

1. An Operating system is an example of:
A. Application software
B. System software
C. Utility software
D. None of above
2. Which scheduling algorithm is known as the "Elevator" algorithm?
A. FCFS
B. SSF
C. SCAN
D. C-SCAN
3. A process that is waiting for an event is in:
A. Running state
B. Ready state
C. Waiting state
D. Terminated state
4. Which of these is a component of a process?
A. Address space
B. Processor state
C. OS resources
D. All of above
5. The method used to define users' interaction with a system is called:
A. Authentication
B. Access Control
C. Cryptography
D. None of above
6. In which OS structure is the hardware and OS kernel considered together as hardware?
A. Monolithic
B. Virtual Machines
C. Exokernels
D. Layered
7. A "Logic bomb" is an example of:
A. Accidental data loss
B. Internal logical attack
C. External attack
D. Hardware error
8. Which memory allocation algorithm produces the largest leftover space?
A. First-fit
B. Best-fit

- C. Worst-fit D. Next-fit
9. A collection of physical separates, possibly heterogeneous computer systems networked to share resources is a:
- A. Desktop system B. Distributed system
C. Clustered system D. None of above
10. The MBR is found at which sector of a disk?
- A. Sector 1 B. Sector 0
C. Sector 10 D. None of above

Part - B (Do as Directed)

10 Marks

1. OS functions as a middleman between hardware and users. (True/False)
2. "Hold and Wait" is one of the necessary conditions for deadlock. (True/False)
3. _____ is a process of transforming a message to hide its meaning.
4. The "Big Bang" approach is the most recommended for all software installations. (True/False)
5. _____ is a technique for moving data directly between main memory and I/O devices without CPU intervention.
6. Windows 10 installation requires at least 8GB of disk space. (True/False)
7. _____ is a type of I/O device that is not addressable and has no seek operation.
8. A "Virus" is a snippet of code capable of replicating itself. (True/False)
9. What does the acronym "GUI" stand for?
10. Compaction is used to reduce external fragmentation. (True/False)