

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

Course	: BSCIT	Date	: 19/07/2026
Subject Code	: BSCIT-104	Time	: 11:30am to 01:45pm
Subject Name	: Fundamental of Operating System	Duration	: 02.15 Hours
		Max. Marks	: 70

Section A

Answer the following (Attempt any three) (30)

1. List and explain various types of Operating System.
2. Explain Deadlock in Operating Systems. Discuss the necessary conditions of deadlock.
3. Explain Disk Scheduling algorithms in detail.
4. Explain Protection and Security in Operating Systems.
5. Explain Input/Output Management in Operating Systems.

Section B

Answer the following (Attempt any four) (20)

1. Define Operating System Services.
2. Explain System Calls in brief.
3. Write a short note on Command Interpreter.
4. Differentiate between Internal Fragmentation and External Fragmentation.
5. Explain Thrashing in brief.
6. Write a short note on Device Drivers.

Section C

Part – A (Multiple Choice Questions) (10)

Q.1 Which Operating System is primarily designed to guarantee response within a specified time limit?

- | | |
|---------------------------------|-------------------------------|
| A) Batch Operating System | B) Real-Time Operating System |
| C) Distributed Operating System | D) Network Operating System |

Q.2 Which Operating System service enables communication between a user program and the kernel?

- | | |
|---------------------|----------------|
| A) Cache | B) System Call |
| C) Bootstrap Loader | D) Compiler |

Q.3 Which of the following is NOT one of the necessary conditions for deadlock?

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|---------------------|------------------|
| A) Mutual Exclusion | B) Hold and Wait |
| C) Preemption | D) Circular Wait |

Q.4 Which disk scheduling algorithm generally provides better average seek time by servicing the nearest request first?

- | | |
|---------|-----------|
| A) FCFS | B) SSTF |
| C) SCAN | D) C-SCAN |

Q.5 Spooling is primarily used to improve the efficiency of:

- | | |
|----------------------------|----------------------|
| A) CPU Scheduling | B) Memory Allocation |
| C) Input/Output Operations | D) Process Creation |

Q.6 Which component translates user requests into Operating System services?

- | | |
|------------------|------------------------|
| A) Device Driver | B) Command Interpreter |
| C) Scheduler | D) Compiler |

Q.7 Thrashing mainly occurs due to:

- A) Excessive CPU speed
- B) High page fault rate
- C) Small hard disk capacity
- D) Large cache memory

Q.8 Which software enables the Operating System to communicate with hardware peripherals?

- A) Linker
- B) Loader
- C) Device Driver
- D) Assembler

Q.9 Which Operating System is mainly intended for sharing resources among interconnected computers?

- A) Batch OS
- B) Network OS
- C) Embedded OS
- D) Stand-alone OS

Q.10 Which security mechanism verifies the identity of a user before granting access?

- A) Authentication
- B) Scheduling
- C) Fragmentation
- D) Paging

Part – B (State whether the following statements are true or false) (10)

- 1 Deadlock prevention attempts to eliminate at least one necessary condition for deadlock.
- 2 SCAN Disk Scheduling moves the disk head in only one direction throughout execution.
- 3 Device Drivers act as an interface between the Operating System and hardware devices.
- 4 Spooling allows multiple jobs to share an input/output device efficiently.
- 5 Authentication is used to verify the identity of a user.
- 6 External Fragmentation occurs only in fixed-size memory allocation.
- 7 Thrashing results in poor system performance due to excessive paging activity.
- 8 Network Operating Systems support resource sharing over connected computers.
- 9 Every System Call can be executed directly without Operating System support.
- 10 Caching helps reduce average data access time.
