

QP-6371

Total No. of Pages : 3

Seat No.

**MAR\_APR 2025 SUMMER EXAMINATION**  
**12329 Bachelor of Computer Application(BCA) NEP 2.0**  
**Sub. Name: Operating System**  
**Sub. Code: 109900**

Day and Date: JUNE ,11-06-2025

Total Marks: 40

Time: 10:30 AM To 12:00 PM

Instructions: 1. Figures to the right indicate full marks

Special Inst.: 1. Que.1 and Que.6 are compulsory.

2. Attempt any TWO questions from Que.No.2 to Que.No.5.

Q1) Solve following MCQ.

[10]

i. Which of the following is used in mutual exclusion?

- A. Signals
- B. Buffers
- C. Semaphores
- D. Page Tables

ii. Demand paging is based on:

- A. Loading all pages at once
- B. Keeping pages locked in memory
- C. Loading pages only when required
- D. Swapping pages periodically

iii. The **First-Come, First-Served (FCFS)** scheduling algorithm is:

- A. Preemptive
- B. Non-preemptive
- C. Round-based
- D. Random

iv. The primary goal of an operating system is to:

- A. Provide user interface
- B. Execute user applications
- C. Manage system resources efficiently
- D. Run in the background

v. A process control block (PCB) does not contain:

- A. Process state
- B. Program counter
- C. Register contents
- D. Source code

vi. Which of the following is NOT a scheduling criterion?

[1]

P.T.O.

- A. CPU utilization
- B. Throughput
- C. Latency
- D. File size

vii. Which of the following is true about segmentation?

- A. Eliminates external fragmentation
- B. Uses fixed-size blocks
- C. Divides memory logically
- D. Uses a single contiguous memory area

viii. What is the purpose of system calls in an Operating System?

- A. Compiling programs
- B. Allowing user-level processes to request services from the OS
- C. Creating GUI
- D. Formatting storage

ix. Banker's algorithm is used for:

- A. CPU scheduling
- B. File handling
- C. Deadlock avoidance
- D. Interrupt handling

x. MFT and MVT are related to:

- A. CPU scheduling
- B. Memory allocation
- C. File system
- D. Deadlocks

Q2) What is Operating System? Explain any two types of Operating Systems. [10]

Q3) Describe the life cycle of a process in an operating system with suitable diagram. [10]

Q4) Describe the concept of virtual memory. How is it implemented using paging and segmentation? [10]

Q5) Explain the Banker's Algorithm for deadlock avoidance in detail. [10]

Q6) Write notes on (Any TWO out of FOUR) [10]

- a. Process Control Block
- b. System Calls
- c. Deadlock Detection and Recovery
- d. Swapping