

**Roll No.**

**Total No. of Pages : 02**

**Total No. of Questions : 09**

**B.Tech. (Information Technology) (Sem.-4)**

# OPERATING SYSTEMS

**Subject Code : BTIT-402-18**

**M.Code : 77539**

**Date of Examination : 02-06-23**

**Time : 3 Hrs.**

**Max. Marks : 60**

**INSTRUCTIONS TO CANDIDATES :**

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

## SECTION-A

1. Write briefly :

- List the various operating system services.
- What do you mean by Time-sharing systems?
- What is a thread?
- What is process control block?
- Differentiate between Deadlock Prevention and Deadlock Avoidance.
- Explain in brief about the term Compaction.
- Explain briefly the term Demand Paging
- What is critical section problem?
- Explain in brief about mutual exclusion in reference to Inter-process communication.
- Explain in brief about Bad Blocks.

### SECTION-B

2. What is a process? Explain about process scheduling? Explain the different types of schedulers in detail.
3. Write a detailed note on Reader's & Writer's problem.
4. Write a detailed note on Deadlock Detection and Recovery.
5. Write short note on following in reference to memory management :
  - a) Page Fault
  - b) Working set
6. Write a detailed note on Direct Memory Access.

### SECTION-C

7. Explain the following structure of an operating system in detail :
  - a) Layered
  - b) Monolithic
  - c) Microkernel
8. Write a detailed note on following :
  - a) Device independent I/O software
  - b) Device Controllers
  - c) Interrupt handler
9. Write a detailed note on following in reference to Inter-process communication :
  - a) Dining philosopher problem
  - b) Monitors

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**