

**Roll No.**

**Total No. of Pages : 02**

**Total No. of Questions : 09**

**M.Sc.(IT) (2016 to 2018) (Sem.-1)**

# OPERATING SYSTEM

**Subject Code : MSIT-104**

**M.Code : 72520**

**Time : 3 Hrs.**

**Max. Marks : 60**

**INSTRUCTION TO CANDIDATES :**

1. **SECTIONS-A, B, C & D contains TWO questions each carrying TEN marks each and students has to attempt any ONE question from each SECTION.**
2. **SECTION-E is COMPULSORY consisting of TEN questions carrying TWENTY marks in all.**

## SECTION A

1. Write a detailed note on following types of operating systems
  - a) Distributed (3)
  - b) Embedded and Time sharing (4)
  - c) Microkernel (3)
2. Write a detailed note on various Components of Operating System. (10)

## SECTION-B

3. Explain the following terms in detail :
  - a) Types of scheduler (3)
  - b) Multiprocessor scheduler (3)
  - c) Recovery from deadlock (4)
4. Write a detailed note on deadlock avoidance. (10)

## SECTION-C

5. Write a detailed note on Paging scheme of Memory management. (10)
6. Explain the following page replacement policies with an example :
  - a) Optimal (3)
  - b) Least Recently Used (4)
  - c) First in First Out (3)

### SECTION-D

7. Write a detailed note on following terms :
- a) Directory structure (5)
  - b) File Access Methods (5)
8. Write a detailed note on following terms in relation to security and protection :
- a) Security threats (5)
  - b) Security policies and Mechanisms (5)

### SECTION-E

9. Write briefly : (2×10=20)
- a) Explain in brief about virtual systems.
  - b) Write a brief note on System calls.
  - c) Explain in brief about context switching.
  - d) Write two advantages of Multithreads.
  - e) Differentiate between Internal and External Fragmentation.
  - f) Write advantages of Virtual memory Concept.
  - g) Explain the term Dirty bit in brief.
  - h) Define the term buffering and caching.
  - i) List various file attributes.
  - j) Differentiate between seek time and rotational latency.

**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.**