

Roll No. 

Total No. of Pages : 02

Total No. of Questions : 09

M.Sc.(IT) (2015 Onwards) (Sem.-1)

**OPERATING SYSTEM**

Subject Code : MSIT-104

Paper ID : [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.
3. Any missing data may be assumed appropriately.

**SECTION-A**

1. Define Operating System? What are the types of operating system?
2. Give the introduction of Layered, Monolithic and Microkernel architecture of operating system.

**SECTION-B**

3. Find Waiting Time and Turnaround time for given Process using FCFS and SCF Algorithms.

Process	Arrival Time (ms)	Burst Time (ms)
P1	1	5
P2	2	4
P3	2	7
P4	3	2

4. Write overviews of Inter process Communication and synchronization.

### SECTION-C

5. Discuss basic memory management techniques with their advantages and disadvantages.
6. Explain different Page Replacement Algorithms used in Demand Paging.

### SECTION-D

7. Explain different Allocation methods used in operating system.
8. Discuss the security threats on operating system. Write the steps to protect the operating system from various attacks.

### SECTION-E

**9. Write briefly :**

- a) What are real time systems?
- b) Define Threads.
- c) Differentiate Preemptive and Non Preemptive scheduling.
- d) Differentiate Paging and Segmentation.
- e) Draw block diagram of Process Control Box.
- f) Write the syntax of LRU Algorithm.
- g) What is the role of DMA?
- h) What is RAID?
- i) Discuss random access file structure.
- j) Write steps of disk formatting.