

**2111000606030001**  
**EXAMINATION FEBRUARY-MARCH 2024**  
**B. SC. (I.T.) M. SC (I. T.) 5 YEAR**  
**(INTEGRATED COURSE) (SIXTH SEMESTER)**  
**OPERATING SYSTEM-LEVEL 3**

[Time: As Per Schedule]

[Max. Marks: 70 ]

**Instructions:**

**1. Fill up strictly the following details on your answer book**

- a. Name of the Examination: **B. SC. (I.T.) M. SC (I. T.) 5 YEAR (INTEGRATED COURSE) (SIXTH SEMESTER)**
- b. Name of the Subject: **OPERATING SYSTEM – LEVEL 3**
- c. Subject Code No: **2111000606030001**

2. Sketch neat and labelled diagram wherever necessary.
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.

Seat No:

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Student's Signature

**Q.1 Answer in Short (Any Seven):**

**14**

- 1) Define pre-emptive scheduling.
- 2) What is starvation?
- 3) Explain external fragmentation in short.
- 4) What do you mean by Long-term Scheduler?
- 5) What is Aging? Why it is required?
- 6) Define Time Sharing OS.
- 7) What is redirection in Unix? How it is done?
- 8) List out different disk scheduling algorithms.

**Q.2 Answer the following: 14**

(A) Consider the following Reference string: 0 1 2 3 0 1 4 0 1 2 3 4 and we have physical memory of 3 frames, then calculate page faults using FIFO Algorithm.

(B) What is an operating System? Explain any two types of OS in detail.

**OR**

What is page fault? How to handle page fault during page replacement?

**Q.3 Write a note on following (Any Two): 14**

(A) Write a note on: Free Space Management and its techniques.

(B) Write a note on: Interprocess Communication.

(C) Why process synchronization is required? How semaphores achieve synchronization?

**Q.4 Answer the following (Any Two): 14**

(A) What is a deadlock? Explain Deadlock Detection in detail.

(B) Explain conditional and looping statements of Unix.

(C) What is a Thread? Explain the concept of Multithreading in detail.

**Q.5 Write a note on following (Any Two): 14**

(A) Preemptive Round-robin algorithm.

(B) Explain about Linked Allocation with respect to the file system.

(C) Explain about Physical and Logical Address binding.

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