

SE SEM-IV COMPN C-scheme May 12026
Date: 19/05/2026

Duration: 3hrs

[Max Marks: 80]

- N.B.: (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.

- 1 Attempt any **FOUR** [20]
 - a Discuss types of File organization
 - b Describe the various criteria used for evaluating CPU scheduling algorithms.
 - c Explain Demand Paging
 - d Write a short note on Interprocess Communication (IPC) in operating systems
 - e Explain the Functions of OS
- 2 a Discuss in detail the organization of the I/O Function [10]
 - b Explain the Process State Diagram in an operating system with a neat diagram. [10]
- 3 a Explain the different memory allocation strategies used in operating systems. [10]
 - b What is the Producer-Consumer problem in process synchronization? How is it solved using semaphores? [10]
- 4 a Explain the virtual memory concept with respect to paging and segmentation [10]
 - b Explain the types of Operating System [10]
- 5 a What is a deadlock? Give a necessary and sufficient condition for deadlock [10]
 - b Explain three types of schedulers with a proper diagram illustrating the connection between them. [10]
- 6 a Consider the following page reference string: 7, 2, 3, 1, 2, 5, 3, 4, 6, 2, 3, 1, 5. [10]

Assume frame size=3. How many page faults would occur for FIFO, Optimal and LRU algorithms?

 - b Discuss various Disk scheduling algorithms with examples [10]
