

(3 Hours)

Total Marks: [80 Marks]

Note- 1 Question No.1 is Compulsory

2 Attempt any four Questions between Question No.2 to 7

- Q 1. A) What is deadlock? What are the necessary conditions for deadlock to occur 10
B) Explain different file allocation techniques. 10
- Q2 A) Differentiate between the following
i) Monolithic Kernel & Microkernel
ii) User-level Thread & Kernel-level Thread
B) What do you mean by concurrency control? What are counting semaphores and binary semaphores? 05
- Q3 A) What do you mean by process? Explain the 5-state Process in detail. 10
B) Reference string 6 0 1 2 0 4 3 0 2 6 3 2 0 1 6 is given. How many page faults will this occur for the following algorithm?
a) LRU, b) FIFO, c) Optimal Replacement.
- Q4 A) What is Semaphore? How semaphores are used to solve the Producer Consumer problem? 10
B) Explain the concept of spooling and explain how it is different from buffering. 05
- Q5 A) Explain the file allocation methods in detail with a suitable example. 10
B) Explain Direct Memory access in detail. 05
- Q6 A) Define the kernel of the operating system. Explain different types of kernels in detail. 10
B) Explain Linker and Loader. 05
- Q7 Write short notes on: (Any three) 15
A) Compiler and Assembler
B) Android OS
C) Race Condition
D) Multithreading
E) Monitors