

2031
M.Sc. Information Technology
First Semester
MS-42: Operating System Concepts

Time allowed: 3 Hours

Max. Marks: 80

NOTE: Attempt five questions in all, including Question No. IX (Unit-V) which is compulsory and selecting one question each from Unit I – IV.

x-x-x

UNIT – I

- I. Explain historical background of operating system and different functions of Operating System in detail. (16)
- II. a) Elaborate Process states in detail.
b) Explain Pre-emptive scheduling algorithms in detail. (6,10)

UNIT – II

- III. a) Explain Critical Section Problem and Race Condition in detail.
b) Describe Dining Philosopher Problem. (10,6)
- IV. Explain System Deadlock with necessary conditions and Banker's algorithm in detail.

UNIT – III

- V. Explain Cache memory and Associative memory and Set associative in detail. (16)
- VI. a) Explain Thrashing in detail.
b) Elaborate Demand Paging. (2x8)

UNIT – IV

- VII. a) Explain different files types in detail.
b) Elaborate Sequential and Direct memory access methods in detail. (6,10)
- VIII. Explain Disk scheduling with types in detail. (16)

UNIT – V

- IX. Elaborate: -
 - a) Non- Pre-emptive Scheduling
 - b) Context Switch
 - c) Swapping
 - d) Multitasking (4x4)

x-x-x