

FOURTH SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/  
TECHNOLOGY— MARCH, 2016

**OPERATING SYSTEMS**

(Common for CT, CM and IF)

[Time : 3 hours

(Maximum marks : 100)

PART— A

(Maximum marks : 10)

Marks

I Answer the following questions in one or two sentences. Each question carries 2 marks.

1. Give the function of compiler.
2. What is thread ?
3. Describe critical section problem.
4. What is seek time ?
5. Differentiate between logical address and physical address. (5×2=10)

PART — B

(Maximum marks : 30)

II Answer *any five* of the following questions. Each question carries 6 marks.

1. Explain multiprogramming operating system.
2. Differentiate between pre-emptive and non pre-emptive scheduling.
3. Explain fragmentation.
4. Explain the concept of virtual memory.
5. Explain different memory allocation strategies.
6. What is deadlock ? Explain its causes.
7. Explain briefly about caching and buffering. (5×6=30)

## PART—C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

## UNIT—I

III Explain the different components of operating systems. 15

OR

IV (a) Differentiate between time sharing and realtime systems 6

(b) Discuss about assembler, interpreter and loader. 9

## UNIT—II

V (a) What is PCB ? Explain its structure. 6

(b) Discuss the different states of a process with state diagram. 9

OR

VI (a) Explain the different CPU scheduling criteria. 6

(b) Explain SJF and Round Robin cpu scheduling algorithms with example. Compare their average waiting time and average turn around time. 9

## UNIT—III

VII Explain paging. Compare with segmentation. 15

OR

VIII (a) What is thrashing ? Explain. 6

(b) What is Belady's Anomaly ? Compare FIFO with LRU page replacement algorithm. 9

## UNIT—IV

IX (a) Explain different file operations. 6

(b) What is directory structure ? Explain three structured directory structure. 9

OR

X (a) Explain the structure of magnetic disk. 6

(b) Explain the different disk scheduling algorithms. 9