

Subject : Elective - III e) Operating Systems (Systems)

Day : Friday
Date : 10/06/2016



Time : 02.00 PM TO 05.00 PM
Max Marks : 80 Total Pages : 1

N.B.

- 1) Attempt any **FIVE** questions from Section – **I** and attempt any **TWO** questions from Section – **II**.
- 2) Answers to both the sections should be written in the **SAME** answer book.
- 3) Figures to the right indicate **FULL** marks.

SECTION – I

- Q.1** Explain various types of operating systems with their merits and demerits. **(10)**
- Q.2** Explain process state transition in detail. **(10)**
- Q.3** What is semaphore? Describe busy wait implementation of semaphore. **(10)**
- Q.4** Explain memory management with linked list and bit map. **(10)**
- Q.5** Explain various types of file organizations with their advantages and disadvantages. **(10)**
- Q.6** Discuss various structures of operating systems. **(10)**
- Q.7** Write short notes on **(Any TWO)**: **(10)**
- a) DMA
 - b) Device drivers
 - c) Second chance page replacement algorithm

SECTION - II

- Q.8** What is deadlock? Give the conditions for the occurrence of the same. How to prevent deadlock? **(15)**
- Q.9** a) Justify “Operating system increases the productivity of end users as well as system resources”. **(08)**
- b) Explain the concept of interprocess synchronization with its need. **(07)**
- Q.10** Consider the following scenario. **(15)**
- | Process | Run – time (Minutes) |
|---------|----------------------|
| P1 | 7 |
| P2 | 9 |
| P3 | 3 |
| P4 | 4 |
- Calculate average turn-around time and waiting time in case of:
- i) First come first served
 - ii) Shortest job first

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