

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

Day : Thursday
Date : 15/12/2016



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

N.B.:

- 1) Attempt **ANY FIVE** questions from Section – **I**. Each question carries **10** marks.
- 2) Attempt **ANY TWO** questions from Section –**II**. Each question carries **15** marks.
- 3) Answers to both the sections should be written in the **SAME** answer book.

SECTION – I

- Q.1 Explain the structure of operating systems with the help of suitable diagrams.
- Q.2 What is semaphore? Discuss busy-wait implementation of semaphore.
- Q.3 Describe memory management with paging.
- Q.4 Explain file system implementation in detail.
- Q.5 Explain the terms:
 - a) Device drivers
 - b) Interrupt handler
 - c) Device controllers
- Q.6 What is process? Explain relationships amongst processes with appropriate example.
- Q.7 Write short notes on **any TWO** of the following:
 - a) Multiprocessing systems
 - b) File system security
 - c) Design issues for paging

SECTION - II

- Q.8 What is deadlock? Give the conditions for occurrence of it. Also discuss various strategies to avoid the same.
- Q.9 Consider a situation in which the pages are referred in the following sequence.
0, 1, 3, 2, 1, 2, 0, 3, 2, 3, 0, 1
Find which page should be replaced at the end using LRU with matrix. Also explain the algorithm in brief.
- Q.10 Discuss any four process management algorithms with their merits and demerits.

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