

67142

**MCA 3rd Semester (New) with new
notes full and Re-appear
candidates Examination-
December, 2013
Operating Systems
Paper MCA-302**

Time : 3 hours

Max. Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

Note : Question No. 1 is compulsory. Attempt any **four** other questions, selecting one question from each Unit. All questions carry equal marks.

1. (a) What do you mean by Distributed System ?
(b) What is Thread ? Explain.

- (c) Define and explain Virtual Memory.
- (d) What is Page replacement ? Explain.
- (e) Differentiate internal and external fragmentation.
- (f) What do you mean by UNIX operating system ? Explain.
- (g) What are Kernel modules ?
- (h) What are semaphores ?

UNIT - I

2. (a) What is Operating System ? Why do we need operating system ? Discuss the various services provided by the operating system. Also describe the various functions of Operating System.
(b) What is a process in a computer system ? What is the main objective of the process management module of an operating system ?
3. (a) What do you mean by CPU Scheduling ? Also explain the concept of Multiple-

Processor scheduling and Real-Time scheduling in detail.

- (b) Differentiate among the following terms Multiprogramming, Multiprocessing, Timesharing and multitasking.

UNIT - II

4. (a) What is swapping ? How does it help in memory management ? Explain.
- (b) What do you mean by paging ? Explain how paging works. What is difference between a page and a page frame ? How does paging differ from segmentation ?
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5. Explain the following in detail :
- (a) Demand Paging
- (b) Page Replacement Algorithm.

UNIT - III

6. Explain the following in detail :
- (a) File System Structure
- (b) Directory Management

7. What do you mean by critical section ? A solution to the critical section problem must satisfy three requirements. Discuss through algorithm ?

UNIT - IV

8. (a) What is deadlock ? Describe various methods for deadlock preventions ? Explain.
- (b) Write note on Disk scheduling.
9. (a) What do you mean by Shell Programming ? Explain different types of Shell in detail. Also describe the concept of vi editor.
- (b) What do you mean by Linux Operating System ? Differentiate between the Linux and window NT.

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