Roll No. .....

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 ?

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.