

Roll No. ....

**67142**

**M.C.A. 3rd Sem. (with new notes)  
(Current Scheme)**

**Examination-December, 2014**

**Operating Systems**

**Paper-MCA-302**

**Time . 3 hours**

**Max. Marks : 80**

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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.**

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**Note :** Question no. 1 is **compulsory**. Attempt any **four** questions from the remaining four units selecting at least **one** question from each unit. All questions carry equal marks.

**Unit-I**

1. (a) What do you mean by distributed system ?

- (b) Explain various operating system services ?
- (c) What is thrashing ? Explain.
- (d) What is page replacement ? Explain.
- (e) What are different types of partitions and mounting ?
- (f) Explain various functions of operating system.
- (g) What are Kernel modules ?
- (h) What is disk scheduling ? Explain.

### **Unit-I**

2. (a) What is an operating System ? Explain the role of an operating system as a resource manager of a computer system.
- (b) What do you mean by multiprogramming system ? How does it differ from a multitasking system ? Explain.

3. (a) What is a process in a computer system ? What is the main objective of the process management module of an operating system ?
- (b) What do you mean by CPU scheduling ? Also explain the concept of multiple-processor scheduling and real-time scheduling in detail.

### **Unit-II**

4. (a) What is swapping ? How does it help in memory management ? Explain.
- (b) What is paging ? What are the advantages and disadvantages of paging ? Also explain the concept of segmentation with paging in detail.
5. Explain the following in detail :
- (a) Logical and physical address
- (b) Virtual memory
- (c) Demand paging

### Unit-III

6. (a) What is a file system ? Explain the different access methods of information from a file in detail.
- (b) What do you mean by directory structure ? Explain.
7. What do you mean by critical section ? A solution to the critical section problem must satisfy three requirements. Discuss through algorithms.

### Unit-IV

8. What is deadlock ? What are the various strategies to deal with deadlock ? Explain.
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.