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Roll No.

MCA-502

M. C. A. (Fifth Semester) EXAMINATION, June, 2012

UNIX AND SHELL PROGRAMMING

(MCA-502)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 40

Note : Attempt any *five* questions. All questions carry equal marks.

1. Discuss the following in brief : 20
 - (a) Critical region
 - (b) Super block
 - (c) User file descriptor
 - (d) System kernel
 - (e) Inode
2. (a) Describe any *one* technique of process synchronization used in Unix. 10
 - (b) What are awk patterns ? Describe BEGIN and END patterns. 10
3. (a) What are the fields contained in inodes ? Briefly describe the need of each of these fields. 10
 - (b) Discuss upon advantages and disadvantages of buffer cache.

4. (a) Write a shell script to display all the numbers that are visible by 3 and 5 both within a particular range. 10
 - (b) What do you understand by "context switch" ? What steps are followed in a context switch ? Discuss all possible states of process. 10
5. (a) Discuss the file system structure. 10
 - (b) Discuss the scenarios in detail for retrieval of a buffer. 10
6. (a) Describe Linux structure with its advantages over Unix. 10
 - (b) Explain the following shell statements taking suitable shell script : 10
 - (i) case
 - (ii) while
 - (iii) until
7. (a) Compare and contrast messages, shared memory and semaphore mechanism. 10
 - (b) What is the difference between the following vi commands ? 10
 - (i) :w
 - (ii) :q1
 - (iii) :wq
 - (iv) zz
8. Write short notes on any *four* of the following : 20
 - (a) Interprocess communication
 - (b) Unix security features
 - (c) Socket
 - (d) GUI
 - (e) State transition