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**CS-02**

00162

## PGDCA / MCA (I Year) / BCA

### Term-End Examination

### June, 2010

## CS-02 : INTRODUCTION TO SOFTWARE

*Time : 2 hours* *Maximum Marks : 60*

***Note :*** *Question number **1** is **compulsory.** Attempt **any three** questions from the rest.*

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**1.** (a) Design an algorithm and draw a corresponding flow chart to convert binary number to hexadecimal number. **6**

(b) Write a shell program to find Greatest Common Divisor (GCD) for the two given numbers. **6**

(c) Compare and contrast the disk space management methods, the linked list with Bitmap method. **6**

(d) Construct context-free grammar for conditional expression in "C" language. **6**

(Example : $x = (y < z) \ ? \ y : z;$)

(e) Explain the differences between internal and external fragmentation. **6**

2. (a) Explain the differences between the following : 6

(i) Third generation and fourth generation languages.

(ii) Function and subroutine.

(iii) Compiler and Interpreter.

(b) Discuss the functionality and implementation of two pass assembler. 4

3. (a) Discuss the similarities and differences between paging and segmentation. 5

(b) What is the basic philosophy of X-Windows ? How is it different from the rest of GUIs ? 5

4. (a) Define UNIX command for the following : **1x5=5**

(i) To count the number of users who are currently logged in.

(ii) To change the password.

(iii) To shut down the system at a particular time.

(iv) To print the file names and their file sizes in the current directory.

(v) To terminate the particular process.

(b) List the major activities performed in the development of a software product. Also mention the limitations of the development cycle. 5

5. (a) Explain the important features of CASE tools. 5

(b) What are conditions that characterize deadlock ? Explain the occurrence and avoidance of deadlock graphically among 3 processes and 3 resources. 5