BCA 1st Semester Examination, January–2009

COMPUTER FUNDAMENTALS AND

PROGRAMMING

Paper – BCA-101

Time allowed : 3 hours]   [Maximum marks : 75

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

1. (a) What do you understand by 'Structured Programming' ? Explain the meaning and relevance of various constructs used for structured programming.

   (b) What is meant by 'Program Style' ? What are the important features of a good program style ? Give practical examples.

2. (a) What is a number system ? Which number system is followed in digital computers and why?

   (b) Find out the values of X, Y and Z in the following :

   $$(65.875)_{10} = (X)_2 = (Y)_8 = (Z)_{16}$$

3. (a) What is a digtal computer ? Explain its anatomy and working of the same through its block diagram.

   (b) What is meant by a Character Code ? Name two character codes and differentiate between the same.

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4. (a) What is meant by 'Problem Solving' ? Discuss the various stages in problem solving on a computer. State the importance of flow-chart in problem solving on a computer.

(b) What is an algorithm ? Outline the important characteristics of a reasonably good algorithm. Write an algorithm for finding out the HCF of two given integer numbers and also draw the flowchart for the same.

5. (a) Write a program in C to reverse the digits of a given integer number N and to check whether given integer number N is a Palindrome or not.

(b) Write a recursive function with one integer parameter that returns the factorial of its parameter.

6. (a) Explain the syntax of Switch construct with its rules. Illustrate.

(b) Compare and contrast do-while() and while() constructs in C.

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7. (a) Discuss briefly any two parameter passing mechanisms with their relative merits and demerits.

    (b) What are command-line arguments ? Illustrate their use through suitable examples.

8. (a) What makes C a system programming language ? Justify your answer.

    (b) What is meant by 'Data Type' ? List the various data-types supported by C language and briefly explain every data-type by giving suitable examples.