Exam. Code : 103202

Subject Code : 1006

B.A./B.Sc. 2nd Semester

COMPUTER SCIENCE

(Programming Using C)

Time Allowed—3 Hours] [Maximum Marks—75

Note :— (1) Attempt any **5** questions.

(2) All questions carry equal marks.

1. (a) What are flowcharts ? How are these different from algorithms ? Illustrate the use of each through suitable examples. 9

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

   $(A5.8)_{16} = (X)_8 = (Y)_{10} = (Z)_2$ 6

2. Explain the following :

   (a) Character Codes 7

   (b) Algorithm and its characteristics. 8

3. (a) Why 'C' language is named so ? Discuss its origin and provide the general structure of 'C' language program detailing out every construct in it. 9

   (b) What are the rules applicable for jumping in and out of various types of loops in C language ? 6

4. Differentiate between the following :

   (a) Automatic, External and Static variables 8

   (b) Call-by-value and call-by-reference 7

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5. (a) What are 'data-types'? What are the data-types supported by C language ? Illustrate the importance of each. 10

   (b) What are the technical reasons for adopting Binary Number System in Digital Computers ? Explain. 5

6. Differentiate between the following :

   (a) printf() and scanf() 5

   (b) switch and if-else-if statements 5

   (c) for and do-while loops. 5

7. Explain the following :

   (a) Union and Structure 8

   (b) Formatted console I/O Functions. 7

8. (i) Explain the following :

   (a) Recursion

   (b) Types of Programming Errors 8

   (ii) What is meant by hierarchy of operators ? Provide a brief outline of all operators supported by C language along with their hierarchy within expressions and suitable examples. 7