Bachelor level/ BIT/ 1st Semester	Full Marks: 60
Time: 3 hours	Pass Marks: 30

Subject: Fundamentals of Programming (BIT414)

Candidates are required to give their answer in their own words as far as practicable. The figures in the margin indicate full marks.

Group A

Very short answer questions (Attempt *all*) [8x2 = 16]
1. What do you mean by a Constants in 'C'? Give examples.
2. What is the purpose of scanf() and printf() statement?
3. Explain ternary operator with example.
4. Define recursion with an example.
5. Explain pointer arithmetic.
6. Create a structure to represent a mobile phone. Consider the properties of the mobile phone you like for defining structure members.
7. What are the symbols used in flowchart?
8. Differentiate between break and continue statements.

Group B

Short answer questions (Attempt *Any Five*) [5x4 = 20]
9. Explain the basic data types available in C.
10. Write a program to find area of triangle from sides of the triangle (a, b and c). Use the formula to calculate area: $A = \sqrt{s(s-a)(s-b)(s-c)}$ where s = (a + b + c)/2
11. Write a program to find largest of three numbers using function.
12. Explain the working of for loop with syntax and examples.
13. Write a program to display maximum element in an array of 10 numbers.
14. Write a program to count the number of words in a given sentence.

Group C

Long answer questions (Attempt *Any Three*) [3x8 = 24]
15. Compare and contrast multiway if and switch statement. Illustrate switch statement with an example.
16. What do you mean by multi-dimensional array? Write a program to accept two 3x3 matrices and compute their product. Display all the three matrices.
17. Write the advantages of functions. Explain function call, function definition and function declaration with an example.
18. Write a program that writes 100 records of books to a file 'book.txt' where each book record consists of title, author, price and publication. Then, from the same file, display all the book records that have price under 500 rupees.

The End