Bachelor of Computer Application (Revised) (BCA) Term-End Examination December, 2018

COMPUTER ORIENTED NUMERICAL TECHNIQUES LAB

Time : 1 Hour　　　　　　　　　　　　*Maximum Marks : 50*

Note : (i)　There are *two* questions in this paper and both are compulsory.

(ii)　Each question carries 20 marks.

(iii)　Rest 10 marks are reserved for viva-voce.

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1. Write a program in C or C++ to demonstrate the operation of the following operators, for the function $f(x) = x^2 + x + 7$:   20

   (a) Forward Difference Operator

   (b) Central Difference Operator

   The given interval is [2, 7] and step size (h) is 1.0.

2. Write a program in C or C++ to calculate the value of e^x by using its series expansion, given below :   20

$$e^x = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \dots$$

   Note : Evaluate e^x only upto first three terms.

   Also find the value of e^x by using the inbuilt function and compare it with the result produced by your program.