

Paper Code & Roll No. to be filled in your Answer Book

Roll No.

Odd Semester Examination-2016

**BCA (Semester-III)**

**COMPUTER BASED NUMERICAL  
TECHNIQUES**

[Time : 3 Hours]

[Maximum Marks : 70]

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

1. (a) What are the application of CBNT? Describe any three numerical software.
- (b) What are errors in numerical computation? Explain with types. Find the relative error if  $2/3$  is approximated to 0.667.
2. (a) Find the root of equation  $x^3 - 4x - 9 = 0$  using Bisection method upto three decimal place.
- (b) Apply Gauss Seidal iterative method to solve the equation :

BCA-301/360

(1)

[P.T.O.]

(104)

(901)

6. (a) Apply Bessel's formula to obtain  $f(25)$ . Given  $f(20)=2854$ ,  $f(24)=3162$ ,  $f(28)=3544$ ,  $f(32)=3992$ .
- (b) Find the value of  $y$  for  $x=0.1$  by Picard's method, given that  $dy/dx = (y-x)/(y+x)$  and  $y(0)=1$ .
7. (a) What do you mean by interpolation? Explain with types.
- (b) Apply Runge-Kutta method to find an approximate value of  $y$  when  $x=0.2$ , given that  $dy/dx = x+y$  and  $y=1$  when  $x=0$ .

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