**Applied Question**

A ball has initial temperature at 1000K, what will be its temp after 500 secs ()? The differential equation of the temp of the ball is given by

, 

Employ the 4th order Runge-Kutta method to evaluate , , where



**Note**: Round off  values to 6 decimal places and  values to 4 decimal places

**Solution:**

**First Iteration:**

 1

 1

 1

 1

 1

**Second Iteration:**

 ,

The Approximation Temperature at  is analyzed as follows;

 1 1

 1

 1

  1

**(10mks)**