**********TRAPEZOIDAL RULE**********

PROBLEM NO:07 **DATE:01/04/2023**

ROLL NO:1120

STATEMENT OF THE PROBLEM:

Evaluate the following integral by Trapezoidal rule correct upto 3D using 13 ordinates.

$$\int_{5^\circ}^{20^\circ} \frac{x^3 + cosbx}{\sqrt{cos^4x + bsin^4x}} dx$$

Here b=$0.1 + \frac{R}{10}$,where R denotes the last digit of your roll number.

WORKING RULE: TRAPEZOIDAL RULE

Composite Trapezoidal rule for number of ordinates ($n + 1$) ≥ 3:

$$I_T^C = \frac{h}{2}[(y_0 + y_n) + 2(y_1 + y_2 + y_3 + \ + y_{n-1})]$$

where h is the width of each subinterval and y_i is the ordinate at $x_i = x_0 + ih$, (i=0,1. ... ,n).

RESULT:

SIGNATURE OF THE TEACHER