

The value of the integral computed using the Trapezoidal method with 20 slices is:
4.4266600000000001
The error computed using this method is: 0.02663333333333314
Direct computation error is 0.026660000000000572

The method suggested in this question uses Taylor expansion, where we only consider terms till power h^2 and omitting the higher order terms, whereas in the direct computation error we include all the terms in the expansion as we directly subtract the actual value from the computed value. Hence the two do not agree perfectly as we have omitted higher order terms in this method. Thus this error used in this problem is called truncation error.