The value of the integral computed using the Simpson's method with 20 slices is: 4.400026666666667
The error computed using this method is: 2.666666666666373e-05
Direct computation error is 2.6666666666841365e-05

The method suggested in this question uses tatylor expansion, where we only consider terms till power h^4 (starts with this) 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.

Thus the target accuracy is reached at 2048 with error 1.8960230755057002e-06