

Vu Buddy- MTH603

1. Richardson extrapolation method is used to improve the rate of convergence of a
 - a. Series
 - b. Sequence
2. Which of the following is the Global Error for Simpson's 3/8 Rule while integrating 'f(x) = Cosx' in the interval of [0,pi] of equally spaced subinterval of width 'h =pi/6' and intermediate point x = pi/2?
 - a. pi/80
 - b. 1
 - c. -pi/80
 - d. 0
3. 1st ordered divided difference formula is defined as
 - a. None of the given choices
 - b. $y[x_0, x_1] = (y_1 - y_0) / (x_1 - x_0)$
 - c. $y[x_0, x_1] = (y_1 - y_0) / (x_1 + x_0)$
 - d. $y[x_0, x_1] = (y_1 + y_0) / (x_1 - x_0)$
4. The first divided difference $y[x_0, x_1]$ can be given as,
 - a. $\frac{y_1 - y_0}{x_1 - x_0}$
 - b. All
 - c. $\frac{\Delta y_0}{h}$
 - d. $\frac{\nabla y_1}{h}$

5. If the area under ' $f(x) = x$ ' in interval $[0,2]$ is subdivided into two equal sub-intervals of width '1' with left end points, then which of the following will be the Truncation Error provided that $I(\text{definite integral}) = 2$ and approximate sum = 3 ?
- a. 0
 - b. -1
 - c. 1
 - d. 3
6. In Simpson's $1/3$ rule, we divide the interval of integration $[a, b]$ into annumber of sub-intervals.
- a. Even
 - b. Odd
 - c. None of the given choices
 - d. Prime
7. To evaluate a definite integral of tabular function $f(x)$, piecewise linear approximation led to -----.
- a. Simpson's $3/8$ Rule
 - b. Simpson's $1/3$ Rule
 - c. Trapezoidal Method
 - d. Romberg's Method
8. In Simpson's $3/8$ rule, the global error is of
- a. $O(h^2)$
 - b. $O(h^3)$
 - c. $O(h^4)$
 - d. None of the given choices

9. Integration is aprocess.

- a. Subtracting
- b. Dividing
- c. Summing
- d. None of the given choices

10. In Romberg's method, accuracy of Simpson and Trapezoidal rules is improved by -----.

- a. interpolation
- b. extrapolation

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