



**Q-4**

**Attempt all questions**

- 1 Use Lagrange's interpolation formula to find the value of y when x=10 using the following value of x and y. (7)

x	5	6	9	11
y	12	13	14	16

- 2 Find the root of the equation  $x^3 - 2x - 2=0$  using the bisection method (7)

**Q-5**

**Attempt all questions**

- 1 Find the roots of the equation  $x^3 - 3x - 1=0$  using the false position method (7)  
2 Find the roots of the equation  $x^3 - 2x - 2=0$  using the Newton-Raphson method (7)

**Q-6**

**Attempt all questions**

- 1 Using the following data table, Interpolate (Newton's backward) the value of y when x=9 (7)

x	0	2	4
y	9	7	5

- 2 Evaluate  $\int_0^4 e^x dx$  by using Simpson's 1/3<sup>rd</sup> rule (7)

**Q-7**

**Attempt all questions**

- 1 Discuss 2 point Gauss Quadrature formula (7)  
2 Discuss backward difference table with suitable example (7)

**Q-8**

**Attempt all questions**

- 1 Discuss trapezoidal rule using suitable example (7)  
2 Discuss Simpson's rule using suitable example (7)

