**Assignment (Interpolation)**

Q1: Given f(0) = -1, f(1) = 1 and f(2) = 4. Find the Newton’s interpolating formula.

Q2: State any two properties of divided differences.

Q3: State Newton’s divided difference interpolation formula?

Q4: What are the nth divided differences of a polynomial of the nth degree?

Q5: Show that the divided differences are symmetrical in their arguments.

Q6: Find the divided differences of f(x) = x2+x+2 for the arguments 1, 3, 6, 11.

Q7: Given f(0)=-2, f(1)=2 and f(2)=8. Find the root of the Newton’s forward interpolating polynomial equation f(x)=0.

Q8: The bending moments of various section of a beam are given below. Use Lagrange interpolation to locate the paint of contraflexture

Distance x (m) 6 8 14 15.5 16

 Bending moment(KN/m) 46.5 42 10.5 -1.59 -6