

Answer the following questions

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1. Find the cubic polynomial which takes the following values $y(1) = 24$, $y(3) = 120$, $y(5) = 336$ and $y(7) = 720$. Hence or otherwise, obtain the value of $y(6)$.

2. Using Lagrange's interpolation formula, find $f(x)$ as a polynomial of x , and also find the values of $f(6)$ from the following table

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x	:	3	7	9	10
$f(x)$:	168	120	72	63
		x_0	x_1	x_2	x_3

Daffodil International University, Department of Computer Science and Engineering

Course Code: CSE226
Section: 64_D

Quiz-1

Course Title: Numerical Methods
Time: 45min

Answer the following questions

1. Define Absolute error, Relative error. Also find the Absolute error, Relative error and percentage error of the number 6.38421 if 4 significant digits are correct.
2. Find the root of the equation $x^3 - 3x + 1 = 0$ by Bisection Method, correct up to four decimal places.
3. Using Newton Raphson Method, find the root of the equation $\sin x - 5x + 2 = 0$ in $(0,1)$ correct up to four decimal places.

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Quiz-1

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Answer the following questions

1. 1. Write down the conditions of significant digits. Also find the sum of $S = \sqrt{5} + \sqrt{7} + \sqrt{11}$ as well as E_s and E_p , if all the number are correct to 4 significant digits.
2. 4. Find the root of the equation $x^3 + x^2 - 1 = 0$ by False Position Method, correct up to three decimal places.
3. 4. Find the root of the equation $2x - \log_{10} x - 7 = 0$ using Newton Raphson Method in $(3, 4)$ correct up to four decimal places.

$$\log_{10} x$$

$$x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}$$

1. The Age & Blood pressure of some people are given below:

Age	30	40	50	60	70
Blood Pressure	110	117	125	135	142

Find the Blood Pressure of a person whose age is 45.

2. Evaluate the difference table to find the Lagrange's Polynomial Function which takes the values:

x	0	1	2	3
y	1	2	1	10