Assignment list

<table>
<tr><th>Exp.</th><th>Description</th><th>CO</th><th>PO-PSO</th></tr>
<tr><td>1.</td><td>Calculate f(1.30), using Lagrange's Interpolation
<table>
<tr><td>X</td><td>0.0</td><td>1.2</td><td>2.4</td><td>3.7</td></tr>
<tr><td>f(x)</td><td>3.41</td><td>2.68</td><td>1.37</td><td>1.18</td></tr>
</table></td><td>MM391.1</td><td>PO1,PO2,PO3,PO4,PSO2</td></tr>
<tr><td>2.</td><td>Evaluates f(1.2) using Newton's forward interpolation.
<table>
<tr><td>X</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td></tr>
<tr><td>f(x)</td><td>1</td><td>1.5</td><td>2.2</td><td>3.1</td><td>4.3</td></tr>
</table></td><td>MM391.1</td><td>PO1,PO2,PO3,PO4,PSO2</td></tr>
<tr><td>3.</td><td>Evaluate f(21) by using Newton's backward interpolation
<table>
<tr><td>X</td><td>0</td><td>5</td><td>10</td><td>15</td><td>20</td></tr>
<tr><td>f(x)</td><td>1</td><td>1.6</td><td>3.8</td><td>8.2</td><td>15.4</td></tr>
</table></td><td>MM391.1</td><td>PO1,PO2,PO3,PO4,PSO2</td></tr>
<tr><td>4.</td><td>Calculate Trapezoidal Rule. Value of the integral,
$\int_0^1 x\,dx / 1+x$</td><td>MM391.2</td><td>PO1,PO2,PO3,PO4,PSO2</td></tr>
<tr><td>5.</td><td>$\int_1 (4x - 3x^2)\,dx$ by Simpson 1/3 rule</td><td>MM391.2</td><td>PO1,PO2,PO3,PO4,PSO2</td></tr>
</table>

	0		
6.	$\int_{.4}^{1.6} dx / 1+x^2$ Evaluate by Weddle's rule	MM391.2	PO1,PO2,PO3,PO4,PSO2
7.	Find the real root of equation $f(x) = x^2 + x - 5 = 0$ using Bisection method.	MM391.3	PO1,PO2,PO3,PO4,PSO2
8.	Compute by the method of iteration the positive root of the equation $x^2 - x - 0.1 = 0$ correct up to 3 significant figures.	MM391.3	PO1,PO2,PO3,PO4,PSO2
9.	Find the root of the equation, $f(x) = x^3 - 3x - 5 = 0$. Using Regula Falsi method.	MM391.3	PO1,PO2,PO3,PO4,PSO2
10.	Calculate the positive root of the equation, $x^2 + 2x - 2 = 0$ Correct upto two significant figures. By the Newton Raphson method.	MM391.3	PO1,PO2,PO3,PO4,PSO2
11.	$2x + 2y + 4z = 18$ $x + 3y + 2z = 13$ $3x + y + 3z = 14$ Solve the following system by the Gauss Elimination method.	MM391.4	PO1,PO2,PO3,PO4,PSO2
12.	Solve by Gauss Seidal Rule	MM391.4	PO1,PO2,PO3,PO4,PSO2

<table>
<tr><td></td><td>$x - y - z = 1$
$2x - 3y + z = 1$
$3x + y - z = 2$</td><td></td><td></td></tr>
<tr><td>13.</td><td>Find by the method of least squares a formula of the type $y = a + bx$, which will fit the following data.
<table>
<tr><td>X</td><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td><td>12</td></tr>
<tr><td>Y</td><td>7.32</td><td>8.24</td><td>9.20</td><td>10.19</td><td>11.01</td><td>12.05</td></tr>
</table></td><td>MM391.6</td><td>PO1,PO2,PO3,PO4,PSO2</td></tr>
<tr><td>14.</td><td>Evaluate y(1.1) and y1.2) using Runge – Kutta method of order 4 for the initial value problem.
$\frac{dy}{dx} = x^2 + y^2, y(1) = 0$</td><td>MM391.5</td><td>PO1,PO2,PO3,PO4,PSO2</td></tr>
<tr><td>15.</td><td>Fit a second degree parabola for the following data using the method of least square root.
<table>
<tr><td>X</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td></tr>
<tr><td>Y</td><td>0</td><td>1.8</td><td>1.3</td><td>2.5</td><td>6.3</td></tr>
</table></td><td>MM391.6</td><td>PO1,PO2,PO3,PO4,PSO2</td></tr>
<tr><td>16.</td><td>Evaluate y(0.1) using Taylor’s series method for y(x) up to 6 terms :
$\frac{dy}{dx} = xy + 1, y(0) = 1$</td><td>MM391.5</td><td>PO1,PO2,PO3,PO4,PSO2</td></tr>
</table>

17.	Determine y(0.02) by Euler's method. Given $\frac{dy}{dx} = x^2 + y$, with y(0) = 1.	MM391.5	PO1,PO2,PO3,PO4,PSO2