NC Assignment

Q1/Q2 parta

QNO1 part a)

Solution:

Formula (Predicator)

$$\frac{1}{y_{n+1}} = y_n + h \left[ f \left( t_n + y_n \right) \right]$$
 $t_{n+1} = t_n + h$ 

Formula (Corrector)

$$y_{n+1} = y_n + \frac{h}{2} \left[ f(t_n, y_n) + f(t_{n+1}, y_{n+1}) \right]$$

For n=0

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		E1 =	to t	h .				-
	a representative of the second desiration of	E =	- 0 +	0.5				
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6	)	0	0	0.5	0	0-5	0.5602	d
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QNO 2 Part b)

$$y(t) = \frac{1}{5} te^{st} - \frac{1}{25} e^{st} + \frac{1}{25} e^{-2t}$$

$$y(0.5) = \frac{1}{5}(0.5)e^{3(0.5)} - 1e^{3(0.5)} + 1e^{-2(0.5)}$$

$$y(0.5) = 0.2836$$

Table

n	Enti	yn+1	y(t)	Citor
0	0-5	0.5602	0.2836	0.2766
1	1	5-3012	3-2191	2-0824