Team 3 (Ass 4 Q 21)

1- Amr Ayman Farouk   2- Abdelrahman Sherif Ibrahim

3- Omar Ahmed Reda

Question 21

$$I = \int_{\frac{1}{3}}^{\infty} \frac{dt}{te^t}, \quad n=3$$

$t = \infty \rightarrow u = 0$

$t = \frac{1}{3} \rightarrow u = 3$

let $t = \frac{1}{u} \quad \therefore \quad dt = -\frac{1}{u^2} du$

$$I = \int_{3}^{0} \frac{1}{\frac{1}{u} \cdot e^{\frac{1}{u}}} \cdot -\frac{1}{u^2} du = \int_{0}^{3} \frac{e^{-\frac{1}{u}}}{u} du$$

$\frac{b-a}{2} = \frac{3}{2} = 1.5 \quad , \quad \frac{b+a}{2} = 1.5$

let $u = 1.5x + 1.5 \quad \therefore \quad du = 1.5 dx$

$$I = 1.5 \int_{-1}^{1} \frac{e^{-\frac{1}{1.5x+1.5}}}{1.5x + 1.5} dx$$

c_i	x_i	$F(x_i)$	$c_i F(x_i)$
c_0	x_0	0.15362168 0	0.085345385
c_1	x_1	0.34227807 9	0.304247185
c_2	x_2	0.258021982	0.143345559

$\sum c_i F(x_i) = 0.532938129$

$I = 1.5 \sum c_i F(x_i)$

$= 0.799407191$