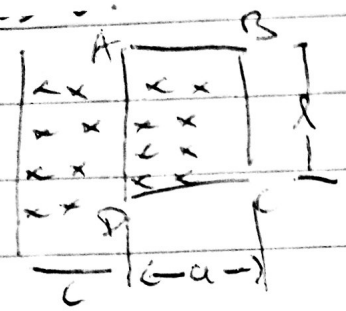
No.

Date :

1.



$I_1 = 5A$

$I_2 = 6A$

$c = 0.1\ m$

$a = 0.15\ m$

$l = 0.40\ m$

1. $F_{21} = F_{AD} = I_2 (AD \times \frac{\mu_0 I_1}{2\pi c} (-\hat{i}))$

$= 10.0.40 \cdot \frac{2 \cancel{4\pi} \cdot 10^{-7} \cdot 5}{\cancel{2\pi} \cdot 0.1} (-\hat{i})$

$= 45 \cdot 10^{-6} (-\hat{i})\ N$

2. $F_{21} = F_{BC} = I_2 L_{BC} \times \frac{\mu_0 I_1}{2\pi (a+c)} (\hat{i})$

$= 10 \cdot 0.45 \cdot \frac{\cancel{2}\cancel{4\pi} \cdot 10^{-7} \cdot 5}{\cancel{2\pi}(0.25)}$

$= 18 \cdot 10^{-6} (\hat{i})\ N$

$F_{total} = F_{AB} + F_{BC}$

$= -45 \cdot 10^{-6} (\hat{i}) + 18 \cdot 10^{-6} \hat{i}$ (i)

$= -27 \cdot 10^{-6}\ \hat{i}$ (ke kiri)

$|F| = \sqrt{(27 \cdot 10^{-6})^2}$

$= 27 \cdot 10^{-6}\ N$

3. $F_{21} = F_{AB} = I_2 \int_c^{c+a} dx \cdot \frac{\mu_0 I_1}{2\pi x} (\hat{j})$

$= I_2 \frac{\mu_0 I_1}{2\pi} \int_c^{c+a} \frac{1}{x} dx (\hat{j})$

$= I_2 \frac{\mu_0 I_1}{2\pi} \ln\left(\frac{c+a}{c}\right) (\hat{j})$

$= 10 \cdot \frac{2\cancel{4\pi} \cdot 10^{-7} \cdot 5}{\cancel{2\pi}} \ln\left(\frac{1+0.15}{0.1}\right) (\hat{j}) = 28 \cdot 10^{-7} (\hat{j})\ N$