

Physics 2326 - Dr. Terry Honan

■ Test 2 - A - Answers

Problem 1 (i) C (ii) B (iii) B (iv) C

Problem 2 (a) $I_5 = I_3 + I_4$, $I_2 + I_4 = I_1$, $0 = -7I_3 + 6 - 5I_5 + 5 - 3I_5$, $0 = 2 - 2I_4 + 9I_2 - 7 - 6 + 7I_3$,
 $0 = 7 - 9I_2 - 4I_1 + 8$, (b) 6.63Ω

Problem 3 $\frac{U}{\ell} = \frac{\pi \epsilon_0 \kappa}{\ln(b/a)} V^2$

Problem 4 (a) $1.059 \times 10^7 \frac{A}{m^2}$ (b) $9.74^\circ C$

Problem 5

	10 Ω	12 Ω	15 Ω
V	30 V	60 V	30 V
I	3 A	5 A	2 A

Problem 6 $\langle 0.0128, 0, -0.0192 \rangle N$

Problem 7 $5.33 \times 10^{-11} C$

■ Test 2 - B - Answers

Problem 1 (i) D (ii) B (iii) A

Problem 2 (a)

	100 Ω	120 Ω	150 Ω
V	4 V	8 V	4 V
I	.0400 A	.0667 A	.0267 A

(b) $\langle 7.69, 5.13, 0 \rangle \times 10^{-15} N$

Problem 3 (a) $-8 V$ (b) 7.62Ω (c) $15.7 \mu F$

Problem 4 (a) $0.01443 V/m$ (b) $5.37 A$

Problem 5 (a) $2.66 \times 10^{-5} m$ (b) $1.25 \times 10^{-7} J$