

Name: Hafiz Ayub hassan

I.D: 1997

Semester: 6th

Subject: EMI

Assignment: 01

Submitted To: Sir Waleed jan

X ————— X

①

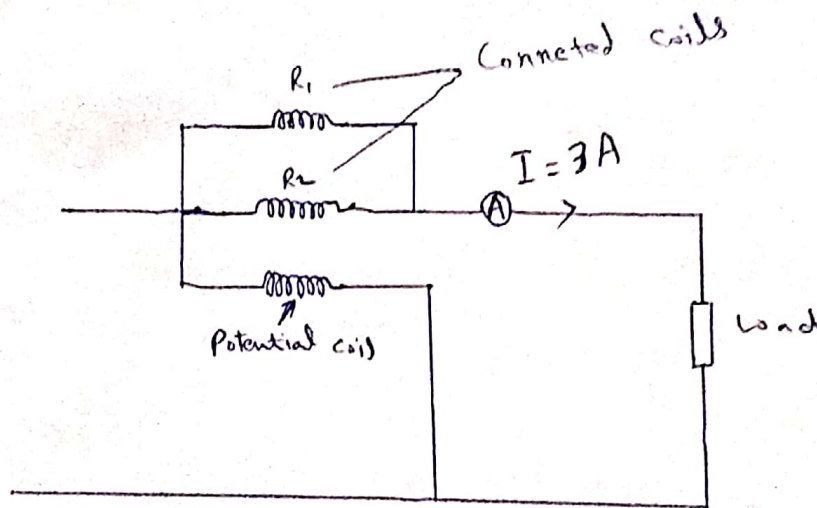
Name Hafiz Ayub Hassan

I.D. 1997

Q1: A wattmeter has 2 current coils connected in parallel -----

Calculate:

- Power loss in wattmeter
- True load power
- Percentage error due to wattmeter connection.



Sol: effective resistance of the current coil.

$$R_c = \frac{R_1 R_2}{R_1 + R_2} = \frac{0.7 \times 0.7}{0.7 + 0.7} = 0.35 \Omega$$

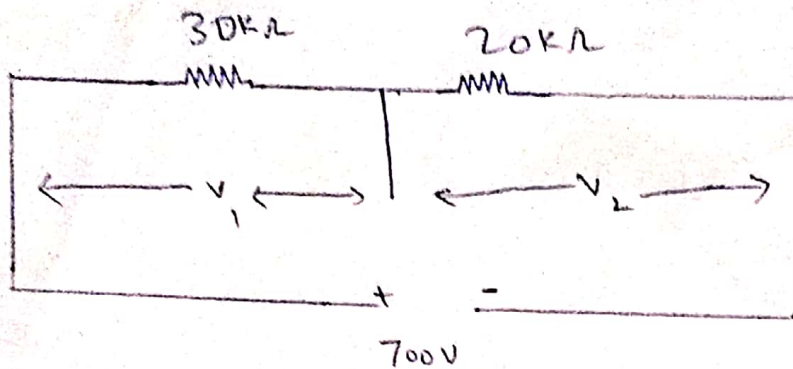
(i) Power loss in the wattmeter = $I^2 R_c = 3^2 (0.35) = 3.15 \text{ W}$

(ii) True load power = $100 - 3.15 = 96.85 \text{ W}$

(iii) Percentage error = $\frac{100 - 96.85}{96.85} \times 100 = 3.25\%$

X ————— X

Q2: Two Voltmeters have the same Range 0-500V. ?



The figure shown the condition of the problem. Hence by voltage divider rule the reading of the two Volt meter are.

$$V_1 = \frac{30k\Omega}{30k\Omega + 20k\Omega} \times 700$$

$$V_1 = \frac{30k}{50k} \times 700 \Rightarrow 420V$$

$$V_2 = \frac{20k}{20k + 30k} \times 700 \Rightarrow \frac{20k}{50k} \times 700$$

$$V_2 = \frac{1400}{5} \Rightarrow 280V$$

$$V = V_1 + V_2 \Rightarrow 420 + 280$$

$$700 = 700$$

X ————— X