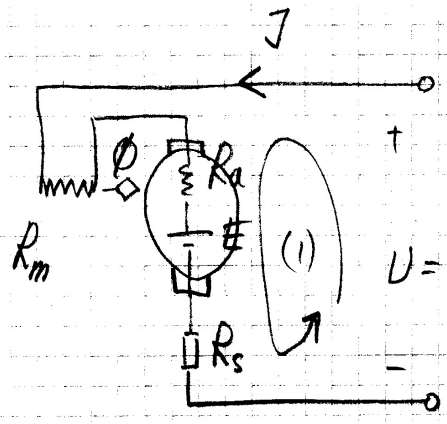
3.8



MOTORN FÖRLUSTFRI

$\Rightarrow R_m + R_a \approx 0$

$M = k_M \cdot n$

$U = 240\,V$

FALL I $\quad J_I = 5A \quad n_I = 1000\,RPM \quad R_s = 0$

FALL II $\quad n_{II} = 500\,RPM \quad R_s = ? \quad (J_{II} = ?)$

$$M = k_2 \Phi J = \left| \Phi = k J \right| = k_2 k J^2$$

$$\Rightarrow \frac{M_I}{M_{II}} = \frac{k_2 k J_I^2}{k_2 k J_{II}^2} \qquad \frac{k_M n_I}{k_M n_{II}} = \frac{J_I^2}{J_{II}^2} \Rightarrow$$

$$\frac{1000}{500} = \frac{5^2}{J_{II}^2} \Rightarrow J_{II} \approx 3{,}53\,A$$

$$+U - (R_m + R_a) J - E - R_s J = 0 \quad \ldots (1)$$

ANTAS $\quad k_1 \Phi n = k_1 k J n$

$R_s >> R_m + R_a \approx 0$, FALL I INS I (1) $\Rightarrow$

$+240 - 0 \cdot 5 - k_1 k \cdot 5 \cdot 1000 \approx 0 \Rightarrow k_1 k \approx 0{,}048$

FALL II INS I (1) $\Rightarrow +240 - 0 \cdot 3{,}53 - 0{,}048\, 3{,}53 \cdot 500 - R_s \cdot 3{,}53 = 0$

$$\Rightarrow \underline{R_s \approx 44\,\Omega}$$