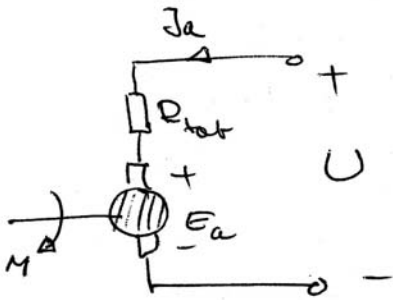


3.15

Likströmsmotor



Givet: $U = 220V$

$$R_{tot} = 1.2 \Omega$$

$$J_{aI} = 15 A$$

$$n_I = 1460 \text{ r/min}$$

II Efter belastning

$$J_{aII} = 20 A$$

$$\phi_{II} = 0.98 \phi_I$$

Sökt: n_{II}

I. Före belastning

$$U = J_{aI} R_{tot} + E_{aI} \quad (1)$$

II Efter belastning

$$U = J_{aII} R_{tot} + E_{aII} \quad (2)$$

$$\left. \begin{array}{l} \text{Men } E_{aI} = k_1 \cdot \phi_I \cdot n_I \\ \text{och } E_{aII} = k_1 \cdot \phi_{II} \cdot n_{II} \end{array} \right\} \Rightarrow \frac{n_I \cdot \phi_I}{n_{II} \cdot \phi_{II} \cdot 0.98} = \frac{E_{aI}}{E_{aII}}$$

$$\therefore n_{II} = n_I \cdot \frac{E_{aI}}{E_{aII} \cdot 0.98}$$

E_{aI} best. ur (1)

E_{aII} (2)

$$E_{aI} = U - J_{aI} R_{tot} = 220 - 15 \cdot 1.2 = \underline{202V}$$

$$E_{aII} = U - J_{aII} R_{tot} = 220 - 20 \cdot 1.2 = \underline{196V}$$

$$\therefore n_{II} = 1460 \cdot \frac{202}{196 \cdot 0.98} = 1446 \text{ r/min}$$

SVAR: $n_{II} = 1446 \text{ r/min}$