یاالله

رضا آذین پور
۹۸۱۴۳۰۴
امتحان پایانترم ماشین ۲

#4

$V_s = 2200\ V$
$P_{out} = 60\ hp$
$f = 60\ Hz$
سایر: اتصال

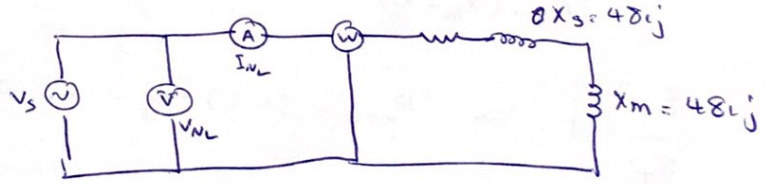
NLT: 2200 V, 60 Hz, 4.5 A, 1600 W
BRT: 270 V, 15 Hz, 25 A, 900 W
DCT: 28 V, 5 A

$$R_{NL} = \frac{P_{NL}}{|I_{NL}|^2} = \frac{1600}{(4.5)^2} = 79 \Omega \Rightarrow \text{سه فاز} : 3 \times 79$$

بی‌باری

$$Z_{NL} = \frac{|V_{NL}|}{|I_{NL}|} = \frac{2200}{4.5} = 488 \Omega \Rightarrow |X_{NL}| = \sqrt{|Z_{NL}|^2 - R_{NL}^2} = \sqrt{(488)^2 - 79^2} = 481 \Omega$$

$X_m \gg X_s \Rightarrow X_{NL} = X_m \Rightarrow$



II) $R_{BR} = \frac{P_{BR}}{|I_{BR}|^2} = \frac{900}{(25)^2} = 1.44\ \Omega$, $|Z_{BR}| = \frac{|V_{BR}|}{|I_{BR}|} = \frac{270}{25} = 10.8\ \Omega$

$$|X_{BR}| = \sqrt{|Z_{BR}|^2 - R_{BR}^2} = \sqrt{(10.8)^2 - (1.44)^2} = 10.7\ \Omega$$

$$\Rightarrow X'_r = a^2 X_r = \frac{X_{BR}}{2} = \frac{10.7}{2} \quad , \quad R'_r = R_{BR} - R_s \Rightarrow 1.44 - 5.6 = -4.16\ \Omega$$

III) DCT : $R_s = \frac{V_{DC}}{I_{DC}} = \frac{28}{5} = 5.6\ \Omega$