EECE326 Fundamentals of Energy Systems LAB Dr. Charles Kim

Prelab 8 - Induction Machine

(a) Read and study the selected sections (of Chapter 7) of Electric Machinery Fundamentals (by Stephen Chapman), which is posted in the class web page, and (b) watch the Spring 2021 video lecture on the lab, and (c)solve the following problem.

A simplified induction machine equivalent circuit is given below with, Vs = 250 V, R1 = 0.243 Ω , X1 = 0.67 Ω , R2 = 0.151 Ω , and X2 = 0.67 Ω , and Xm = 14.03 Ω .

1. If stator magnetic rotation speed Ns = 1800 rpm and the induction machine's rotor speed Nr = 1600 rpm, calculate P and Q provided/absorbed by the induction machine.

2. Do the problem 1 if Ns=1800 rpm and Nr = 1900 rpm.

