EE462 – Laboratory

Exp. 3 Quiz **Group #2** **25.05.2017**

Name: **Duration:** 15 min

ID: **Grade:** …../30

Questions

Part I: Understand

(5 pts) Why did the power factor of the induction motor increase with increasing torque?

(5 pts) Why is the power factor of induction motors relatively poor?

Part II: Solve

Consider a light rail vehicle weight of which is 100 tons. The vehicle is going on a level track (straight rail) with 150 km/h speed. The diameter of the wheels is 0.5 m. The total mechanical output power of the traction motors is 200 kW. Neglect friction and windage throughout the question.

(5 pts) How much time does it take for the train to stop, if rated torque is applied in reverse direction during deceleration?

(5 pts) How much distance should the train leave before starting the deceleration?

Part III: Think

(10 pts) Considering the data you have taken during the experiment, can you guess whether the simulated traction vehicle was going on a level track, or going uphill, or downhill? Give reasoning.