ENRG3310: Introduction to Energy and Sustainability **Midterm II**

Prof. Ognjen Š. Miljanić March 23, 2017

Name: _____ Student ID Number: _____

Last First

Read directions very carefully. Write your answer legibly in the designated spaces. *Total number of points is 200.*

1. Look up battery specifications of your favorite electric car. How much energy can their battery pack store at full charge? What is the equivalent volume of gasoline that would store the same amount of energy? *40 points*

2. What, in your opinion, are the three most significant developments in cars that happened during your lifetime? Describe each of them in no more than three sentences. *30 points*

3. Look up today's wholesale prices of natural gas in Texas. Calculate how much a kWh of electricity should cost, if it is being produced from (a) natural gas and (b) wind. You will need to worry about efficiency of combustion, energy content of natural gas, conversion of joules in kWh, etc. You will also need to figure out how to price wind, which of course blows for free. *50 points*

4. Using www.oica.net, find the top four producer countries of passenger cars in 2015. Then, sketch a plot which shows how their production has changed since 1990. You do not need to plot every single year—five-year spans will do just fine. *30 points*

GROUP PROJECT PROGRESS REPORTS

Turn this in separately. *50 points*