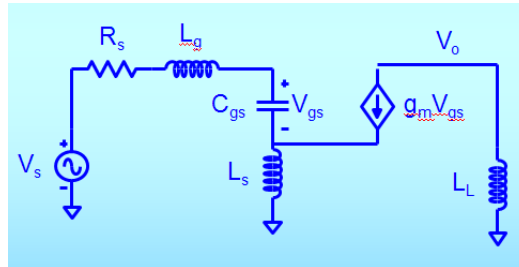


EE 475 Fall 2010 Quiz #5

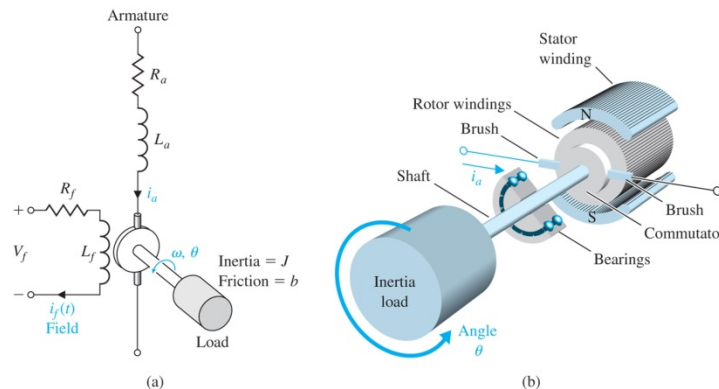
Name: _____

1. Consider the electric circuit given below.



- a. Name the energy storing elements: _____
- b. What's the relationship between i_{L_L} and V_{gs} _____
- c. What's the relationship between i_{L_s} and i_{L_g} , i_{L_L} _____
- d. How many state variables are needed? _____

2. Consider a DC motor as we discussed in class.



- a. Write the equation relating the terminal voltage across and current through the field coil: _____
- b. Write the equation relating the back emf voltage, the terminal voltage across the armature coil and the current through the armature coil: _____
- c. For the armature controlled motor, the motor generated torque is given by the expression $T_m =$ _____.
- d. For the armature controlled motor, the motor generated torque is given by the expression $T_m =$ _____.