AMIRAJ
COLLEGE OF ENGINEERING & TECHNOLOGY

ASSIGNMENT: 4 BASIC OF DC MACHINE

1. Write a list of the speed control methods for DC motors.

2. Derive the EMF equation of a DC generator from first principle.

3. A 37.3 KW, 460 V, DC shunt motor running at no load takes a current of 4 A and runs at a speed of 660 rpm. The armature resistance is 0.3 Ohm and Shunt field resistance is 270 Ohm. Find the (1) Input current and (2) Speed, when the motor is running at full load. Assume that no load input of armature circuit is equal to iron and rotational losses.

4. Explain the procedure and calculations for Field test on identical DC series machines.

5. Derive the equation of pitch factor for short pitch coil. Briefly describe the role of compensating winding.