ECE 320 NAME _____

Quiz 7 30 March 2012

DC Machines

1. (6 points) For the machine shown on the monitor, identify the four parts indicated:

   A. _____ B. _____

   C. _____ D. _____

2. (10 points) A separately excited DC motor operated with a terminal voltage of 180V and an armature current of 50A. Its armature resistance is 0.14 Ohms and its field resistance is 300 Ohms. The field voltage, being separately excited, is 240V. Mechanical losses are insignificant. Its saturation curve at 3000 RPM is given on the other side of this page.
   a. (5 points) Find its speed of rotation.

   b. (2 points) Find $K\phi$, its machine constant.

   c. (3 points) Find its torque.

There is more on the other side of this page.

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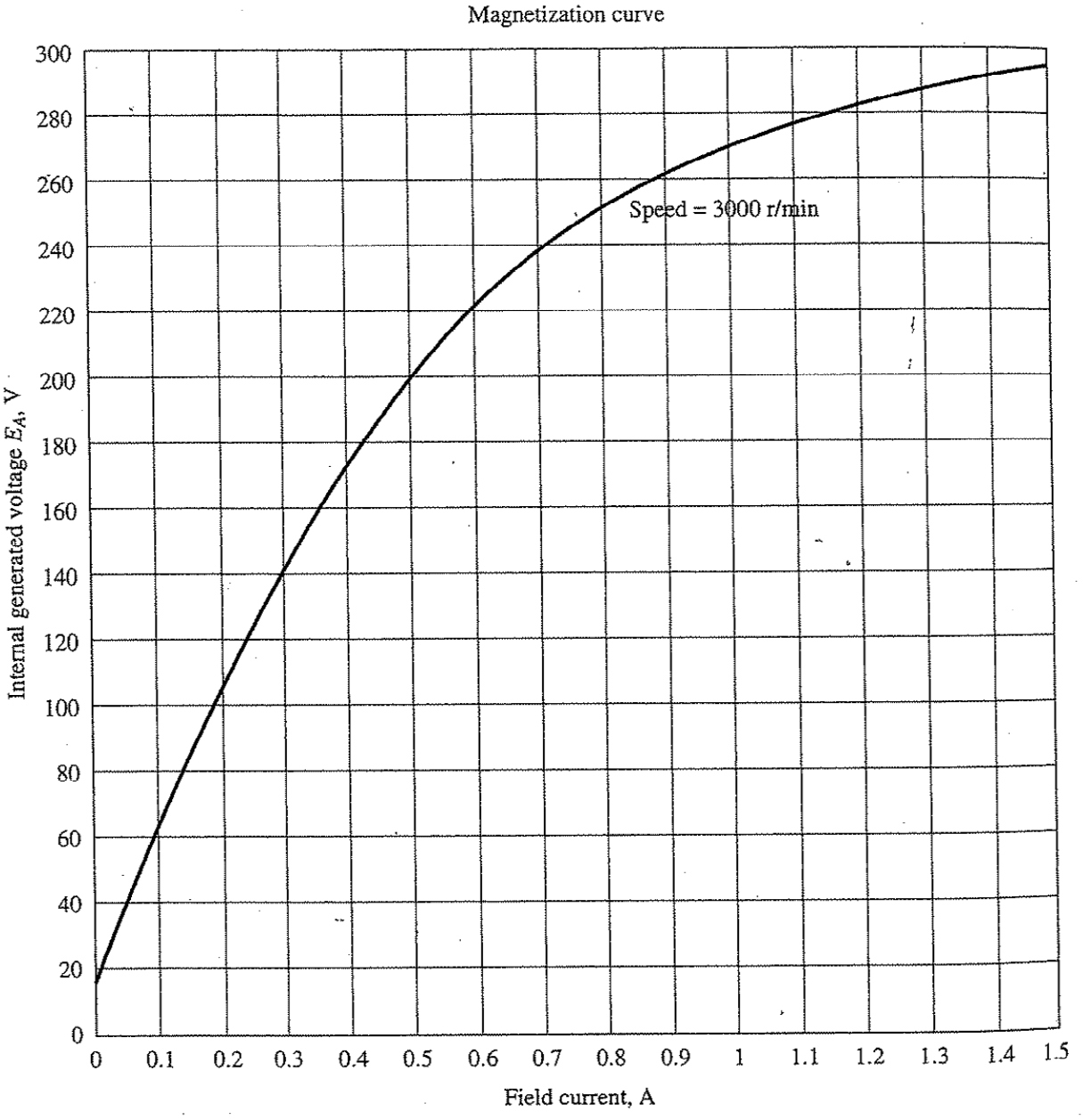
3. (2 points) If the raise the armature current by adding load, the speed of our separately excited machine will _____.
(increase / remain the same / decrease)

4. (2 points) If we raise the field current of our machine by increasing the field voltage, the speed of our separately excited machine will _____.
(increase / remain the same / decrease)



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