CHEMISTRY
Section II
(Total time—90 minutes)

Part A
Time—40 minutes
**YOU MAY USE YOUR CALCULATOR FOR PART A.**

CLEARLY SHOW THE METHOD USED AND THE STEPS INVOLVED IN ARRIVING AT YOUR ANSWERS. It is to your advantage to do this, since you may obtain partial credit if you do and you will receive little or no credit if you do not. Attention should be paid to significant figures.

Be sure to write all your answers to the questions on the lined pages following each question in the booklet with the goldenrod cover. Do NOT write your answers on the lavender insert.

Answer Question 1 below. The Section II score weighting for this question is 20 percent.

$$2\,HI(g) \rightleftarrows H_2(g) + I_2(g)$$

1. After a 1.0 mole sample of $HI(g)$ is placed into an evacuated 1.0 L container at 700. K, the reaction represented above occurs. The concentration of $HI(g)$ as a function of time is shown below.
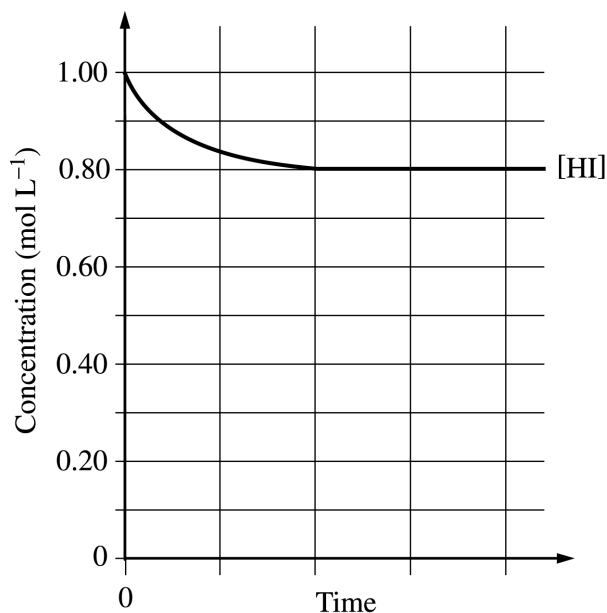
(a) Write the expression for the equilibrium constant, K_c, for the reaction.

(b) What is $[HI]$ at equilibrium?

GO ON TO THE NEXT PAGE.