Midterm Exam #1: 14.02

Full Name:
TA Name:
Section Time:

STOP! Failure to follow these instructions could be detrimental to your grade.

Please answer all of the following questions completely. You have two hours to complete the exam, which should be more than enough time. Please use three blue books for the exam, one for each set of questions. Be sure to LEGIBLY write your full name, section (which should consist of your TA's name and section time), and question number on the front of each blue book. When finished with the exam, you must return all three blue books and this signed exam sheet to a proctor.

True, false, uncertain (Explain your answers) **Blue Book #1**

1. The unemployment rate always falls when the economy is growing.
2. The growing tendency of companies to "outsource" janitorial services, hiring contractors to clean their facilities instead of using their own employees, increases GDP because it increases total market sales.
3. Saving and investment are always equal.
4. The only way the government can expand the economy is by printing money.
5. Inflation is a bad thing, because it raises interest rates, and that causes a recession.
6. People who worry about declining consumer confidence are silly: Alan Greenspan can always take care of the problem.

Short questions (Show all your work) **Blue Book #2**

1. An economy produces two goods: computers and haircuts. In 1987 it produced 1 million computers at $2000 each, and provided 200 million haircuts at $10 each. In 1997 it produced 4 million computers at $1000 each, and again provided 200 million haircuts, but now at $20 each. Assume no quality improvements in either sector.

(a) What was nominal GDP in each year?
(b) By what percentage did real GDP increase over the decade?
(c) By what percentage did the GDP deflator change over the decade?
(d) Why are (b) and (c) problematic questions?
(e) Explain the relevance of this puzzle to the real US economy.

2. Imagine an economy with two kinds of bond: a one-year bond that pays interest and principal one year from purchase date, and a "consol", a bond that pays a fixed "coupon" every year forever. You bought one of each yesterday, believing along with everyone else that interest rates will be 5 percent forever. But today's news has just convinced the market that interest rates will actually be 4 percent forever.

(a) What is the effect of the news on the value of your one-year bond?
(b) What is the effect of the news on the value of your consol?
(c) Most economists believe that changes in monetary policy mainly affect investment in long-lived capital items like houses, with small effects on such things as inventories or computers that will quickly become obsolete. Relate this observation to (a) and (b).

<u>Long question</u> (Show all your work) **Blue Book #3**

An economy is characterized by the following relationships:

Consumption: $C = 20 + .5(Y-T)$
Investment: $I = 25 - 200i$
Money demand: $M = Y(.5 - i)$
We assume that initially government spending G is set at 20, the budget is balanced, and the money supply is chosen so that the interest rate i is .05.

(a) Determine Y and M.

We now suppose that full employment for this economy requires $Y = 100$; we want to consider five alternative policies that could bring the economy to full employment.

(b) Suppose that the government tries to achieve full employment by raising spending, while expanding the money supply enough to keep the interest rate constant. How large an increase would be necessary?
(c) Suppose instead that it tried to achieve full employment by reducing taxes. How large a tax cut would be necessary? Explain the different implications of this policy from the previous one for the budget deficit.
(d) Suppose the government does not want to run a deficit, so it matches its spending increases with tax increases. How much must G and T rise?
(e) Instead of fiscal policy, monetary policy is used to achieve full employment. How much must i fall and M rise?
(f) After monetary policy is used to achieve full employment, for some reason consumers and investors lose confidence. The consumption function becomes $C = 15 + .5(Y-T)$; the investment function becomes $I = 20 - 200i$. Can monetary policy be used to maintain full employment? Explain.