

A-1. Essay Question (18 points)

The production function for a product is given by $Q = 100KL$. If the price of capital is \$120 per day and the price of labor \$30 per day, what is the minimum cost of producing 1000 units of output?

A-2. Multiple Questions with Explanations (8 points each) (There are

could be more than one correct answers for each question. You will earn full or partial credit only if you use diagrams, formula, and descriptions to provide concise explanations for each correct answer you choose.)

1. Which of the following is true about price floors? (a) Consumer surplus will be significantly lower when demand is sufficiently inelastic. (b) Consumer surplus is always lower than it would be in the competitive equilibrium. (c) The total producer surplus depends on how producers respond to the price floor in determining their output level. (d) Market quantity will be higher than at the equilibrium.
2. An import quota, compared to a tariff, which restricts imports to the same amount as the tariff, (a) will leave the consumers as a whole worse off than a comparable tariff. (b) will provide better protection for the domestic producers. (c) will further decrease the producer surplus of the domestic producers. (d) will further decrease the price of the merchandise to the consumers.
3. Which of the following statements are true? (a) A production function, $F(K,L) = K^2L$ exhibits increasing returns to scale. (b) Input prices are constant, a firm with increasing returns to scale can expect costs to more than double as output doubles. (c) The average product of labor is the slope of the line that is tangent to the total product curve at that level of labor usage. (d) The graphical relationship between average product and marginal product is the marginal product cuts the average product from above, at the maximum point of average product.
4. Which of the following statements are correct? (a) Knowledge is a public goods. (b) Eliminating price supports for agricultural producers will hurt the farmers who cultivate products that have a high price elasticity of demand. (c) If a sell tax is imposed on a commodity, then the burden of the tax will fall mostly on consumers. (d) Governments, at no time, can successfully interfere with competitive markets in order to achieve economic efficiency.

Part B: This part consists of five (5) questions. Total grade points for this section is 50.
Answer all questions. Write clearly the question numbers on your answer sheet.

- B1. Suppose the Okun's law coefficient is 2.5, the full-employment level of output is \$5000 billion, and the natural rate of unemployment is 6%.
- What is the current level of output if the current unemployment rate is 8 percent? (5 points)
 - Suppose structural changes in the economy raise the natural rate of unemployment to 7%, and lower the full-employment level of output to \$4800 billion. If the current unemployment rate is 8%, what is the current level of output? (5 points)
- B2. Suppose you divide your life into two periods-working age and retirement age. When you work, you earn labor income Y ; when retired, you earn no labor income, but must live off your savings and the interest it earns. You have no initial assets. You save the amount S while working, earning interest at rate r , so you have $(1+r) \cdot S$ to live on when retired. Because you don't need to consume as much when retired, you want to set consumption when working twice as high as consumption when retired.
- Suppose you earn \$2 million over your working life, and the real interest rate for retirement saving is 50%. How much will you save, and how much will you consume in each part of your life? (5 points)
 - Suppose a social security system will pay you 25% of your working income when you are retired. Now (with $Y = \$2$ million as in part a) how much will you save and how much will you consume each period? (5 points)
- B3. Consider an economy that has the following monetary data:
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|-------------------------|----------|
| Currency in circulation | = \$ 300 |
| Bank reserves | = \$ 50 |
| Monetary base | = \$ 350 |
| Deposits | = \$ 700 |
| Money supply | = \$1000 |
- The monetary base and the money supply are expected to grow at a constant rate of 20% per year. Inflation and expected inflation are 20% per year. Suppose that bank reserves and currency pay no interest, all currency is held by the public, and bank deposits pay no interest.
- What is the cost to the public of the inflation tax? (5 points)
 - What is the profit to the banks from the inflation? (5 points)
- B4. Describe the effects of contractionary monetary policy by the domestic central bank on output, the real interest rate, and net exports in both the domestic and foreign country, using a Keynesian model in the short run. What happens in the long run? (10 points)
- B5. How is real seignorage revenue related to inflation? How does the quantity of real seignorage revenue change as inflation rises from zero to a positive level, to still higher levels? (10 points)