

I. (points are listed below for each question)

1. (20 points) The production function of firm 1 is $Q_1 = 20 K_1^{0.5} L_1^{0.5}$, and the production function of firm 2 is $Q_2 = 20 K_2^{0.8} L_2^{0.2}$, where Q is the total number of cell phones assembled per day, K (capital input) is machine hours per day, and L (labor input) is labor hours per day for each firm.
 - (a) If both firms use equal amounts of capital and labor ($K_i = L_i$, $i=1, 2$) in operation, then which firm would generate more output per day?
 - (b) Assuming the limitation of capital is 25 machine hours per day, but unlimited for labor. In which firm the marginal product of labor would be greater?
2. (15 points) The production function for a product is given by $Q = 275KL$. If the price of capital is \$180 per day and the price of labor is \$60 per day, please calculate the minimum cost of producing 550 units of this product.
3. (10 points) A monopolist produces at $AC = MC = 10$, and the market demand curve is $Q = 120 - P$.
 - (a) What would be the profit-maximizing price and quantity for this monopolist?
 - (b) Please calculate the monopolist's profit.
4. (10 points) In a perfect competitive market, a firm figures out that the demand for a product at the market price has its price elasticity of -0.9 in the short run. If that firm increased the price of that product by 20%, what would be the changes of its sales revenue in the short run?

II. (3 points for each question in this section)

1. Which of the following effect is caused by an increase in the aggregate price level, P ?
 - (a) A rightward shift in the IS curve.
 - (b) A leftward shift in the IS curve.
 - (c) An upward shift in the LM curve.
 - (d) A downward shift in the LM curve.
2. Which of the following effect is caused by a decrease in consumer confidence?
 - (a) A rightward shift in the IS curve.
 - (b) A leftward shift in the IS curve.
 - (c) An upward shift in the LM curve.
 - (d) A downward shift in the LM curve.
3. Which of the following is the interest rate if a bond offering to pay \$100 in one year sells for \$90?
 - (a) 9.0%
 - (b) 10.0%
 - (c) 11.1%
 - (d) 12.0%

4. When nominal GDP increases in a given year, which of the following would be always true?
 - (a) The price level (GDP deflator) has increased.
 - (b) Real output has increased.
 - (c) The price level (GDP deflator) and real output have both increased.
 - (d) Either real output or the price level (GDP deflator) has increased.
5. Okun's law is the inverse relationship between
 - (a) Output growth and the change in unemployment,
 - (b) The level of output and the inflation rate.
 - (c) The output growth and the inflation rate.
 - (d) The output growth and nominal GDP.
6. The paradox of saving describes that an increase in the desire to save in the short run leads to
 - (a) A recession and no increase in total saving.
 - (b) An increase in equilibrium GDP.
 - (c) Poor public attitudes toward saving.
 - (d) An increase in the desire to invest.
7. A rightward shift in money demand would be caused by which of the following?
 - (a) A reduction in interest rate.
 - (b) An increase in interest rate.
 - (c) A decrease in income.
 - (d) An increase in income.
8. An increase in the reserve ratio, θ , would cause which of the following?
 - (a) An increase in the monetary base.
 - (b) A reduction in the monetary base.
 - (c) An increase in the money multiplier,
 - (d) A reduction in the money multiplier.
9. Which of the following would describe the efficiency wage theory?
 - (a) Firms would be more resistant to wage increases once the labor market tightens.
 - (b) Workers would be paid more than their reservation wage.
 - (c) Unskilled workers would have a lower turnover rate than skilled workers.
 - (d) Productivity would drop with a high wage rate.
10. Deflation refers to which of the following situation?
 - (a) Negative inflation.
 - (b) The rate of inflation is falling.
 - (c) Inflation and unemployment rate are both increasing.
 - (d) Inflation and unemployment rate are both decreasing.

11. All else being equal, which of the following would cause an increase in output per effective worker?
 - (a) An increase in labor.
 - (b) An increase in capital per effective worker.
 - (c) An increase in population.
 - (d) Doubling of both capital and labor.
12. Which of the following is the "balanced growth"?
 - (a) All industries in the economy are growing at the same rate.
 - (b) Growth rates in services and in goods are equal.
 - (c) Output, capital, and effective labor are all growing at the same rate.
 - (d) The growth rate of capital is equal to the rate of depreciation.
13. Which of the following would be caused by an increase in productivity?
 - (a) Shifts the AS curve downward, but can shift the AD curve in either direction.
 - (b) Shifts the AS curve upward, but has no effect on the AD curve.
 - (c) Shifts the AD curve rightward, but has no effect on the AS curve.
 - (d) Shifts the AD curve leftward, but has no effect on the AS curve.
14. If for a given period, the percentage change in output is 5%, and the percentage change in productivity is 3%. Which of the following would be true?
 - (a) Employment has decreased during this period.
 - (b) Employment has increased during this period.
 - (c) Employment has not changed during this period.
 - (d) The effects on employment are ambiguous.
15. Which of the following would apply to a very small country with a high propensity to import?
 - (a) There is no combination of policies that can eliminate the trade deficit.
 - (b) Depreciation will cause only small changes in the trade balance.
 - (c) Fiscal policy will cause large changes in export.
 - (d) Fiscal policy will cause large changes in the trade balance.