

46

Test 2C-Principles of Microeconomics
Professor Wallace-Fall 2016

Multiple Choice (32 points): On the scan sheet mark the letter corresponding to your answer.

Shad has income of 12 KD to spend on donuts and coffee every day. The price of coffee is 3 KD and the price of a donut is 1 KD. His utility maximizing consumption is 2 coffees and 6 donuts. Use this information for the next three questions. The c subscript refers to coffee, d to donuts.

1. Which of the following conditions for marginal utility and prices holds if Shad is consuming his utility maximizing combination of donuts and coffee?

- a. $\frac{MU_d}{p_d} = \frac{MU_c}{p_c}$
 b. $\frac{MU_d}{p_d} < \frac{MU_c}{p_c}$
 c. $\frac{MU_d}{p_d} > \frac{MU_c}{p_c}$
 d. none of the others

2. Suppose Shad is actually consuming 4 coffees and 0 donuts. At the combination of 4 coffees and 0 donuts, what is the relationship that holds for the marginal utilities and prices?

- a. $\frac{MU_d}{p_d} = \frac{MU_c}{p_c}$
 b. $\frac{MU_d}{p_d} < \frac{MU_c}{p_c}$
 c. $\frac{MU_d}{p_d} > \frac{MU_c}{p_c}$
 d. none of the others

3. Suppose Shad is actually consuming 4 coffees and 0 donuts. To increase his utility while spending the same, Shad should _____ his consumption of coffees and _____ his consumption of donuts.

- a. increase, increase
 b. increase, decrease
 c. decrease, increase
 d. decrease, decrease
 e. none of the above

4. Marginal utility is the _____ satisfaction gained by consuming _____ of a good.

- a. additional; one more unit
 b. additional; all units
 c. total; all units
 d. total; one more unit
 e. none of the above

5. The best method of production is the one that

- a. maximizes output regardless of cost.
 b. maximizes inputs.
 c. maximizes cost.
 d. minimizes the normal rate of return.
 e. none of the above
- Max profit
Min cost

6. If the quantity of peanut butter demanded increases by 4% when the price of jelly decreases by 8%, the cross-price elasticity of demand between peanut butter and jelly is

- a. -4.
 b. -2.
 c. -0.5
 d. 2.
 e. none of the above
- $EC = \frac{Q_d}{P} = \frac{+4}{-8} = -\frac{1}{2}$
- complement

7. The more time that ^{تجول} elapses, the

- a. more price elastic is the demand for the product.
 b. less price elastic is the demand for the product.
 c. greater the income elasticity of demand for a product.
 d. smaller the income elasticity of demand for the product.
 e. none of the above

Q

8. A government wants to reduce electricity consumption by 10%. The price elasticity of demand for electricity is -2.00. The government must _____ the price of electricity by _____.

- a. raise; 5.0%
- b. raise; 1.25%
- c. raise; 8.0%
- d. lower; 5.0%
- e. none of the above

$$-\frac{Q}{P} = \frac{-10}{\frac{1}{-2}} = \frac{-10}{-0.5} = 20$$

Part II-True False (30 points): On the scan sheet mark A for true or B for false.

- T F 9. A perfectly elastic demand schedule is a vertical line.
- T F 10. When the slope of a demand schedule is constant, price elasticity of demand is constant as well.
- T F 11. When the price of coffee decreases, the income effect means buying more coffee, $\epsilon_y > 0$.
- T F 12. The income elasticity of demand is the percentage change in income divided by the percentage change in quantity demanded.
- T F 13. The 'more is better' principle means marginal total increases as consumption of the good increases.
- T F 14. When the price of coffee decreases, the substitution effect means buying more coffee.
- T F 15. The market demand for labor is made up of the supplies of labor of all individuals in a market.

Short Answer (60 points) Write your answers on this test.

1. (24 points) The table shows a list of events. Each event affects the market indicated. In each case you should show the effects of the event on demand (D), supply (S), the equilibrium price (P), and the equilibrium quantity (Q). The events are independent in the sense that an event listed in one row of the table does not affect the market in a different row. Be sure to take into account the information given about the elasticity in each problem before answering. Use these symbols: + increase or shift right, - decrease or shift left, U uncertain effect or shift, 0 no effect or shift

| Market in Kuwait | Event | D | S | P | Q |
|-------------------|--|---|---|---|---|
| Sodas | Income decreases ($\epsilon_y < 0$) inelastic | + | 0 | + | + |
| Mangos | Price of detergent falls, ($\epsilon_c = 0$) | + | 0 | 0 | + |
| Heart transplants | The costs of production decrease, ($\epsilon_d = 0$) | + | + | - | + |

+ 0 + +
0 0 0 0
0 + - 0

2. (8 points) Use the information provided in the table below to answer the questions that follow.

Inputs Required to Produce a Product Using Alternative Technologies

| Technology | Units of Capital | Number of Employees |
|------------|------------------|---------------------|
| A | 4 | 18 |
| B | 6 | 12 |
| C | 8 | 8 |
| D | 12 | 6 |

$4 \times 10 + 18 \times 4 = 112$
 $6 \times 10 + 12 \times 4 = 108$
 $8 \times 10 + 8 \times 4 = 112$
 $12 \times 10 + 6 \times 4 = 144$

Refer to the table. If the hourly wage rate is 4 KD and the hourly price of capital is 10 KD, which production technology should be selected? Circle one answer.

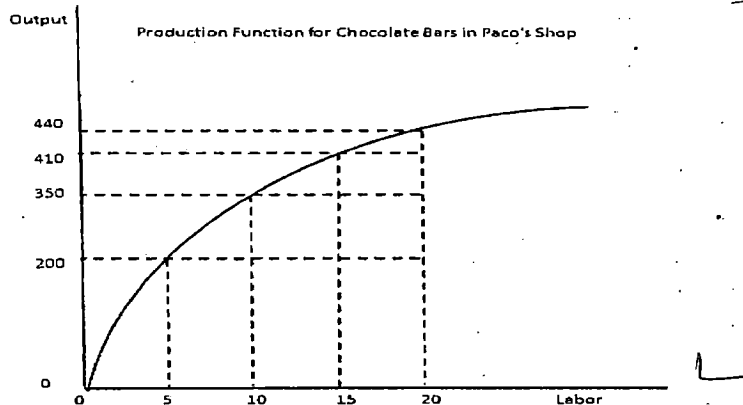
- a. A
- b. B
- c. C
- d. D

Refer to the table. If the hourly price of labor is 20 KD and the hourly price of capital is 25 KD, which production technology should be selected? Circle one answer.

- a. A
- b. B
- c. C
- d. D

$4 \times 25 + 18 \times 20 = 460$
 $6 \times 25 + 12 \times 20 = 390$
 $8 \times 25 + 8 \times 20 = 360$
 $12 \times 25 + 6 \times 20 = 420$

3. (28 points) Paco owns a shop that makes chocolate bars. The production function showing the relationship between output and labor is shown in the graph below. Assume capital is fixed.



Complete the following table by filling the blank spaces with values for output, the average product of labor (APL), and the marginal product of labor (MPL) then answer the questions that follow the table.

Important: Note that labor increases by 5 unit increments in the graph and table, not 1 unit increments.

| Labor | Output <i>TP</i> | APL | MPL |
|-------|------------------|-------------------------------|------------------------------|
| 0 | 0 | - | - |
| 5 | 200 | $\frac{200}{5} = 40$ | $\frac{200-0}{5-0} = 40$ |
| 10 | 350 | $\frac{350}{10} = 35$ | $\frac{350-200}{10-5} = 30$ |
| 15 | 410 | $\frac{410}{15} \approx 27.3$ | $\frac{410-350}{15-10} = 12$ |
| 20 | 440 | $\frac{440}{20} = 22$ | $\frac{440-410}{20-15} = 6$ |

Handwritten calculations for MPL:
 $\frac{200-0}{5-0} = 40$
 $\frac{350-200}{10-5} = 30$
 $\frac{410-350}{15-10} = 12$
 $\frac{440-410}{20-15} = 6$

For the next questions your answers will be integers, no fractions (part-time) of workers.

c. The price of the chocolate bar is 3 KD.

k. If the wage rate is 35 KD the firm should hire 15 workers.

ii. If the wage rate is 15 KD the firm should hire 20 workers.

d. The price of the product is 1 KD.

iii. If the wage rate is 35 KD the firm should hire 15 workers.

ii. If the wage rate is 15 KD the firm should hire 10 workers.

Handwritten calculations:
 $\frac{440-410}{20-15} = 6$

Handwritten mark: a large '4' with a diagonal slash through it.

Handwritten calculations:
 $40 \times 3 = 120$
 $30 \times 3 = 90$
 $12 \times 3 = 36$
 $6 \times 3 = 18$

Handwritten Arabic notes:
 15 نوظف فيه 35 كد
 20 نوظف فيه 15 كد

Radu M

| L | Q | MPL | APL |
|---|----|-----|----------------|
| 0 | 0 | 0 | 0 |
| 1 | 20 | 20 | $\frac{20}{1}$ |
| 2 | 30 | 10 | $\frac{30}{2}$ |
| 3 | 35 | 5 | $\frac{35}{3}$ |
| 4 | 30 | -5 | $\frac{30}{4}$ |

بعضی کا بعضی کا
15 کی

P = 2 اور

جز بار

MPL
دنیوں کی

Reject