

國立彰化師範大學 97 學年度碩士班招生考試試題

系所：企業管理學系碩士班

科目：經濟學

☆☆請在答案紙上作答☆☆

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一、選擇題，作答時請在答案紙上標明題號依序作答。(14%)

- (1) The production function $Q = 0.25X^{0.5}Y$ exhibits:
- constant returns to scale.
 - increasing returns to scale.
 - increasing and then diminishing returns to scale.
 - diminishing returns to scale.
- (2) The law of diminishing returns:
- deals specifically with the diminishing marginal product of fixed input factors.
 - states that the marginal product of a variable factor must eventually decline as increasingly more is employed.
 - can be derived deductively.
 - states that as the quantity of a variable input increases, with the quantities of all other factors being held constant, the resulting output must eventually diminish.
- (3) A new production function results following:
- a new wage agreement following collective bargaining.
 - a surge in product demand.
 - a decrease in the availability of needed inputs.
 - the successful completion of a training program that enhances worker productivity.
- (4) The relation between output and the variation in all inputs taken together is the:
- factor productivity of a production system.
 - law of diminishing returns.
 - returns to scale characteristic of a production system.
 - returns to factor characteristic of a production system.
- (5) When $P_X = \$100$, $MP_X = 10$ and $MR_Q = \$5$, the marginal revenue product of X equals:
- \$100.
 - \$50.
 - \$10.
 - \$5.

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(6) The returns to scale characteristic of a production system:

- a. is measured by the way in which inputs can be varied in an unbroken marginal fashion rather than incrementally.
- b. illustrates the distinct, or "lumpy," pattern of input combination.
- c. shows the relation between output and the variation in all inputs.
- d. is the relation between output and variation in only one of the inputs employed.

(7) The marginal product concept is:

- a. used to describe the relation between output and variation in all inputs in a production function.
- b. the change in output associated with a one-unit change in an individual factor.
- c. total product divided by the number input units employed.
- d. the complete output from a production system.

二、計算題，作答時須標明題號且顯示計算過程，並在數據答案下方畫線。(86%)

(1) Restaurant Marketing Services, Inc., offers affinity card marketing and monitoring systems to fine dining establishments nationwide. Fixed costs are \$600,000 per year. Sponsoring restaurants are paid \$60 for each card sold, and card printing and distribution costs are \$3 per card. This means that RMS's marginal costs are \$63 per card. Based on recent sales experience, the estimated demand curve and marginal revenue relations for are: (16%)

$$P = \$130 - \$0.000125Q$$

$$MR \text{ (marginal revenue)} = \$130 - \$0.00025Q$$

- A、Calculate (1) output, (2) price, (3) total revenue, and (4) total profit at the revenue-maximizing activity level.
- B、Calculate (1) output, (2) price, (3) total revenue, and (4) total profit at the profit-maximizing activity level.

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(2) Better Buys, Inc., is a leading discount retailer of wide-screen digital and cable-ready plasma HDTVs. Revenue and cost relations for a popular 55-inch model are: (20%)

$$TR \text{ (total revenue)} = \$4,500Q - \$0.1Q^2$$

$$MR \text{ (marginal revenue)} = \$4,500 - \$0.2Q$$

$$TC \text{ (total cost)} = \$2,000,000 + \$1,500Q + \$0.5Q^2$$

$$MC \text{ (marginal cost)} = \$1,500 + \$1Q.$$

A、Calculate (1) output, (2) marginal cost, (3) average cost, (4) price, and (5) profit at the average cost-minimizing activity level.

B、Calculate (1) output, (2) marginal cost, (3) average cost, (4) price, and (5) profit at the profit-maximizing activity level.

(3) An individual possesses \bar{L} units of labor and uses labor as the single input in production to produce the two commodities X_1 and X_2 . The unit labor requirements for producing one unit of X_1 and one unit of X_2 are denoted by l_1 and l_2 , respectively, which are assumed to be constant in production. The preference of the individual can be represented by $U(X_1, X_2) = X_1X_2$. Let p_1 and p_2 represent the market prices of X_1 and X_2 , respectively, which are assumed to be constant with the individual as a price taker. Show graphically and verbally the revenue-maximizing output combination and the utility-maximizing consumption combination for $p_1/p_2 > l_1/l_2$ in the X_1 - X_2 plane with X_1 represented along the horizontal axis. (25%)

(4) In the *IS-LM* framework and the *AD-AS* framework, discuss verbally and graphically the effects of successive decreases in the discount rate on the money market and the entire economy with a stagflation taking place as a result of increases in the world prices of energy inputs. (25%)