Part A: Microeconomics (3 points each for questions 1-12; 2 points each for questions 13-19)

1. Which of the following characteristic belongs to the production function Q = $\sqrt{K}\sqrt{L}$? (A) increasing returns to scale (B) decreasing returns to scale (C) constant returns to scale (D) increasing or decreasing depending on the value of K and L (E) undetermined

2. Under similar conditions, which of the following oligopoly models will have the lowest price? (A) Stackelberg (B) Cournot (C) Bertrand (D) Shared monopoly (E) Collusion

3. Which of the following is not required for a perfect competition market? (A) Firms sell a standardized product (B) There is free exchange in international trade (C) Firms are price takers (D) Factors of production are perfectly mobile in the long run (E) Firms and consumers have perfect information

4. A monopolist faces a demand curve of P = 100-2Q and a short-run total cost curve of TC = 640 +20Q. What is the profit-maximizing price? (A) 60 (B) 50 (C) 40 (D) 20 (E) 10

5. Compensated demand curve is located (A) in the right of uncompensated demand curve (B) in the left of uncompensated demand curve (C) steeper than uncompensated demand curve (D) flatter than uncompensated demand curve (E) parallel to uncompensated demand curve.

6. Firms with the following market structure(s) maximize profits by producing where marginal cost equals marginal revenue, if at all. I. Perfect competition II. Oligopoly III. Monopoly IV. Monopolistic competition (A) I only (B) I and II only (C) I and III only (D) I, III, and IV only (E) I, II, III, and IV

7. A loud party in the neighborhood is disturbing people living nearby who would like to sleep. Which of the following is most likely to lead to an efficient solution the problem? (A) Ban parties (B) Permit parties that end before 10 p.m. (C) Place a tax on parties equal to the value of the lost sleep that results (D) Place a tax on parties equal to the value party-goers receive from their parties. (E) Subsidize people living nearby equal to the value of the lost sleep that results

8. A production possibility frontier will be a straight line when (A) efficiency is achieved (B) utility is maximized (C) the good on the axes are perfect substitutes in consumption (D) the marginal product functions for all inputs are straight lines (E) resources are not specialized

9. The demand curve for labor is derived from (A) the market labor demand curve (B) the demand curve for the output produced by labor (C) the labor supply curve for

the firm (D) the equilibrium wage in the labor market (E) the market labor supply curve

10. In the long run, a monopolistically competitive firm (A) earns negative economic profit (B) earns positive economic profit (C) earns zero economic profit (D) faces a vertical demand curve (E) faces a horizontal demand curve.

11. The value of the marginal product of labor always equals the marginal revenue product of labor for which type of firm? (A) Wage taking (B) Monopsony (C) Monopoly (D) Price taking (E) Oligopoly

12. The condition that P = MC is the direct requirement for which type of efficiency? (A) Distributive efficiency (B) Technical efficiency (C) Efficiency in production (D) Efficiency in exchange (E) Allocative efficiency

13. 何者不會改變消費者對於豬肉的需求(demand)？(A)嗜好改變(B)牛肉價格變動(C)所得提高(D)口蹄疫發生(E)豬肉價格變動

14. 稻穀豐收時，農民收入減少，稱為「穀賤傷農」。其原因在於稻穀的(A)需求彈性小於一(B)供給彈性大於一(C)供給彈性小於一(D)需求彈性大於一(E)所得彈性小於一

15. 美國卡特總統曾經在能源危機時，為降低石油的依賴，對大型車課稅、對小型車補貼，結果卻造成石油消耗增加，請問主要原因是：(A)大型車對石油的價格彈性大(B)小型車對石油的價格彈性大(C)大型車對石油的價格彈性小(D)小型車對石油的價格彈性小(E)大小型車都對石油價格無彈性

16. 最近十年中國大陸的平均經濟成長率最接近下列哪一項：(A) 10% (B) 15% (C) 20% (D) 5% (E) 2%

17. 台灣最近兩年在瑞士洛桑國際管理發展學院的「世界競爭力報告」中，競爭力排名約為世界的：(A)第五名(B)第十名(C)第二十名(D)第三十名(E)第四十名

18. 台灣去年(2005 年)的婦女生育率最接近下列哪一項：(A) 2.5 (B) 2.0 (C) 1.5 (D) 1.0 (E) 0.5

19. 下列哪一個國家的平均壽命最長(A)美國(B)俄羅斯(C)日本(D)亞塞拜然(E)尼泊爾

Part B: Macroeconomics (30 points for the first question and 20 points for the second question)

1. Consider a firm with profits given by $\pi = [(eL)^\alpha / \alpha] - wL$, where $0 < \alpha < 1$, $e > 0$, L is the number of workers, and w is the wage rate. A labor union has an objective function given by $U = (w - x)L$, where x is an index of its workers' outside opportunities. Assume that the firm and the labor union bargain over the wage rate, and that the firm then chooses L taking w as given.

(i) What value of L does the firm choose, given w? What is the resulting

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level of profits?

(ii) Suppose that $e = 1$ and suppose that the firm and the labor union choose w to maximize $U^{\gamma}\pi^{1-\gamma}$, where $0 < \gamma < \alpha$ indexes the union's power in the bargaining (this is known as the *Nash bargaining solution*). What level of w do they choose?

(iii) Suppose that $e = [(w-x)/x]^{\beta}$ for $w > x$, where $0 < \beta < 1$. Suppose that the firm and the labor union still choose w to maximize $U^{\gamma}\pi^{1-\gamma}$. Will an increase in β raise the Nash bargaining solution of the wage rate w? — Please use intuition to justify your answer.

2. Consider an economy with a production function:

(1) $Y_t = AK_t^{\alpha}L_t^{1-\alpha}$,

where Y_t is real output, K_t is capital stock, and L_t is the "effective work force." A and α are constants, and $0 < \alpha < 1$.

The effective work force is the product of three terms:

(2) $L_t = \theta h_t L$,

where L is the population, a constant, h_t is the skill level of the typical worker, and θ is the fraction of time the typical worker spends producing goods. The time $1 - \theta$ not spent producing goods is devoted to schooling which leads to improved skills, according to:

(3) $h_{t+1} = h_t + \gamma(1-\theta)h_t$, where $\gamma > 0$.

The savings rate for this economy is constant at s, and

$K_{t+1} = (1-\delta)K_t + sY_t$.

(i) Suppose that $X_t = K_t/h_t$. Show that X_t converges to a fixed value $\bar{X}$ as $t \to \infty$. Express $\bar{X}$ as an explicit function of the parameters (s, A, α, θ, L, δ and γ).

(ii) Describe the dynamics of this economy from a given initial position $X_0 = K_0/h_0$.

試題隨卷繳回