國立高雄大學九十五學年度研究所碩士班招生考試試題

科目：經濟學　　系所：經濟管理研究所全球管理組(A)　　□可 ■否 使用計算機

考試時間：100 分鐘　　本科原始成績：滿分 100 分

Note: There are 25 questions with 4 points for each question. Please choose the one alternative that best completes the statement or answers the question. For the incorrect answers, one point will be taken off for each question. In case of the question that no answer is written, no point will be taken off.

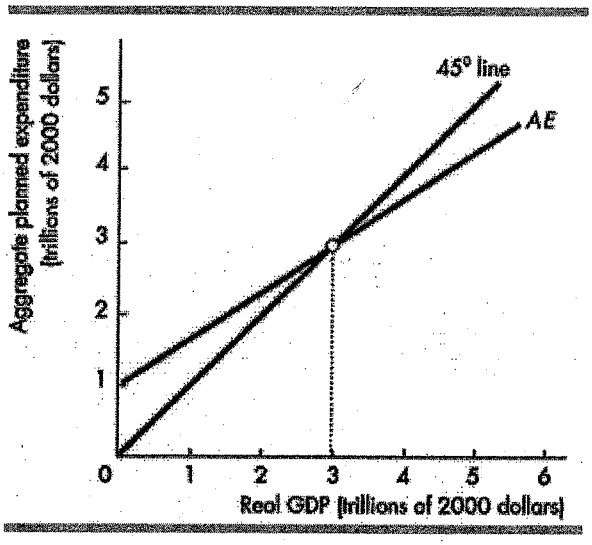
1) The law of diminishing returns implies that, with the use of capital fixed, as the use of labor rises,

A) total product will fall eventually.

B) the production process will become technologically inefficient eventually.

C) the total product of labor will fall below the marginal product of labor.

D) the marginal product of labor will fall eventually.



2) The figure above shows the economy of Tropical Isle. The price level is 100. When aggregate planned expenditure equals $2 trillion dollars, aggregate planned expenditure is _____ than real GDP, there is an unplanned _____ in inventories, and real GDP will _____.

A) greater; decrease; increase B) greater; increase; decrease

C) less; decrease; increase D) less; increase; decrease

3) Which of the following would lead GDP to *overstate* economic welfare?

A) restaurant workers that under-report tip income

B) the existence of home-cooked meals

C) electric utilities that switch to burning coal because of higher natural gas prices and thereby create more acid rain pollution

D) a self-employed CPA who takes a longer than normal vacation

4) Will is paid $10 an hour for the first 40 hours per week that he works. He can also work as many hours overtime as

國立高雄大學九十五學年度研究所碩士班招生考試試題

科目：經濟學　　系所：經濟管理研究所全球管理組(A)　□可 ■否 使用計算機

考試時間：100 分鐘　　本科原始成績：滿分 100 分

he wishes to. He is paid $15 an hour for every hour that he works beyond 40 hours a week. Leisure is a normal good for Will and he is currently working some overtime. If his hourly wage for the first 40 hours per week that he works rises to $12 and his wages for overtime remain at $15 per hour, he will choose to work

A) fewer hours per week.

B) more hours per week.

C) the same number of hours per week.

D) more hours per week if and only if his income exceeds his labor income.

E) more hours per day if and only if he works less than 20 hours overtime per week.

5) In Keynesian business cycle theory, the money wage rate is _____ in the downward direction and _____ in the upward direction.

A) market-determined; flexible B) rigid; flexible

C) flexible; market-determined D) flexible; rigid

6) Because of the free-rider problem, _____.

A) private provision leads to the production of more than the efficient quantity of a public good

B) the public uses too little of a common resource

C) private provision leads to the production of less than the efficient quantity of a public good

D) there is an efficient allocation of resources

7) In consumer equilibrium, Harold consumes pizza, sodas, and other goods. Pizza and soda are complements for Harold. The price of a pizza rises while his income remains the same. Harold then consumes

A) less pizza and more soda. B) less pizza and less soda.

C) more pizza and less soda. D) more pizza and more soda.

		Peter	
		Cheat	Comply
Keith	Cheat	($1 M, $1 M)	($12 M, $-2 M)
	Comply	($-2 M, $12 M)	($9 M, $9 M)

Note: (Keith's payoff, Peter' payoff)

8) Peter and Keith are the only firms that clean offices in a large city. They agree to operate as a cartel. The payoff matrix above shows the economic profit that each firm can make. If the game is played repeatedly forever, then _____.

A) Keith and Peter will each make $9 million profit

國立高雄大學九十五學年度研究所碩士班招生考試試題

科目：經濟學　　系所：經濟管理研究所全球管理組(A)　　□可 ■否 使用計算機

考試時間：100 分鐘　　本科原始成績：滿分 100 分

B) Keith and Peter will each make $1 million profit

C) Keith will comply and Peter will make $12 million profit

D) Keith will cheat and Peter will make -$2 million profit

9) Which of the following statements is FALSE?

A) A good with a straight line, downward sloping demand curve has a demand whose elasticity is constant.

B) A good with a vertical demand curve has a perfectly inelastic demand.

C) A good with a horizontal demand curve has a perfectly elastic demand.

D) All of the above statements are false.

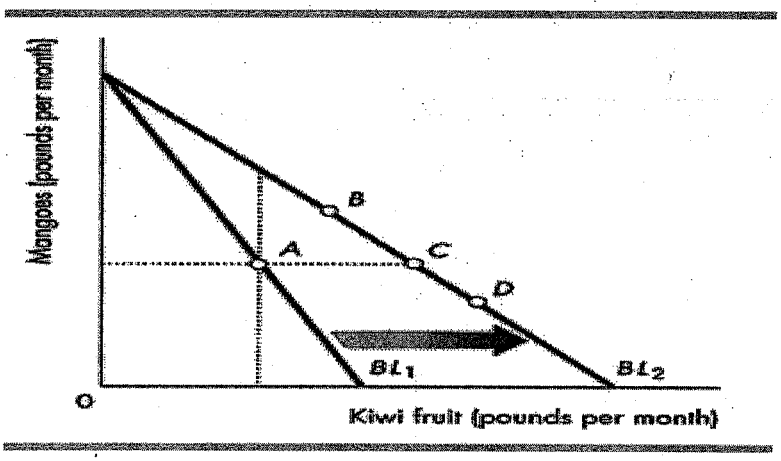
10) Suppose that the Fed is using this feedback rule: Every time real GDP exceeds potential GDP, contractionary policy is used and whenever real GDP is less than potential GDP, expansionary policy is used. GDP equals potential GDP and then aggregate demand increases. As a consequence of the policy action taken the resulting

A) expansionary policy will lower the price level from what it otherwise would be.

B) contractionary policy will lower the price level from what it otherwise would be.

C) expansionary policy will decrease unemployment from what it otherwise would be.

D) contractionary policy will decrease unemployment from what it otherwise would be.



11) In the above figure, Reggie's budget line rotates outward from BL_1 to BL_2. He initially consumes at point A. If his new consumption bundle is at point C, this implies that his demand curve for kiwi fruit

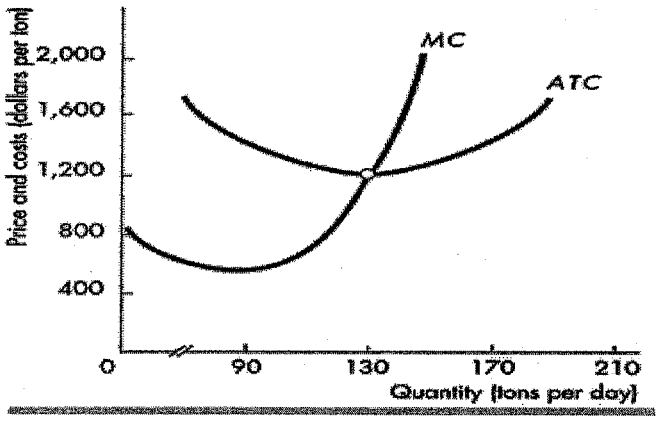
A) is a horizontal line. B) is a vertical line.

C) has shifted. D) slopes downward.

國立高雄大學九十五學年度研究所碩士班招生考試試題

科目：經濟學　　系所：經濟管理研究所全球管理組(A)　　□可 ■否 使用計算機

考試時間：100 分鐘　　本科原始成績：滿分 100 分



12) The figure above shows the costs for the typical grower in the perfectly competitive turnip industry. Currently, the price of a ton of turnips is $1,200. The demand for turnips increases permanently. The turnip industry experiences neither external economies nor external diseconomies. In the long run, the price of a ton of turnips _____.

A) decreases so it is below $1,200, and turnip growers will make normal profit

B) decreases so it is below $1,200 and the turnip growers earn an economic profit

C) is $1,200 and turnip growers will make normal profit

D) increases so it is above $1,200

13) If income increases or the price of a complement falls,

A) the demand curve for a normal good shifts leftward.

B) the demand curve for a normal good shifts rightward.

C) the supply curve of a normal good shifts rightward.

D) the supply curve of a normal good shifts leftward.

14) A perfect price discriminating monopoly produces the same output as a _____.

A) perfectly competitive industry but charges a lower price

B) single-price monopoly but charges a higher price

C) perfectly competitive firm

D) perfectly competitive industry

15) A drop in the price of a compact disc shifts the demand curve for prerecorded tapes leftward. From that you know compact discs and prerecorded tapes are

A) inferior goods. B) substitutes.

C) complements. D) normal goods.

16) Bart consumes food and clothing, which are both normal goods. Suppose that the price of food falls. The substitution effect of this price decrease is _____ and the income effect of this price decrease is _____.

國立高雄大學九十五學年度研究所碩士班招生考試試題

科目：經濟學　　系所：經濟管理研究所全球管理組(A)　□可 ■否 使用計算機

考試時間：100 分鐘　　本科原始成績：滿分 100 分

A) reflected by a change in the relative prices of food and clothing; is represented by a movement *along* the original indifference curve

B) reflected by the change in the slope of the budget line; that Bart has greater purchasing power

C) reflected by a parallel shift outward of the budget line; that Bart earns more money each month

D) that Bart buys more clothing and less food; that Bart buys more of both food and clothing

17) Let C represent consumption expenditure, S saving, I gross private domestic investment, G government purchases of goods and services, and NX net exports of goods and services. Then GDP equals

A) $C + I + G + NX$. B) $C + I + G - NX$.

C) $C + S + G + NX$. D) $C + S + G - NX$.

18) If a rightward shift of the supply curve leads to a 6 percent decrease in the price and a 5 percent increase in the quantity demanded, the price elasticity of demand is

A) -0.83. B) 0.60. C) -1.20. D) -0.30.

19) Marginal utility theory implies that, starting from consumer equilibrium, a rise in income will

A) increase consumption of all goods.

B) increase a consumer's total utility.

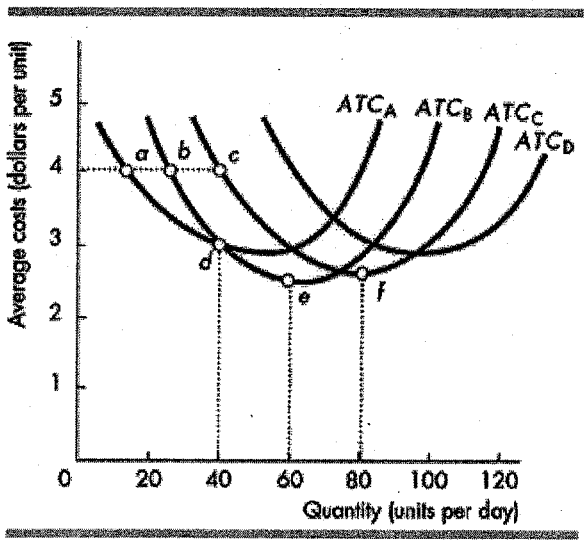
C) increase the marginal utility of all goods.

D) None of the above answers is correct.

20) A shift of the supply curve of oil raises the price from $10 a barrel to $30 a barrel and reduces the quantity demanded from 40 million to 23 million barrels a day. You can conclude that the

A) demand for oil is inelastic. B) demand for oil is elastic.

C) supply of oil is elastic. D) supply of oil is inelastic.



國立高雄大學九十五學年度研究所碩士班招生考試試題

科目：經濟學　　系所：經濟管理研究所全球管理組(A)　□可 ■否 使用計算機

考試時間：100 分鐘　　本科原始成績：滿分 100 分

21) The average total cost curves for plants A, B, C and D are shown in the above figure. Which plant is best to use to produce 50 units per day?

A) plant A B) plant B C) plant C D) plant D

22) A perfectly competitive firm's supply curve is made up of its marginal cost curve at all points above its minimum

A) average total cost curve. B) average variable cost curve.

C) average fixed cost curve. D) price.

23) The commercial banks on Sunny Island have checking deposits of $4 million, reserves of $600,000, and loans of $2.4 million. The required reserve ratio is 10 percent. The banks have _____ of required reserves and _____ of excess reserves.

A) $600,000; $0 B) $400,000; $200,000

C) $600,000; $200,000 D) $400,000; $600,000

24) Socrates owns just one ship. The ship is worth $200 million dollars. If the ship sinks, Socrates loses $200 million. The probability that it will sink is .02. Socrates' total wealth, including the value of the ship is $225 million. He is an expected utility maximizer with von Neuman-Morgenstern utility $U(W)$ equal to the square root of W. What is the maximum amount that Socrates would be willing to pay in order to be fully insured against the risk of losing his ship?

A) $4 million B) $2 million

C) $3.84 million D) $4.82 million E) $5.96 million

25) In an isolated mountain village, the only crop is corn. Villagers plan for two time periods. In the first time period each villager will harvest 100 bushels. In the second time period, no corn will be harvested. There is no trade with the rest of the world and no stocks of corn remain from before the first period. Corn can be stored from one time period to the next, but rats eat 25% of what is stored. The villagers all have Cobb-Douglas utility functions $U(C_1, C_2) = C_1 C_2$ and can allocate their own corn between consumption and storage as they wish. If the introduction of cats to the village reduces the rats' predations to 10% of what is stored,

A) consumption in the first time period will not change.

B) villagers will consume 5% more corn in each time period.

C) consumption in the first time period will increase but by less than 5%.

D) consumption in the second time period will not change.

E) consumption in the first time period will decrease.

國立高雄大學九十五學年度研究所碩士班招生考試試題

科目：統計學　　系所：經濟管理研究所全球管理組(A)　　■可 □否 使用計算機

考試時間：100 分鐘　　本科原始成績：滿分 100 分

1. Find mean and moment generating function of following distributions. (20%)

   (a) $f(x)=\dfrac{\lambda^x e^{-\lambda}}{x!}$ $\quad x=0,1,2,\cdots.$

   (b) $f(x)=\dfrac{1}{\sqrt{16\pi}}x^{1/2}\exp\{-x/2\},\quad x\ge 0.$

2. Suppose that the conditional distribution of Y given $X=x$ is Poisson with mean $E(Y|x)=x$, $Y|x\sim \text{Poisson}(x)$. However, x itself is a random variable with probability density function given by

$$f(x)=\begin{cases} e^{-x}, & x\ge 0 \\ 0, & \text{elsewhere.}\end{cases}$$

   Find $E(Y)$ and $Var(Y)$. (20%)

3. Suppose that two events A and B are independent. Show that A^c and B are independent where A^c is the complement of A. (10%)

4. Customers arrive in a certain shop according to an approximate Poisson process at a mean rate of 20 per hour. (20%)

   (a) What is the probability that the shopkeeper will have to wait more than 5 minutes for the arrival of the first customer?

   (b) What are the mean and variance of the waiting time for the first three customers arrivals?

5. Let $X_1, X_2, \cdots, X_n$ be a random sample from a distribution with p.d.f. (30%)

$$f(x;\theta)=(1/\theta)\exp\{-x/\theta\},\quad 0<x<\infty,\quad 0<\theta<\infty.$$

   (a) Find the maximum likelihood estimator $\hat{\theta}$ of θ.

   (b) Is $\hat{\theta}$ a consistent estimator of θ?

   (c) Derive the most powerful test for $H_0:\theta=\theta_0$ *versus* $H_a:\theta=\theta_a$ where $\theta_a<\theta_0$.

國立高雄大學九十五學年度研究所碩士班招生考試試題

科目：管理學　　系所：經濟管理研究所全球管理組(B)　　□可 ■否 使用計算機

考試時間：100 分鐘　　本科原始成績：滿分 100 分

Part I. Multiple Choice Questions (30%)

Please select ONE most appropriate answer in the following questions.

( ) 1. Which of the following statements is **TRUE**?

(A) Power is the potential ability to influence the behavior and decisions of other people.

(B) Feedforward control focuses on the organization's outputs.

(C) Centralized control relies on social values, traditions, shared beliefs, and trust to foster compliance with organizational goals.

(D) A permanent team designed to solve short-term problems is called a task force.

(E) Telecommuting means using computers and telephones at the office.

( ) 2. Which of the following statements is **FALSE**?

(A) Existence and relatedness are the first two groups of needs in ERG theory.

(B) Content theories provide insight into the needs of people in organizations.

(C) In Maslow's hierarchy of needs theory, food, water, and freedom from violence are examples of physiological needs.

(D) The equity theory states that equity exists when the ratio of outcomes to inputs for one person is equal to the same ratio for another person.

(E) Bargaining power of customers is one of Porter's five competitive forces.

( ) 3. The concept of "network effect" is:

(A) Customers can group in networks so as to increase their bargaining power when interacting with companies. Thus, the larger the network, the better the customers are.

(B) In certain cases, the utility from using a product or service is positively related to the number of other users of the product or service.

(C) When a company makes a network of products, that is, products that differ across more than one dimension, it can realize economies of scope.

(D) When many people join the same network, it results in congestion and in poor service.

(E) When a company carries out her business by e-commerce.

( ) 4. Mary was recently told by upper management that they expected her to exercise more authority and leadership in her work group. Just two days prior to that, her team told her that while they appreciated the initiative she demonstrated, they expected her to be less authoritative and more democratic in the future. The term that **best** describes what Mary is experiencing is:

(A) role ambiguity.

(B) role distance.

(C) role conflict.

(D) role overload.

(E) role playing.

國立高雄大學九十五學年度研究所碩士班招生考試試題

科目：管理學　　系所：經濟管理研究所全球管理組(B)　　□可 ■否 使用計算機

考試時間：100 分鐘　　本科原始成績：滿分 100 分

( ) 5. China Airlines allows the agent-in-charge at the gate to decide whether to give out a "free ticket" to some passengers when the flight is overbooked. This is an example of:
(A) restructuring.
(B) social recognition.
(C) self-esteem.
(D) empowerment.
(E) free rider.

( ) 6. A survey of Canadian college students asked about television advertising. When asked to name their least favorite ad, the majority said the Mazda ad with the "zoom, zoom, zoom" voiceover. The students complained the ad had appeared in nearly every commercial break over period of time. The repetition of the Mazda ad created:
(A) brand conviction (confidence).
(B) a negative brand personality.
(C) brand familiarity.
(D) brand loyalty.
(E) brand satisfaction.

( ) 7. According to the American Marketing Association, marketing is the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational goals. In other words, marketing plans and executes the:
(A) marketing mix
(B) market niche strategy
(C) customerization strategy
(D) product life cycle
(E) broad and task environments

( ) 8. _____ marketing requires the various marketing functions to cooperate and all other departments to coordinate their efforts with each other.
(A) Responsive
(B) Integrated
(C) Transaction
(D) Anticipative
(E) Direct

( ) 9. Which of the following statements **best** represents the societal marketing concept?
(A) We have developed a new, more convenient package.
(B) We use only recycled paper in our packaging.
(C) This product saves much more time for the consumer.

國立高雄大學九十五學年度研究所碩士班招生考試試題

科目：管理學　　系所：經濟管理研究所全球管理組(B)　　□可 ■否 使用計算機

考試時間：100 分鐘　　本科原始成績：滿分 100 分

(D) Give the customers what they want.

(E) Sell at the lowest price.

( ) 10. Which of the following is **NOT** a method typically used by a service provider to monitor how consumers perceive its service quality?

(A) Comparison shopping

(B) Customer surveys

(C) SWOT analysis

(D) Ghost shopping

(E) Service-audit teams

( ) 11. Starbucks Corp, the U.S.-based specialty coffee chain, and Swiss-based Bon Attpetit Group A. G. Share ownership and control of the Starbucks coffeehouses in Switzerland. The two companies have entered into a:

(A) contract manufacturing.

(B) joint venture.

(C) cooperative organization.

(D) direct investment.

(E) licensing agreement.

( ) 12. A(n) _____ market is characterized by fairly narrowly defined market with a complete and distinct set of needs, and a willingness to pay a premium to meet those needs.

(A) local

(B) niche

(C) individual

(D) derived

(E) homogeneous

( ) 13. The stage of the product life cycle characterized by low sales, heavy promotion, low profit, and minimal competition is the _____ stage.

(A) introduction

(B) growth

(C) repositioning

(D) maturity

(E) decline

( ) 14. Sun Microelectronics custom-orders processors, chips, and circuit boards for Sun's desktop, server, and storage products. Sun doesn't actually make any of its microelectronic gear itself. Sun contacts the work to outside manufacturers, who in turn reply on components from their own subcontracted suppliers. All totaled, it's a supply chain with 150 links located in places such as Canada, Japan, Taiwan, and the United Kingdom. Sun could use _____ system

to mage this system.

(A) hierarchical planning

(B) enterprise resource planning

(C) quick response

(D) organizational network

(E) matrix management

(　) 15. Harris Engineering Company routinely performs various analyses to ensure short-term goals are being met. These analyses include sales analyses, financial analyses, and market-share analyses. Any deviation is studied and corrective action is taken. Harris is engaged in _____ control.

(A) annual-plan

(B) profitability

(C) strategic

(D) efficiency

(E) liquidity

Part II. Essay Questions

1. Change in business is inevitable.

(1) Why both the business leaders and its employees may be resistant to change? Discuss at least **THREE** reasons. (10%)

(2) Can you adopt Kurt Lewin's model to aid employees as they move toward the necessary change? (10%)

2. Figure 1 depicts the first mover's experience curve and the second mover's experience curve respectively. Please describe your observation. (15%)

(Note: $Y > X > A$; $O_1 < O_2 < T$)

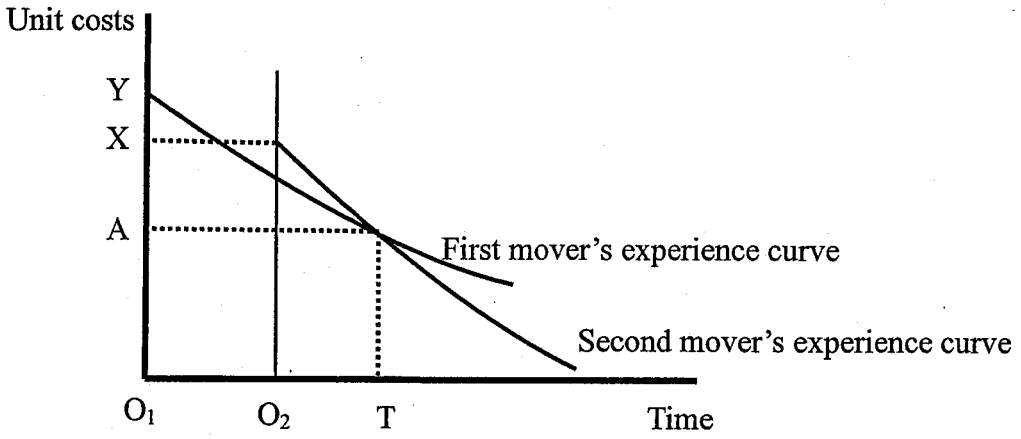


Figure 1

國立高雄大學九十五學年度研究所碩士班招生考試試題

科目：管理學　　系所：經濟管理研究所全球管理組(B)　　□可 ■否 使用計算機

考試時間：100 分鐘　　本科原始成績：滿分 100 分

3. Beyond evaluating current businesses, designing the business portfolio involves finding future businesses and products the company should consider. Using the product/market expansion grid (see Table 1 below), prepare a list of new business and product ideas for one of the following companies: (a) Sony, (b) Fuji film division, (c) Levis Strauss Docker's division, (d) Citibank, or (e) BMW. Be sure to cover all the cells in the grid. (20%)

Table 1

	Existing products	**New products**
Existing markets	Market penetration	Product development
New markets	Market development	Diversification

4. Assuming that you are the marketing manager for a cosmetics company that has just developed a new line of male cosmetics. The cosmetics are invisible on the skin, reduce aging lines significantly, and provide some protection from the sun. Using the major segmentation variables (e.g., geographic, demographic, psychographic, and behavioral), construct a brief profile of three market segments that you suspect might be interested in this new product line. Explain your profiling procedures and those segments for your target markets (15%).

國立高雄大學九十五學年度研究所碩士班招生考試試題

科目：統計學　　系所：經濟管理研究所全球管理組(B)　　■可 □否 使用計算機

考試時間：100 分鐘　　本科原始成績：滿分 100 分

1. Find mean and moment generating function of following distributions. (20%)

   (a) $f(x) = \dfrac{\lambda^x e^{-\lambda}}{x!} \qquad x = 0, 1, 2, \cdots.$

   (b) $f(x) = \dfrac{1}{\sqrt{16\pi}} x^{1/2} \exp\{-x/2\}, \qquad x \geq 0.$

2. Suppose that the conditional distribution of Y given $X = x$ is Poisson with mean $E(Y|x) = x$, $Y|x \sim \text{Poisson}(x)$. However, x itself is a random variable with probability density function given by

$$f(x) = \begin{cases} e^{-x}, & x \geq 0 \\ 0, & \text{elsewhere.} \end{cases}$$

   Find $E(Y)$ and $Var(Y)$. (20%)

3. Suppose that two events A and B are independent. Show that A^c and B are independent where A^c is the complement of A. (10%)

4. Customers arrive in a certain shop according to an approximate Poisson process at a mean rate of 20 per hour. (20%)

   (a) What is the probability that the shopkeeper will have to wait more than 5 minutes for the arrival of the first customer?

   (b) What are the mean and variance of the waiting time for the first three customers arrivals?

5. Let $X_1, X_2, \cdots, X_n$ be a random sample from a distribution with p.d.f. (30%)

$$f(x;\theta) = (1/\theta)\exp\{-x/\theta\}, \qquad 0 < x < \infty, \quad 0 < \theta < \infty.$$

   (a) Find the maximum likelihood estimator $\hat{\theta}$ of θ.

   (b) Is $\hat{\theta}$ a consistent estimator of θ?

   (c) Derive the most powerful test for $H_0 : \theta = \theta_0$ *versus* $H_a : \theta = \theta_a$ where $\theta_a < \theta_0$.

國立高雄大學九十五學年度研究所碩士班招生考試試題

科目：個體經濟學　　系所：經濟管理研究所全球經貿組　　□可 ■否 使用計算機

考試時間：100 分鐘　　本科原始成績：滿分 100 分

I. Multiply Choice Questions (50%)

(1) The snow removal business in Japan is a competitive industry. All snow-plow operators have the cost function $c = Q^2 + 25$, where Q is the number of driveways cleared. Demand for snow removal in the town is given by $Q_d = 120 - P$. The long run equilibrium number of firms in this industry is

(a) 11
(b) 22
(c) 14
(d) 120
(e) 23

(2) A profit maximizing monopoly faces the following demand function, P(y)=70-y and its total costs are C(y)=7y. In the past it was not taxed, but now it must pay a tax of 6 dollars per unit of output. After the tax, the monopoly will

(a) increase its price by 3.
(b) increase its price by 9.
(c) increase its price by 6.
(d) increase its price by 2.
(e) leave its price constant.

(3) An industry has two firms each of which produces output at a constant unit cost of $10 per unit. The demand function for the industry is q = 1,000,000/p. The Cournot equilibrium price for this industry is

(a) 5
(b) 10
(c) 15
(d) 20
(e) 25

國立高雄大學九十五學年度研究所碩士班招生考試試題

科目：個體經濟學　　系所：經濟管理研究所全球經貿組　　□可 ■否 使用計算機

考試時間：100 分鐘　　本科原始成績：滿分 100 分

(4) If the production function for comics books is $0.1J^{0.5}L^{0.75}$, where J is the number of jokes and L is the number of hours of cartoonists' labor used. If the jokes costs $1 each and cartoonists' labor costs $6 per hour, then the cheapest way to produce comics books requires using J and L in the ration J/L:

(a) 6
(b) 8
(c) 2
(d) 2/3
(e) 4

(5) If demand in the US is given by Q_1=20,000-1,000P_1, where P_1 is the price in the US and if the demand in England is given by Q_2=5400-300P_2, where P_2 is the price in England, then the difference between the price charged in England and the price charged in the US will be

(a) 1
(b) 2
(c) 0
(d) 11
(e) 3

(6) The constant elasticity of demand for cigarettes has been estimated to be 0.5. To reduce smoking by 75%, approximately how much tax needs to be added to a $1 pack?

(a) 0.38
(b) 0.75
(c) 1.5
(d) 2.25
(e) 4.0

(7) A profit-maximizing firm continues to operate even though it is losing money. It sells its product at a price of $100. From these facts we deduce that

(a) AC is less than $100
(b) AFC is less than $100
(c) Marginal cost is increasing
(d) AVC is less than $100
(e) Marginal cost is decreasing

國立高雄大學九十五學年度研究所碩士班招生考試試題

科目：個體經濟學　　系所：經濟管理研究所全球經貿組　　□可 ■否 使用計算機

考試時間：100 分鐘　　本科原始成績：滿分 100 分

(8) Big Pig and Little Pig have two possible strategies, Press the Button, and Wait at the trough. If both pigs choose Wait, both get 3. If both pigs press the button then Big Pig gets 9 and Little Pig gets 1. If Little Pig presses the button and Big Pig waits at the trough, then Big Pig gets 10 and Little Pig gets 0. Finally, if Big Pig presses the button and Little Pig waits, then Big Pig gets 7 and Little Pig gets 1. In Nash equilibrium,

(a) Little Pig will get a payoff of 1 and Big Pig will get a payoff of 7.
(b) Little Pig will get a payoff of 1 and Big Pig will get a payoff of 9.
(c) Both pigs will wait at the trough.
(d) Little Pig will get a payoff of 0.
(e) There is no Nash equilibrium.

(9) Georgina consumes only grapefruits and pineapples. Her utility function is $U(x, y) = x^2y^8$, where x is the number of grapefruits consumed and y is the number of pineapples consumed. Georgina's income is \$105, and the prices of grapefruits and pineapples are \$1 and \$3, respectively. How many grapefruits will she consume?

(a) 10.5
(b) 7
(c) 63
(d) 21
(e) None of the above.

(10) Helen is taking a course from Professor Goodheart who will count only her best midterm grade and from Professor Stern who will count only her worst midterm grade. In one of her classes, Helen has scores of 30 on her first midterm and 50 on her second midterm. When the first midterm score is measured on the horizontal axis and her second midterm score on the vertical, her indifference curve has a slope of zero at the point (30, 50). Therefore this class could

(a) be Professor Goodheart's but could not be Professor Stern's.
(b) be Professor Stern's but could not be Professor Goodheart's.
(c) not be either Professor Goodheart's or Professor Stern's.
(d) be either Professor Goodheart's or Professor Stern's.
(e) none of the above.

國立高雄大學九十五學年度研究所碩士班招生考試試題

科目：個體經濟學　　系所：經濟管理研究所全球經貿組　　□可 ■否 使用計算機

考試時間：100 分鐘　　本科原始成績：滿分 100 分

II. Essay Questions (50%)

1. **True or False.** If the value of the marginal product of factor x increases as the quantity of x increases and the value of the marginal product of x is equal to the wage rate, then the profit-maximizing amount of x is being used. Explain (10 pts)

2. A common saying regarding the price hike in medical care is that rising price of medical care over time has hurt consumers. However, health economists disagree by saying that the quality of medical care has improved over time. Consumers may be better off with higher quality of care as the rising price of medical care reflects higher cost in producing better care. Use graph to show these two viewpoints. Assume that the increase in price is due to an increase in the cost of production and MC is constant. (15 points)

3. A welfare program for low-income people offers a family a basic grant of $6000 per year. This grant is reduced by $0.75 for each $1 of other income the family has. Assume that there are 8000 hours per year and the head of the family can earn $4 per hour and that the family has no other income.(25 pts)
   (a) Specify and graph the annual budget constraint for this family if it does not participate in the welfare program. Use C and L to represent consumption and leisure respectively.
   (b) Specify and graph the annual budget constraint if the family chooses to participate in the welfare program. How much in welfare benefits does the family receive if the head of the family earns $2000 per year?
   (c) Suppose the government changes the rule of the welfare program to permit families to keep 50 percent of what they earn. Draw the annual budget constraint. Can you predict whether the head of this family will work more or less under the new rule?

國立高雄大學九十五學年度研究所碩士班招生考試試題

科目：總體經濟學　　系所：經濟管理研究所全球經貿組　　□可 ■否 使用計算機

考試時間：100 分鐘　　本科原始成績：滿分 100 分

1. Please use the *IS-LM* framework to describe Poole's (*QJE*, 1970) statements below:
   (a) If output deviates from its equilibrium level mainly because the *IS* curve shifts about, output is stabilized by keeping the money stock constant. The Fed should, in this case, have monetary targets. (10%)
   (b) If output deviates from its equilibrium level mainly because the demand-for-money function shifts about, the Fed should operate monetary policy by fixing the interest rate. (10%)

2. Please show the differences between Solow's neoclassical growth theory and endogenous growth theory (*AK* model for example), in the reaction of a decline in savings rate. (20%)

3. Please
   (a) state the relationship amongst saving, investment and current account balance for a small open economy, and the advantages of being an "open" rather than "closed" economy. (10%)
   (b) show graphically the effects of *a temporary adverse supply shock* (e.g., an increase in oil price) and *an increase in the expected future marginal product of capital* (e.g., information technology enhancement), respectively, on saving, investment and current account balance. (10%)

4. Please comment on the following policies implemented by Taiwan government using the Mundell-Fleming framework.
   (a) An expansionary fiscal policy will be right for Taiwan to stimulate its economy from recession. (10%)
   (b) In order to make the tightened import policy effective, Taiwan's central bank should peg the exchange rate fixed. (10%)

5. Please state the following key terms briefly:
   (a) Solow residual (5%)　　(b) *J* curve (5%)
   (c) Liquidity trap (5%)　　(d) Inflation tax (5%)

國立高雄大學九十五學年度研究所碩士班招生考試試題

科目：統計學　　系所：經濟管理研究所全球經貿組　　■可 □否 使用計算機

考試時間：100 分鐘　　本科原始成績：滿分 100 分

1. If $E(X^{2r}) = \dfrac{(2r)!}{2^r r!}$ and $E(X^{2r+1}) = 0$, $r = 0, 1, 2, 3, \cdots$, find $M(t)$, the moment generating function of X, and the distribution of X. (15%)

2. Customers arrive in a certain shop according to an approximate Poisson process at a mean rate of 20 per hour. (20%)

   (a) What is the probability that the shopkeeper will have to wait more than 5 minutes for the arrival of the first customer?

   (b) What are the mean and variance of the waiting time (in minutes) for the first three customers arrivals?

3. We are interested in determining the relationship between daily demand (y) and the unit price (x) for a particular item. Consider a simple linear regression model, $y_t = \beta_1 + \beta_2 x_t + \varepsilon_t$. A sample of 10 days demand and associated price resulted in the following data: (30%)

$$\sum x = 100 \qquad \sum x^2 = 1254 \qquad \sum xy = 2546$$

$$\sum y = 280 \qquad \sum y^2 = 8180$$

   (a) Calculate the least squares estimated regression line. Interpret the estimate coefficients.

   (b) Construct the corresponding ANOVA table. Write down the null and alternative hypotheses corresponding to the F value and state your conclusion.

   (c) At $\alpha = 0.05$, test H_0: $\beta_2 \le -2$ *versus* H_A: $\beta_2 > -2$.

國立高雄大學九十五學年度研究所碩士班招生考試試題

科目：統計學　　系所：經濟管理研究所全球經貿組　　■可 □否 使用計算機

考試時間：100 分鐘　　本科原始成績：滿分 100 分

4. Let $X_1, X_2, \cdots, X_n$ be independent, uniformly distributed random variables on the interval [0, θ]. (20%)

(a) Find the maximum likelihood estimator $\hat{\theta}$ of θ.

(b) Is $\hat{\theta}$ an unbiased estimator of θ?

(c) Is $\hat{\theta}$ a consistent estimator of θ?

5. For a given experiment, S denotes the sample space and $A_1, A_2, A_3, \ldots$ represent possible events. Assume that a number $P(A)$, called the ***probability*** of A, satisfies the following three axioms:

(Axiom 1) $P(A) \geq 0$ for every A;

(Axiom 2) $P(S) = 1$;

(Axiom 3) $P\left(\bigcup_{i=1}^{\infty} A_i\right) = \sum_{i=1}^{\infty} P(A_i)$ if $A_i \cap A_j = \varnothing$ for $i \neq j$.

Consider the experiment of rolling a fair die, where the experimental outcome is defined as the number of dots appearing on the upward face of the die. Show that the probability that one dot appears on the upward face of the die is 1/6.

(15%)

Area in Upper Tail

***t* Distribution**		
Degrees of Freedom	**Upper 5% point**	**Upper 2.5% point**
6	2.447	3.143
7	2.365	2.998
8	2.306	2.896
9	2.262	2.821
10	2.228	2.821
⋮	⋮	⋮
∞	1.645	1.96