

考試科目	保險法	所別	風管所 / 法律 4181 / 112	考試時間	2月22日(天) 第 1 節
<p>一、<u>正大</u>保險公司為方便消費者投保傷害保險，便與<u>全佳</u>便利超商合作，在該超商據點設置自動機器。消費者只需在該機器上操作，輸入要保人、被保險人、受益人身份資料後，即可購買保險金額 10 萬元之傷害保險。完成輸入後，該機器會自動列印應繳保費單據，消費者只要持單據在該超商繳費取得收據，即可獲得保額 10 萬元之即時傷害保險保障。某日，張三以自己要保人，其妻李四為被保險人，其子張五為受益人，按上述方式完成投保。不料，於張三收到<u>正大</u>保險公司出具的正式保險單前，李四發生車禍意外身故。依保險法之規定，<u>正大</u>保險公司或<u>全佳</u>超商應否負責？試分析之。(25 分)</p> <p>二、據報載，許多「老人互助組織」為幫助窮困無依老人在往生後能妥適善後，遂招攬老人加入會員，並以其月繳會費方式累積金錢。老人往生後，該互助組織將按照其入會年資支付互助慰問金。此等互助組織經營此類業務，是否違反保險法相關規定？試論述之。(25 分)</p> <p>三、人壽保險商品大多提供「保單貸款」(policy loan)之機能，依保險法之規定，保險人是否有提供保單貸款之義務？試論述之(25 分)</p> <p>四、依保險法之規定，「定值保險」與「不定值保險」之區分何在？試說明之。(25 分)</p>					
備註	試題隨卷繳交				

考試科目	民法(總則與債編各篇)	別 風險管理與保險學系 法律組 4181	考試時間	2月22日(六) 第三節
<p>一、甲因旅遊之需，向乙租用汽車一輛。甲於旅遊期間，駕駛該車違規闖越紅燈，撞及行人丙，丙因而受有左腿骨折之傷害。丙向甲請求損害賠償時，甲始知該車並未依法投保強制汽車責任保險。丙向交通事故特別補償基金請求補償，獲得 50 萬元之補償金後，交通事故特別補償基金又向甲起訴代位請求 50 萬元，並獲勝訴判決確定，甲遂依債務不履行及侵權行為之規定，向乙請求賠償 50 萬元。乙則抗辯甲之所以被代位求償，乃出於甲自己的過失侵權行為，與乙是否投保強制汽車責任保險無關。試問：甲、乙之主張孰為有理？請分析相關的請求權基礎說明之。(25 分)</p> <p>二、甲男單戀已婚之同事乙女，無法自拔，除每日寄發電子郵件與簡訊表達愛慕之意外，並且在每天下班後均打電話邀約乙女外出吃飯、喝咖啡、看電影，雖均遭乙女拒絕，但仍愛意堅定。即便由乙女之夫丙代為接聽電話，甲竟對丙明白表示深愛著乙，希望丙能成全。因歷時三個月甲仍不罷手，丙不堪其擾，遂主張甲之行為侵害其身分法益，訴請丙賠償其所受精神上損害。試問：</p> <p>(1) 丙之主張，有無理由？(10 分)</p> <p>(2) 若三個月後，乙女受甲男之誠意感動，遂接受其邀約，與之一同手牽手外出吃飯、喝咖啡、看電影。丙因而主張甲、乙二人構成共同侵權行為，訴請二人連帶賠償責任，有無理由？(15 分)</p> <p>三、A 因出國進修，將自己所有，價值新台幣 30 萬元之重型機車一輛，無償委託友人 B 保管。保管期間，B 之友人 C 見該車極為帥氣，甚為喜愛，B 因缺錢花用，擅自將該車以 25 萬元的價格出賣予 C，並交付之。孰知 C 取得該機車後，未支付任何款項即避不見面，不知去向。A 返國後始知上情。試問：A 得向 B、C 主張何種權利？(25 分)</p> <p>四、甲、乙二人為同性戀伴侶，某日為慶祝甲之生日，二人一同前往某餐廳用餐。於等待服務生帶位時，二人有互為親吻等親暱舉止。餐廳負責人丙因厭惡同性戀者，遂拒絕甲、乙二人於該餐廳消費。甲乙二人感覺深受歧視，甚為不滿，遂訴請餐廳損害賠償。丙則抗辯甲乙二人的行為會影響其他客人的用餐環境，且丙亦享有契約自由，故有權拒絕甲乙用餐消費。請從民法角度分析：甲、乙之請求及丙之抗辯孰為有理？(25 分)</p>				
備註	試題隨卷繳交			

商學院

考試科目	經濟學	所別	4111-4182-4121-4122 4171-4191-4194-4211	考試時間	2月22日(六)第一節
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Multiple Choice (1 point each)

Identify the letter of the choice that best completes the statement or answers the question.

- Which of the following is an advantage of tradable pollution permits?
 - Each firm is allowed to pollute exactly the same amount.
 - Revenue from the sale of permits is greater than revenue from a corrective tax.
 - The initial allocation of permits to firms does not affect the efficiency of the market.
 - Firms will engage in joint research efforts to reduce pollution.
- Alicia is a vegetarian, so she does not eat beef. That is, beef provides no additional utility to Alicia. She loves potatoes, however. If we illustrate Alicia's indifference curves by drawing beef on the horizontal axis and potatoes on the vertical axis, her indifference curves will
 - slope downward.
 - be vertical straight lines.
 - slope upward.
 - be horizontal straight lines.
- Which of the following demonstrates the law of demand?
 - After Jon got a raise at work, he bought more pretzels at \$1.50 per pretzel than he did before his raise.
 - Melissa buys fewer muffins at \$0.75 per muffin than at \$1 per muffin, other things equal.
 - Dave buys more donuts at \$0.25 per donut than at \$0.50 per donut, other things equal.
 - Kendra buys fewer Snickers at \$0.60 per Snickers after the price of Milky Ways falls to \$0.50 per Milky Way.
- Suppose researchers at the University of Wisconsin discover a new vitamin that increases the milk production of dairy cows. If the demand for milk is relatively inelastic, the discovery will
 - raise both price and total revenues.
 - lower both price and total revenues.
 - raise price and lower total revenues.
 - lower price and raise total revenues.

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註 試題隨卷繳交

政學院

考試科目	經濟學	所別	411.418.4121.4122 4171.4191.4194.4211 4212	考試時間	2月22日(六)第一節
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5. When a tax is levied on buyers of tea,
 - A. buyers of tea and sellers of tea both are made worse off.
 - B. buyers of tea are made worse off, and the well-being of sellers is unaffected.
 - C. buyers of tea are made worse off, and sellers of tea are made better off.
 - D. the well-being of both buyers of tea and sellers of tea is unaffected.

6. When a country allows trade and becomes an exporter of a good
 - A. consumer surplus and producers surplus will increase.
 - B. consumer surplus and producer surplus will decrease.
 - C. consumer surplus will increase and producer surplus will increase.
 - D. consumer surplus will decrease and producer surplus will increase.

7. When a perfectly competitive firm makes a decision to shut down, it is most likely that
 - A. marginal cost is above average variable cost.
 - B. price is below the minimum of average variable cost.
 - C. fixed costs exceed variable costs.
 - D. average fixed costs are rising.

8. Price discrimination is a rational strategy for a profit-maximizing monopolist when
 - A. there is no opportunity for arbitrage across market segmentations.
 - B. there is an opportunity for arbitrage across market segmentations.
 - C. consumers are unable to be segmented into identifiable markets.
 - D. they want to increase the deadweight loss that results from profit-maximizing behavior.

9. As a group, oligopolists would always be better off if they would act collectively
 - A. as a single monopolist.
 - B. as a single competitor.
 - C. as if they were each seeking to maximize their own profit.
 - D. in a manner that would prohibit collusive agreements.

10. If firms in a monopolistically competitive industry are making profits,
 - A. firms will likely be subject to regulation.
 - B. barriers to entry will be strengthened.
 - C. new firms will enter the market.
 - D. some firms must exit the market.

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註 試題隨卷繳交

商學院

考試科目	經濟學	所別	4111.4182.4121.4122 4171.4191.4194.4211	考試時間	2月22日(六) 第一節
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11. A company uses 100 workers and 30 units of capital to produce 500 units of output. If this company increases its capital to 50 units and, as a result, its output increases by 300 units, the productivity of labor _____ to _____ units per worker.

- A. increases; 1
- B. increases; 3
- C. increases; 8
- D. decreases; 4

12. Official unemployment statistics:

- A. understate unemployment because individuals receiving unemployment compensation are counted as employed.
- B. understate unemployment because discouraged workers are not counted as unemployed.
- C. include cyclical and structural unemployment, but not frictional unemployment.
- D. overstate unemployment because workers who are involuntarily working part time are counted as being employed.

13. A car that is produced in 2004 is not sold until 2005. According to the definition of GDP, in which year's GDP should it be counted?

- A. 2004.
- B. 2004 real GDP; 2005 nominal GDP.
- C. both years.
- D. 2005.

Total Population	30,000
Working-Age Population	25,000
Employment	11,000
Unemployment	1,000

14. Consider the data in the table above for a simple economy. The unemployment rate for this simple economy equals:

- A. 4.0%.
- B. 9.1%.
- C. 8.3%.
- D. 3.3%.

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15. Which of the following could cause nominal GDP to decrease, but real GDP to increase?
- The price level rises and the quantity of final goods and services produced falls.
 - The price level rises and the quantity of final goods and services produced rises.
 - The price level falls and the quantity of final goods and services produced falls.
 - The price level falls and the quantity of final goods and services produced rises.
16. When a member of the nonbank public withdraws currency from her bank account,
- both the monetary base and bank reserves rise.
 - bank reserves fall, but the monetary base remains unchanged.
 - both the monetary base and bank reserves fall.
 - the monetary base falls, but bank reserves remain unchanged.
17. When economists state that money is neutral in the long run, they mean that in the long run,
- the price level is independent of the nominal money supply.
 - the level of output is independent of the nominal money supply.
 - changes in the money supply have the same impact on the rich as they do on the poor.
 - fluctuations in the money supply are equally likely to lead to recessions as to expansions.
18. An expansionary monetary policy that successfully counteracts a recession has the side effect of
- lower investment spending than if no action had been taken.
 - lower output than if no action had been taken.
 - a higher price level than if no action had been taken.
 - a larger government deficit than if no action had been taken.
19. The less interest-sensitive is money demand, the
- steeper is the IS curve.
 - flatter is the LM curve.
 - more effective is monetary policy relative to fiscal policy.
 - more effective is fiscal policy relative to monetary policy.
20. The quantity theory of inflation indicates that the inflation rate equals
- the growth rate of the money supply minus the growth rate of aggregate output.
 - the level of the money supply plus the level of aggregate output.
 - the growth rate of the money supply plus the growth rate of aggregate output.
 - the level of the money supply minus the level of aggregate output.

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註 試題隨卷繳交

商學院

考試科目	經濟學	所別	4111-4182-4121-4122 4191-4191-4194-4211 4212	考試時間	2月22日(六)第一節
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Problems and Short-essay Questions

Please answer the following questions IN SEQUENCE. All questions may be answered in either Chinese or English.

1. Suppose that a firm's fixed proportion production function is given by

$$q = \min(2k, 10l - 2).$$

The inputs are hired in perfectly competitive markets. The rental rates of capital (k) and labor (l) are v and w , respectively.

- (10 points) Calculate the firm's long-run total, average, and marginal cost functions.
- (10 points) Suppose that k is fixed at 9 in the short run. Calculate the firm's short-run total, average, and marginal cost functions.

2. (20 points) Consider the good x imported by the home country. To keep things simple, assume that x constitutes a homogeneous good and that the market for it is perfectly competitive. The demand for x at home is given by $Q_D = 200 - 4P$. The domestic market supply is given by $Q_S = 4P - 40$.

- Suppose that x can be imported at a fixed world price of \$20. Suppose that the home government imposes an import tariff of \$5 per unit of x . What is the total number of x imported from abroad?
- Suppose that, because of political-economy considerations, the home government sets its import tariff, t , in order to maximize:

$$\text{Consumer Surplus} + \text{Tariff Revenues} + A \times (\text{Producer Surplus}).$$

What is the value of A under which the home government would impose an import tariff of \$5?

3. Assume that firms care about their after-tax rate of return on investment projects. And, suppose the incumbent government has decided to raise taxes on corporations. Use the loanable funds model to explain the effect of the tax increase.

- (7 points) What effect will this have on the investment demand curve? Explain and graph the effect.
- (7 points) What effect will this have on national savings? Explain and graph the effect.
- (6 points) Consider both effects that you have described in parts **a** and **b**. What will happen to the real interest rate, national savings, and investment? Explain and graph the effect.

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註 試題隨卷繳交

新學院

考試科目	經濟學	所別	4111. 4182. 4121. 4122 4171. 4191. 4194. 4211	考試時間	2 月 22 日 (六) 第一節
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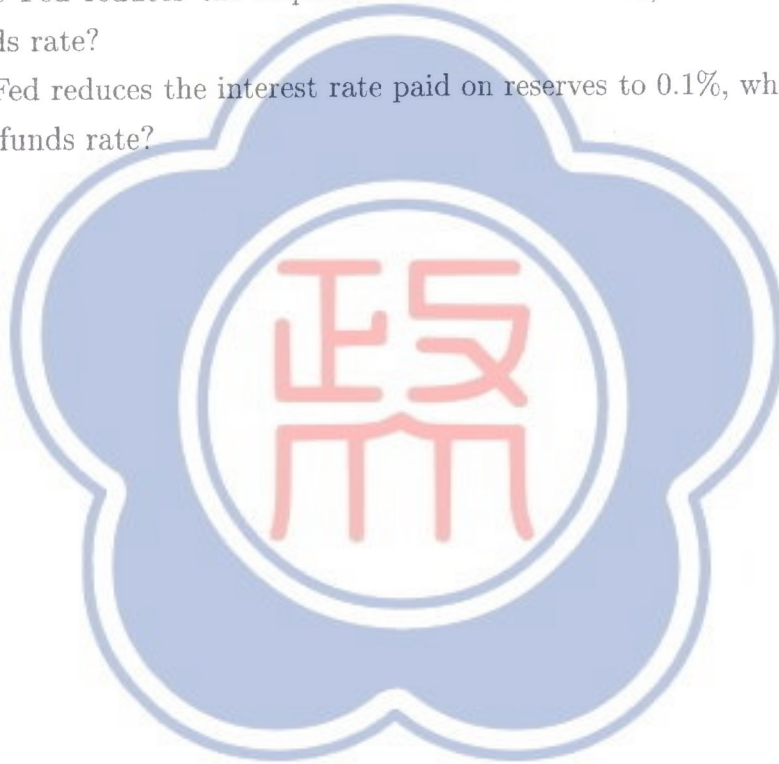
4212

4. Suppose currently the discount rate is 0.8%, the interest rate the Fed (the central bank) is paying for banks' excess reserves is 0.2%, the required reserve ratio is 5%, and the equilibrium federal funds rate is 0.2%.

a. (6 points) If the Fed reduces the discount rate to 0.6%, what will happen to the equilibrium federal funds rate?

b. (7 points) If the Fed reduces the required reserve ratio to 4%, what will happen to the equilibrium federal funds rate?

c. (7 points) If the Fed reduces the interest rate paid on reserves to 0.1%, what will happen to the equilibrium federal funds rate?



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考試科目	統計學	所別	風險管理與保險學系 管理組 ψ182	考試時間	2月22日(星期六) 第三節
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1. (30%) Define the following terms:
- (1) Random variable (10%)
 - (2) Central Limit Theorem (10%)
 - (3) Law of Large Numbers (10%)
2. (20%) Suppose that X and Y are two random variables and x_i and y_i are their realized outcomes respectively, $i=1\sim 20$. The following information is given and you are asked to:

$$\sum_{i=1}^{20} x_i = 2,980; \sum_{i=1}^{20} y_i = 2,620; \sum_{i=1}^{20} x_i^2 = 451,350; \sum_{i=1}^{20} y_i^2 = 351,350; \sum_{i=1}^{20} x_i y_i = 390,825$$

- (1) calculate the correlation coefficient (10%);
 - (2) test the null hypothesis that X and Y are uncorrelated at the 0.05 level ($t_{20,0.975} = 2.086; t_{18,0.975} = 2.101; t_{20,0.95} = 1.725; t_{18,0.95} = 1.734$) (10%)
3. (10%) Suppose the distribution function of a random variable X is as follows:

$$F(x) = \begin{cases} 0, & x \leq 0 \\ x/8, & 0 < x < 2 \\ x^2/16, & 2 \leq x < 4 \\ 1, & x \geq 4 \end{cases}$$

What is the variance of X?

4. (20%) Ten voluntary patients participate in a drug experiment which lasts two days. Each of these patients takes Drugs A and B on days 1 and 2 respectively. Suppose you are interested in comparing the concentrations of Drugs A and B in urine specimens taken from the same patient, six hours after he or she has taken the drug. The concentration results (mg%) are presented in the table below.
- (1) Please test the hypothesis that in urine specimens the concentrations of the two drugs are equal at the 0.05 level (10%);
 - (2) What are the assumptions behind the above test? (10%)
($t_{10,0.975} = 2.228; t_{9,0.975} = 2.262; t_{10,0.95} = 1.812; t_{9,0.95} = 1.833$)

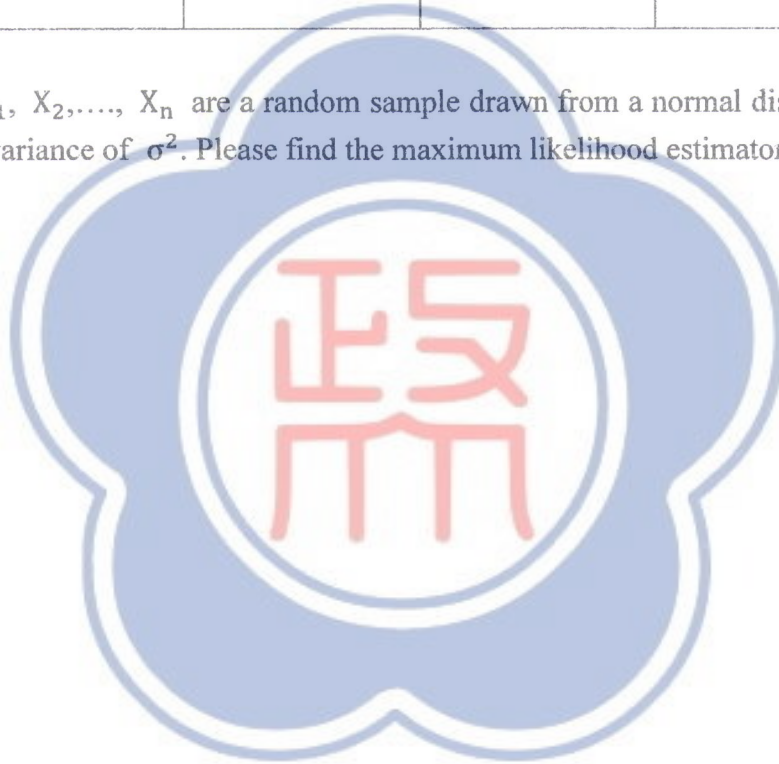
Patient	1	2	3	4	5	6	7	8	9	10
Drug A	15	26	13	28	17	20	7	36	12	18
Drug B	13	20	10	21	17	22	5	30	7	11

考 試 科 目	統計學	所 別	風險管理與保險學系 管理組 4182	考 試 時 間	2 月 22 日(星期六) 第三節
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5. (10%) Suppose that there are 100 students in a class. Each student has to take four courses. At the end of the semester, each course is given a mark of 'pass' or 'fail'. Based on the distribution given below, please determine whether it is a binomial distribution at the 0.05 level. ($\chi^2(0.975, 5) = 12.83$; $\chi^2(0.95, 5) = 11.07$; $\chi^2(0.975, 4) = 11.14$; $\chi^2(0.95, 4) = 9.49$; $\chi^2(0.975, 3) = 9.35$; $\chi^2(0.95, 3) = 7.81$)

Number of student	6	27	49	17	1
Number of courses with a mark of 'pass'	4	3	2	1	0

6. (10%) Suppose that X_1, X_2, \dots, X_n are a random sample drawn from a normal distribution. This distribution has a mean of μ and variance of σ^2 . Please find the maximum likelihood estimator of σ^2 .



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考試科目	微積分	所別	政大研究所 / 精算科學組 4183	考試時間	2月22日(六) 第 1 節
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1. (20%) Assume $0 < a < b$.

(a) Find c for which

$$\int_a^b x^n dx = c^n(b-a)$$

(b) Show that c lies between a and b .

2. (20%) Find all tangent lines to the graph of $y = x^3$ that pass through the point $(2, 4)$.

3. (30%)

(a) Find the absolute maximum value of

$$f(x) = \frac{x+1}{x^2+x+9}$$

on the interval $[0, \infty)$.

(b) Evaluate

$$\lim_{n \rightarrow \infty} n \left(\frac{1}{(2n+1)^2} + \frac{1}{(2n+3)^2} + \cdots + \frac{1}{(4n-1)^2} \right)$$

(c) Let f be a continuous function. Find $f(4)$ if

$$\int_0^{x^2} f(t) dt = x \sin(\pi x)$$

for all x .

4. (30%)

(a) Find the absolute maximum and the absolute minimum of $f(x, y, z) = x^3 + yz$ on the unit sphere $x^2 + y^2 + z^2 = 1$.

(b) Evaluate

$$\int_0^1 \int_{\sqrt{y}}^1 \sin(\pi x^3) dx dy$$

(c) Evaluate

$$\int_0^2 \int_0^{\sqrt{2y-y^2}} \frac{xy}{x^2+y^2} dx dy$$

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註 試題隨卷繳交

考試科目	統計學	所別	(同音系) 精算組 4183	考試時間	2月22日(六) 第 3 節
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1. Please explain the following items. (40%)

(a) Sufficiency, Completeness and Stochastic Independence (10%)

(b) Limiting distribution and Limiting Moment-generating function (10%)

(c) Posterior distribution and Bayes' solution (10%)

(d) Rao-Cramer Inequality and efficient estimator (10%)

2. The Pareto distribution is frequently used as a model in study of claim losses and has the distribution function

$$F(x; \theta_1, \theta_2) = 1 - (\theta_1 / x)^{\theta_2}, \theta_1 \leq x, \text{ zero elsewhere, where } \theta_1 > 0 \text{ and } \theta_2 > 0.$$

If X_1, X_2, \dots, X_{50} is a random sample from this distribution, find the maximum likelihood estimators of θ_1 and θ_2 . (15%)

3. Let $f(x, y) = e^{-x-y}, 0 < x < \infty, 0 < y < \infty$, zero elsewhere, be the p.d.f. of X and Y. If $Z = X + Y$, (1) compute $\Pr(Z \leq z)$, for $0 < z < \infty$. (2) What is the p.d.f. of Z? (10%)

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註 試題隨卷繳交

考試科目	統計學	所別	(國音) 精算學 4/83	考試時間	2月22日(六) 第 3 節
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4. Let $u(X)$ be a nonnegative function of the random variable X . If

$E[u(X)]$ exists, then, for every positive constant c , prove

$$\Pr[u(X) \geq c] \leq \frac{E[u(X)]}{c}. \quad (10\%)$$

5. Let Y_2 and Y_5 denote the second and the 5-th order statistics of a random sample of size 6 from a distribution of the continuous type having distribution $F(x)$. Compute $\Pr[F(Y_5) - F(Y_2) \geq 0.5]$. (10%)

6. Let X_1, X_2, \dots, X_n be a random sample from the normal distribution $N(\theta, 1)$. (1) Show the likelihood ratio principle for testing $H_0: \theta = \theta'$ where θ' is specified against $H_1: \theta \neq \theta'$. (2) Is this a uniformly most powerful test of H_0 against H_1 ? (15%)

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註 試題隨卷繳交