科目：統計學
考試時間：80 分鐘

系所：
金融管理學系

是否使用計算機：是

本科原始成績：100 分

I. MULTIPLE CHOICE (80%)

Probability

Two different designs on a new line of winter jackets for the coming winter are available for your manufacturing plants. Your profit (in thousands of dollars) will depend on the taste of the consumers when winter arrives. The probability of the three possible different tastes of the consumers and the corresponding profits are presented in the following table.

Table 1

Probability	Taste	Design A	Design B
0.2	more conservative	180	520
0.5	no change	230	310
0.3	more liberal	350	270

(1) Referring to Table 1, what is your expected profit when Design A is chosen?

(A) 256 thousands   (B) 253.33 thousands   (C) 366.67 thousands   (D) 340 thousands

(2) Referring to Table 1, what is the variance of your profit when Design A is chosen?

(A) 4,144 millions   (B) 8,400 millions   (C) 4,000 millions   (D) 9,082 million

(3) Referring to Table 1, if your investment preference is to maximize your expected profit and not worry at all about the risk that you have to take, will you choose a production mix that will consist of 10%, 30%, 50%, 70%, or 90% of your production lines for Design A and the remaining for Design B?

(A) 10%   (B) 30%   (C) 70%   (D) 90%

(4) Referring to Table 1, if your investment preference is to minimize the amount of risk that you have to take and do not care at all about the expected profit, will you choose a production mix that will consist of 10%, 30%, 50%, 70%, or 90% of your production lines for Design A and the remaining for Design B?

(A) 10%   (B) 30%   (C) 70%   (D) 90%

Hypothesis Testing

A drug company is considering marketing a new local anesthetic. The effective time of the anesthetic the drug company is currently producing has a normal distribution with an average of 7.4 minutes with a standard deviation of 1.2 minutes. The chemistry of the new anesthetic is such that the effective time should be normal with the same standard deviation,

國立高雄大學九十八學年度轉學招生考試試題(轉 3 年級)

科目：統計學
考試時間：80 分鐘

系所：
金融管理學系
本科原始成績：100 分

是否使用計算機：是

but the mean effective time may be lower. If it is lower, the drug company will market the new anesthetic; otherwise, they will continue to produce the older one. Therefore, the drug company intend to test whether the mean effective time is lower. A sample of size 36 results in a sample mean of 7.1. A hypothesis test will be done to help make the decision. (Note: The standardized normal distribution probabilities can be obtained on the last page.)

(5) What is the power of the test if the average effective time of the anesthetic is 7.0 using a 0.05 level of significance?

(A) 0.3612   (B) 0.7486   (C) 0.2514   (D) 0.6388

(6) What is the probability of making a Type II error if the average effective time of the anesthetic is 7.5 using a 0.05 level of significance?

(A) 0.0160   (B) 0.2611   (C) 0.7389   (D) 0.9840

ANOVA

The marketing manager of a company producing a new cereal aimed for children wants to examine the effect of the color and shape of the box's logo on the approval rating of the cereal. He combined 4 colors and 3 shapes to produce a total of 12 designs. Each logo was presented to 2 different groups (a total of 24 groups) and the approval rating for each was recorded and is shown below. The manager analyzed these data using the α = 0.05 level of significance for all inferences.

SHAPES	COLORS			
	Red	Green	Blue	Yellow
Circle	54	67	36	45
	44	61	44	41
Square	34	56	36	21
	36	58	30	25
Diamond	46	60	34	31
	48	60	38	33

科目：統計學
考試時間：80 分鐘

系所：
金融管理學系
本科原始成績：100 分

是否使用計算機：是

Using the numbers above, we can obtain the following ANOVA table.

Source	df	SS	MS	F
Colors		2711.17		
Shapes				
Interaction		150.33		
Error	12			
Total		3590.50		

(7) True or False: Based on the results of the hypothesis test, it appears that there is a significant effect associated with the shape of the logo.

(8) True or False: Based on the results of the hypothesis test, it appears that there is a significant interaction.

$F_{2,12,0.05} = 3.89$ $F_{3,12,0.05} = 3.49$ $F_{6,12,0.05} = 3.00$ $F_{2,3,0.05} = 9.55$ $F_{3,6,0.05} = 4.76$

$F_{12,2,0.05} = 19.41$ $F_{12,3,0.05} = 8.74$ $F_{12,6,0.05} = 4.00$ $F_{3,2,0.05} = 19.16$ $F_{6,3,0.05} = 8.94$

II. CALCULATION (20%)

1. When we use X to be the dependent variable and Y to be the independent variable, we already know that X=3+0.5Y, r =0.8, $\overline{X}$ =8. Now, we change the positions of X and Y, i.e. we take the Y to be the dependent variable and X to be the independent variable. Please use the information provided in this question to compute the values of $\hat{\beta}_1$ and $\hat{\beta}_2$ when Y= $\hat{\beta}_1 + \hat{\beta}_2$ X.

2. There are two random variables, X and Y. The joint p.d.f is f(X,Y)=X+Y,   0<X<1, 0<Y<1. Please find the value of $\rho(X,Y)$。

國立高雄大學九十八學年度轉學招生考試試題(轉 3 年級)

科目：統計學
考試時間：80 分鐘

系所：
金融管理學系
本科原始成績：100 分

是否使用計算機：是

The values in the table below are cumulative probabilities for the standard normal distribution Z (that is, the normal distribution with mean 0 and standard deviation 1). These probabilities are values of the following integral:

$$P(Z \le z) = \int_{-\infty}^{z} \frac{1}{\sqrt{2\pi}} e^{-x^2/2} dx$$

Geometrically, the values represent the area to the left of z under the density curve of the standard normal distribution:
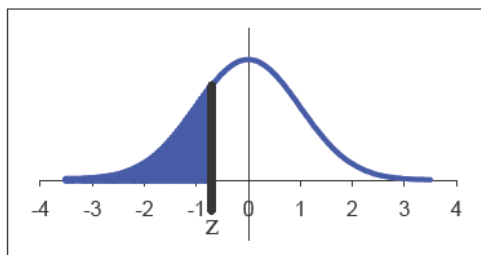
z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
-3.4	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002
-3.3	0.0005	0.0005	0.0005	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0003
-3.2	0.0007	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0005	0.0005	0.0005
-3.1	0.0010	0.0009	0.0009	0.0009	0.0008	0.0008	0.0008	0.0008	0.0007	0.0007
-3.0	0.0013	0.0013	0.0013	0.0012	0.0012	0.0011	0.0011	0.0011	0.0010	0.0010
-2.9	0.0019	0.0018	0.0018	0.0017	0.0016	0.0016	0.0015	0.0015	0.0014	0.0014
-2.8	0.0026	0.0025	0.0024	0.0023	0.0023	0.0022	0.0021	0.0021	0.0020	0.0019
-2.7	0.0035	0.0034	0.0033	0.0032	0.0031	0.0030	0.0029	0.0028	0.0027	0.0026
-2.6	0.0047	0.0045	0.0044	0.0043	0.0041	0.0040	0.0039	0.0038	0.0037	0.0036
-2.5	0.0062	0.0060	0.0059	0.0057	0.0055	0.0054	0.0052	0.0051	0.0049	0.0048
-2.4	0.0082	0.0080	0.0078	0.0075	0.0073	0.0071	0.0069	0.0068	0.0066	0.0064
-2.3	0.0107	0.0104	0.0102	0.0099	0.0096	0.0094	0.0091	0.0089	0.0087	0.0084
-2.2	0.0139	0.0136	0.0132	0.0129	0.0125	0.0122	0.0119	0.0116	0.0113	0.0110
-2.1	0.0179	0.0174	0.0170	0.0166	0.0162	0.0158	0.0154	0.0150	0.0146	0.0143
-2.0	0.0228	0.0222	0.0217	0.0212	0.0207	0.0202	0.0197	0.0192	0.0188	0.0183
-1.9	0.0287	0.0281	0.0274	0.0268	0.0262	0.0256	0.0250	0.0244	0.0239	0.0233
-1.8	0.0359	0.0351	0.0344	0.0336	0.0329	0.0322	0.0314	0.0307	0.0301	0.0294
-1.7	0.0446	0.0436	0.0427	0.0418	0.0409	0.0401	0.0392	0.0384	0.0375	0.0367
-1.6	0.0548	0.0537	0.0526	0.0516	0.0505	0.0495	0.0485	0.0475	0.0465	0.0455
-1.5	0.0668	0.0655	0.0643	0.0630	0.0618	0.0606	0.0594	0.0582	0.0571	0.0559
-1.4	0.0808	0.0793	0.0778	0.0764	0.0749	0.0735	0.0721	0.0708	0.0694	0.0681
-1.3	0.0968	0.0951	0.0934	0.0918	0.0901	0.0885	0.0869	0.0853	0.0838	0.0823
-1.2	0.1151	0.1131	0.1112	0.1093	0.1075	0.1056	0.1038	0.1020	0.1003	0.0985
-1.1	0.1357	0.1335	0.1314	0.1292	0.1271	0.1251	0.1230	0.1210	0.1190	0.1170
-1.0	0.1587	0.1562	0.1539	0.1515	0.1492	0.1469	0.1446	0.1423	0.1401	0.1379
-0.9	0.1841	0.1814	0.1788	0.1762	0.1736	0.1711	0.1685	0.1660	0.1635	0.1611
-0.8	0.2119	0.2090	0.2061	0.2033	0.2005	0.1977	0.1949	0.1922	0.1894	0.1867
-0.7	0.2420	0.2389	0.2358	0.2327	0.2296	0.2266	0.2236	0.2206	0.2177	0.2148
-0.6	0.2743	0.2709	0.2676	0.2643	0.2611	0.2578	0.2546	0.2514	0.2483	0.2451
-0.5	0.3085	0.3050	0.3015	0.2981	0.2946	0.2912	0.2877	0.2843	0.2810	0.2776
-0.4	0.3446	0.3409	0.3372	0.3336	0.3300	0.3264	0.3228	0.3192	0.3156	0.3121
-0.3	0.3821	0.3783	0.3745	0.3707	0.3669	0.3632	0.3594	0.3557	0.3520	0.3483
-0.2	0.4207	0.4168	0.4129	0.4090	0.4052	0.4013	0.3974	0.3936	0.3897	0.3859
-0.1	0.4602	0.4562	0.4522	0.4483	0.4443	0.4404	0.4364	0.4325	0.4286	0.4247
-0.0	0.5000	0.4960	0.4920	0.4880	0.4840	0.4801	0.4761	0.4721	0.4681	0.4641

科目：財務管理
考試時間：80 分鐘

系所：
　金融管理學系

是否使用計算機：是

本科原始成績：100 分

I. Multiple Choice Questions (4 points each, total 80 points)

Note: Use the following format to write your answers of this section in your answer sheet. No points will earn without the following format in this section.

1	2	3	4	5	6	7	8	9	10

11	12	13	14	15	16	17	18	19	20

1. When firms issue more debt, the tax shield on debt _____, the agency costs on debt (i.e., costs of financial distress) _____, and the agency costs on equity _____.
   a. increases; increases; increases
   b. decreases; decreases; decreases
   c. increases; decreases; decreases
   d. decreases; decreases; increases
   e. None of the above.

2. Firm V was worth $500 and Firm A had a market value of $375. Firm V acquired Firm A for $425 because they thought the combination of the new Firm VA was worth $925. What is the synergy from the merger of Firm V and Firm A?
   a. $50
   b. $100
   c. $475
   d. $0
   e. None of the above.

3. MM Proposition I without taxes is used to illustrate:
   a. the value of an unlevered firm equals that of a levered firm.
   b. that one capital structure is as good as another.
   c. leverage does not affect the value of the firm.
   d. All of the above.
   e. none of the above.

4. MM Proposition I with taxes supports the theory that:
   a. there is a positive linear relationship between the amount of debt in a levered firm and its value.
   b. the value of a firm is inversely related to the amount of leverage used by the firm.
   c. the value of an unlevered firm is equal to the value of a levered firm plus the value of the interest

科目：財務管理
考試時間：80 分鐘

系所：
金融管理學系

本科原始成績：100 分

是否使用計算機：是

tax shield.

    d. a firm's cost of capital is the same regardless of the mix of debt and equity used by the firm.

    e.   None of the above.

5. The U.S. Securities and Exchange Commission periodically charges individuals for insider trading and claims those individuals have made unfair profits. Based on this fact, you would tend to argue that the financial markets are at best _____ form efficient.

    a.   weak

    b.   semiweak

    c.   semistrong

    d.   strong

    e.   None of the above.

6. Which of the following is true?

    a.   Most empirical evidence is consistent with strong form efficiency.

    b.   Most empirical evidence is inconsistent with weak form efficiency.

    c.   Strong form market efficiency is not supported by the empirical evidence.

    d.   all of the above.

    e.   None of the above.

7. Which statement is true regarding the Capital Market Line (CML)?

    a.   The CML is the line from the risk-free rate through the market portfolio.

    b.   The CML is the best attainable capital allocation line.

    c.   The CML always has a positive slope.

    d.   All of the above statements are true.

    e.   None of the above statements are true.

8. Which of the following are used by fundamental analysts to determine proper stock prices?

    I)   trendlines

    II)   earnings

    III)   dividend prospects

    IV)   expectations of future interest rates

    V)   resistance levels

科目：財務管理
考試時間：80 分鐘

系所：
　金融管理學系
本科原始成績：100 分

是否使用計算機：是

A) I and II

B) I, II, and III

C) II, III, and IV

D) II, IV, and V

E) All of the items are used by fundamental analysts.

9. A Treasury bond due in one year has a yield of 6.2%; a Treasury bond due in 5 years has a yield of 6.7%. A bond issued by General Motors due in 5 years has a yield of 7.9%; a bond issued by Exxon due in one year has a yield of 7.2%. The default risk premiums on the bonds issued by Exxon and General Motors, respectively, are

a. 1.2% and 1.2%

b. 0.5% and 0.7%

c. 1.2% and 1.0%

d. 0.7% and 0.5%

e. none of the above

10. The IRR decision rule can be reversed because:

a. instead of an investment project it is a financing project.

b. the NPV rule is not the same as the IRR.

c. the IRR is based on a mutually exclusive investment.

d. both a and b.

e. none of the above.

11. Two bonds are selling at par value and each has 17 years to maturity. The first bond has a coupon rate of 6% and the second bond has a coupon rate of 13%. Which of the following is true about the durations of these bonds?

a. The duration of the higher-coupon bond will be higher.

b. The duration of the lower-coupon bond will be higher.

c. The duration of the higher-coupon bond will equal the duration of the lower-coupon bond.

d. There is no consistent statement that can be made about the durations of the bonds.

e. none of the above.

12. If the interest rate on debt is lower than ROA, then a firm will _____ by increasing the use of debt in the capital structure.

a. increase the ROE

國立高雄大學九十八學年度轉學招生考試試題(轉 3 年級)

科目：財務管理
考試時間：80 分鐘

系所：
金融管理學系

本科原始成績：100 分

是否使用計算機：是

    b.   not change the ROE

    c.   decrease the ROE

    d.   change the ROE in an indeterminable manner

    e.   none of the above

13. Your opinion is that security A has an expected rate of return of 0.15. It has a beta of 1.5. The risk-free rate is 0.04 and the market expected rate of return is 0.11. According to the Capital Asset Pricing Model, this security is

    a.   underpriced.

    b.   overpriced.

    c.   fairly priced.

    d.   cannot be determined from data provided.

    e.   none of the above.

14. Which of the following help convince managers to work in the best interest of the stockholders?

    a.   compensation based on the value of the stock

    b.   stock option plans

    c.   threat of a proxy fight

    d.   all of the above

    e.   none of the above

15. Which one of the following statements is correct concerning the payback period?

    a.   An investment is acceptable if its calculated payback period is less than some pre-specified period of time.

    b.   An investment should be accepted if the payback is positive and rejected if it is negative.

    c.   An investment should be rejected if the payback is positive and accepted if it is negative.

    d.   An investment is acceptable if its calculated payback period is greater than some pre-specified period of time.

    e.   none of the above.

16. An investment is acceptable if its IRR:

    a.   is exactly equal to its net present value (NPV).

    b.   is exactly equal to zero.

    c.   is less than the required return.

    d.   is exactly equal to 100%.

國立高雄大學九十八學年度轉學招生考試試題(轉 3 年級)

科目：財務管理
考試時間：80 分鐘

系所：
金融管理學系

本科原始成績：100 分

是否使用計算機：是

e.　none of the above.

17. The present value of an investment's future cash flows divided by the initial cost of the investment is called the:

a.　net present value.

b.　internal rate of return.

c.　average accounting return.

d.　profitability index.

e.　payback period.

18. If a project has a net present value equal to zero, then:

I.　the present value of the cash inflows exceeds the initial cost of the project.

II.　the project produces a rate of return that just equals the rate required to accept the project.

III.　the project is expected to produce only the minimally required cash inflows.

IV.　any delay in receiving the projected cash inflows will cause the project to have a negative net present value.

a.　II and III only

b.　II and IV only

c.　I, II, and IV only

d.　II, III, and IV only

e.　I and II only

19. Which one of the following is an example of systematic risk?

a.　the price of lumber declines sharply

b.　airline pilots go on strike

c.　the Federal Reserve increases interest rates

d.　a hurricane hits a tourist destination

e.　none of the above

20. Diversification can effectively reduce risk. Once a portfolio is diversified, the type of risk remaining is:

a.　individual security risk.

b.　riskless security risk.

c.　risk related to the market portfolio.

d.　total standard deviations.

e.　all of the above.

科目：財務管理
考試時間：80 分鐘

系所：
金融管理學系

本科原始成績：100 分

是否使用計算機：是

II. Problem Solving and Essay Questions (total 20 points)

1. You are considering acquiring a common stock that you would like to hold for one year.   You expect to receive both $2.50 in dividends and $28 from the sale of the stock at the end of the year.   The maximum price you would pay for the stock today is _____ if you wanted to earn a 15% return. (5 points)

2. Mortgage Instruments Inc. is expected to pay dividends of $1.05 next year. The company just paid dividends of $1. This growth rate is expected to continue. How much should be paid for Mortgage Instruments stock just after the dividend if the appropriate discount rate is 8%.   (5 points)

3. The NUK Corp. projects to pay a dividend of $.75 next year and then have it grow at 12% for the following 3 years before growing at 8% indefinitely thereafter. The equity has a required return of 10% in the market. The price of the stock should be ____.   (5 points)

4. The bonds issued by NUK Corp. bear a 5% coupon, payable semiannually. The bond matures in 8 years and has a $1,000 face value. Currently, the bond sells at par. What is the yield to maturity? (5 points)