

SOA真题May2002Course6 PDF转换可能丢失图片或格式，建议阅读原文

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SESSIONSECTION A WRITTEN ANSWERCOURSE 6: MAY 2002 GO ON TO NEXT PAGE

MORNING SESSION\*\*BEGINNING OF COURSE 6\*\*MORNING

SESSION1. (5 points) You are given the following

information:StockPrice at Beginningof PeriodPrice at End

ofPeriodNumber of SharesOutstandingI 10 15 100II 9 10 125III 15

15 200(a) Describe and compare:(i) Price-weighted index(ii)

Market-value-weighted index(iii) Equally-weighted index(b)

Calculate the percentage change over the period for:(i)

Price-weighted index(ii) Market-value-weighted index(iii)

Equally-weighted index(c) Calculate the end of period price for

Stock III that results in an equivalentpercentage increase in the

price-weighted index and the market-value-weightedindex.Show all

work.COURSE 6: MAY 2002 GO ON TO NEXT

PAGEMORNING SESSION2. (6 points) An investor has the

following securities available for investment:Expected Annual Return

Standard Deviation of Annual ReturnStock I 9% 13%Stock II 12%

20%T-bills 5% 0%The covariance between the two risky assets is

0.93%.Construct the optimal portfolio using the three available

assets, assuming:(i) an investor ' s degree of risk aversion is 4(ii) an

investor ' s degree of risk aversion is 2Show all work.3. (10 points)

You are given the following information:#61472.all options have

nine months to expiry. All options have a strike price of 49. Current stock price is 50. Volatility is 30%. Risk-free rate is 5% per annum. Using the binomial option pricing model and a three-month step, calculate the cost of (i) a European put. (ii) an American put. (iii) a European call. Show all work.

COURSE 6: MAY 2002 GO ON TO NEXT PAGE MORNING SESSION 4. (5 points) (a) Describe the obligations of the trustee of a pension fund. (b) Describe the key considerations in selecting an appropriate pension funding method.

COURSE 6: MAY 2002 GO ON TO NEXT PAGE MORNING SESSION 5. (6 points) You are given the following financial data for Company ABC:

Capital Component	Value	Risk Factor	Rate
Capital and Surplus	800,000		
Total Company Assets			
Bond Book Value			
AAA	2,000,000	0.3%	
BB	5,000,000	4%	
B	3,000,000	12%	
Other required capital components:			
Risk Base Required Capital Factor			
C2	150,000,000	0.1%	
C3	4,000,000	1%	
C4	500,000	2%	
Required capital components for whole life block:			
Risk Base Required Capital Factor			
C1	8,000,000	6%	
C2	100,000,000	0.1%	
C3	3,000,000	1%	
C4	400,000	2%	

ceding allowance for a reinsurance treaty is 3% of assets transferred. C1 required capital factor for assets ceded to reinsurer is 0.5%. Required capital formula:  $C_4 + C_2 + C_1 + C_3 + 2$

Required capital (a) Describe the weaknesses of using the required capital formula when comparing two companies that have healthy Risk Based Capital ratios. (b) Evaluate the impact on required capital if you entered into

a 50% coinsurance agreement for the whole life business. (c) Evaluate the impact on required capital of upgrading all assets to a minimum rating of BB. (d) Recommend which capital management action the company should use. Show all work. COURSE 6: MAY 2002 GO ON TO NEXT PAGE MORNING SESSION 100 Test 下载频道开通，各类考试题目直接下载。详细请访问 [www.100test.com](http://www.100test.com)