
SOCIETY OF ACTUARIES
Strategic Decision Making Exam

Exam CFESDM

AFTERNOON SESSION

Date: Thursday, May 5, 2016

Time: 1:30 p.m. – 3:45 p.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This afternoon session consists of 3 questions numbered 7 through 9 for a total of 40 points. The points for each question are indicated at the beginning of the question. Questions 8 and 9 pertain to the Case Study, which is enclosed inside the front cover of this exam booklet.
2. Failure to stop writing after time is called will result in the disqualification of your answers or further disciplinary action.
3. While every attempt is made to avoid defective questions, sometimes they do occur. If you believe a question is defective, the supervisor or proctor cannot give you any guidance beyond the instructions on the exam booklet.

Written-Answer Instructions

1. Write your candidate number at the top of each sheet. Your name must not appear.
2. Write on only one side of a sheet. Start each question on a fresh sheet. On each sheet, write the number of the question that you are answering. Do not answer more than one question on a single sheet.
3. The answer should be confined to the question as set.
4. When you are asked to calculate, show all your work including any applicable formulas.
5. When you finish, insert all your written-answer sheets into the Essay Answer Envelope. Be sure to hand in all your answer sheets because they cannot be accepted later. Seal the envelope and write your candidate number in the space provided on the outside of the envelope. Check the appropriate box to indicate morning or afternoon session for Exam CFESDM.
6. Be sure your written-answer envelope is signed because if it is not, your examination will not be graded.

Tournez le cahier d'examen pour la version française.

CASE STUDY INSTRUCTIONS

The case study will be used as a basis for some examination questions. Be sure to answer the question asked by referring to the case study. For example, when asked for advantages of a particular plan design to a company referenced in the case study, your response should be limited to that company. Other advantages should not be listed, as they are extraneous to the question and will result in no additional credit. Further, if they conflict with the applicable advantages, no credit will be given.

****BEGINNING OF EXAMINATION****

Afternoon Session
Beginning with Question 7

7. (10 points) ABC is a small airline under scrutiny due to a recent airline safety report that ranked it in the bottom quartile of all regional carriers. ABC executives are concerned that a significant loss caused by a plane crash could devastate the company.

(a) (3 points)

- (i) Describe three negative outcomes that ABC would face in the event of a plane crash.
- (ii) Explain whether the negative outcomes identified in part (i) can be managed using risk capital.

Similar to the airlines in the top quartile of the safety report, ABC builds a Safety Solution which measures and sets aside risk capital using VaR. ABC will publicize this new Safety Solution to appease analysts who are critical of its past safety record.

(b) (3 points) Critique whether this approach is an appropriate response to public perception of ABC as a result of the recent safety report.

An analyst report describes ABC as “another British Petroleum waiting to happen”.

(c) (1 point) Describe the similarities between British Petroleum and ABC.

(d) (3 points) Recommend three improvements that ABC could implement that would improve the safety of the company and its customers. Justify your answer.

***Question 8 pertains to the Case Study.
Each question should be answered independently.***

8. (17 points) According to the Kelley School of Business, the following are dimensions of new product development:

- I. Strategy
- II. Research
- III. Commercialization
- IV. Process
- V. Project Climate
- VI. Company Culture
- VII. Metrics and Performance Measurement (M&PM)

(a) (3 points) Define each of the dimensions I to VII above.

Information on Blue Ocean can be found in Section 5 of the Case Study.

(b) (2 points) Identify two best practices, as described by the Kelley School of Business, related to new product development exhibited by Blue Ocean. Justify your answer by citing examples in the Case Study.

8. Continued

Edward Blue, Blue Ocean’s CEO, has sent an e-mail to Ruth Green, Blue Ocean’s Chief Actuary, in regards to developing new insurance products targeted towards companies that engage in online Peer-to-Peer (P2P) commerce. He has outlined a new product development plan for Ruth to execute.

	Dimension						
Phase	Strategy	Research	Commer- cialization	Process	Project Climate	Company Culture	M&PM
1							
2							
3							
4							
5							

(c) (5 points)

- (i) Identify which new product dimension(s) are related to each “Phase” of Edward’s development plan by adding a check mark to the appropriate box in the table above if the new production dimension is relevant to the phase.
- (ii) Describe how each dimension identified in part (i) will help achieve the goal of the particular phase in the development plan.

Question 8 continued on next page.

8. Continued

Ruth Green has begun Phase 1 of product development and wants to analyze the change in insurance risk landscape between traditional and P2P accommodation services (i.e. AirBnB).

Traditional Hotel Property Owners	AirBnB Property Owners		
Types of Insurance Risks Faced by Traditional Hotel Property Owners	Does this risk exist if you list your property on AirBnB? (Yes / No)	If the risk exists, does the frequency of risk differ from traditional hotels? (Increase / Decrease / No Change)	If the risk exists, does the severity of risk differ from traditional hotels? (Increase / Decrease / No Change)
1. Property damage (intentional and unintentional)	(A)	(B)	(C)
2. Natural catastrophe (e.g. earthquakes, floods, and tornados)	(D)	(E)	(F)
3. Death, disability, and injury (on rental property location)			
4. Business interruption (e.g. utilities outage, lost revenues, extra expenses, and operational risks)	(G)	(H)	(I)
5. Management liability (e.g. directors & officers risks, scandals, reputational and legal risks)	(J)	(K)	(L)
6. Cyber liability (e.g. IT security breach, cyberattacks, malicious hacking and viruses, and private data theft)			

8. Continued

- (d) (5 points) From the table above,
- (i) Identify the expected outcomes for (A) to (L).
 - (ii) Justify each of your answers in part (i).

During Phase 2 of product development, Ruth's team projected the following after-tax profit and standalone economic capital figures:

	After-Tax Profit	Standalone Economic Capital
Current Blue Ocean Business	175M	2,000M
Peer-to-Peer Insurance Business	50M	900M

- (e) (2 points) Determine the capital reduction from diversification required for Blue Ocean management to introduce new P2P insurance products if management solely based its investment decision making on RAROC. Show your calculation.

*Question 9 pertains to the Case Study.
Each question should be answered independently.*

9. (13 points) Deferred Acquisition Costs (DAC) are defined as costs that are capitalized as an asset and amortized based on revenue over the life of the insurance policy.

(a) (2 point)

- (i) Explain in what ways DAC is consistent with the principles of accrual accounting.
- (ii) Describe how utilizing DAC will affect a company's book value for the year of capitalization and following years assuming sales are constant.

Information on Blue Jay Air can be found in Section 2 of the Case Study.

Accounting ratios for Blue Jay Air are provided below:

	2014
Operating Profit Margin	8%
Return on Assets	10%
Debt Ratio	118%

Blue Jay Air is considering purchasing a new \$200 million aircraft fully financed by a capital injection from RPPC Dynasty. The aircraft will have an estimated useful life of 15 years with a salvage value of \$50 million. It is expected to increase revenue by \$60 million per year with additional non-depreciation expenses of \$40 million per year. Blue Jay Air uses the straight-line depreciation method.

- (b) (1 point) Assess whether Blue Jay Air should purchase the new aircraft or not, based only on the purchase's effects on the above accounting ratios. Justify your answer.
- (c) (1 point) Assess whether the straight-line depreciation method is appropriate for the new aircraft. Justify your answer.

9. Continued

Blue Jay Air is considering moving forward with its plans of acquiring either Xolar or Skylite Aircraft. Below is an excerpt of their profitability forecasts for the next 3 years.

Xolar Aircraft	Current	Future	Future +1	Future +2
	(\$M)	(\$M)	(\$M)	(\$M)
Operating Revenues	600	1,100	1,200	1,250
Operating Expenses	-1,050	-1,000	-950	-950
Net Operating Income	-450	100	250	300
Non-Operating Expenses	-90	-100	-120	-150
Pre-tax income	-540	0	130	150

Skylite Aircraft	Current	Future	Future +1	Future +2
	(\$M)	(\$M)	(\$M)	(\$M)
Operating Revenues	1,400	1,700	1,950	2,300
Operating Expenses	-1,400	-1,500	-1,650	-1,850
Net Operating Income	0	200	300	450
Non-Operating Expenses	-200	-180	-250	-300
Pre-tax income	-200	20	50	150

Question 9 continued on next page.

9. Continued

- (d) (4 points)
- (i) Describe two considerations for an acquisition of each of Xolar and Skylite based on the accounting information above assuming the purchase prices are equal.
 - (ii) Describe two non-financial considerations for an acquisition for each of Xolar and Skylite.
- (e) (1 point) Describe the shortcomings of using book value as the primary value metric of a company following an acquisition.

Three years have passed since Blue Jay Air acquired Skylite Aircraft.

- (f) (2 points) Rank the following performance measures based on their effectiveness in assessing the success of the acquisition:
- Operating profit margin
 - Credit rating
 - Total long term debt
 - Market share

Justify your ranking.

Blue Jay Air is redesigning its compensation structure to better align with Blue Jay Air's goals. Blue Jay Air's management has proposed the following performance measures:

Executive	Performance measure
VP Finance	<ul style="list-style-type: none">• Credit rating• Total operating expenses
VP Operations	<ul style="list-style-type: none">• Total revenues• JACDEC Safety Index
VP Marketing	<ul style="list-style-type: none">• Number of loyalty program participants• Average flight seat occupancy

- (g) (2 points) Critique whether the proposed performance measures are appropriate for each executive.

****END OF EXAMINATION****
Afternoon Session

USE THIS PAGE FOR YOUR SCRATCH WORK

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