

---

**SOCIETY OF ACTUARIES**  
**Strategic Decision Making Exam (Part B)**

**Exam CFESDMB**

**Date:** Thursday, October 31, 2013

**Time:** 8:30 a.m. – 11:45 a.m.

---

**INSTRUCTIONS TO CANDIDATES**

**General Instructions**

1. This examination has a total of 60 points.  
  
This exam consists of 7 questions, numbered 1 through 7.  
  
The points for each question are indicated at the beginning of the question. Questions 2-7 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 since 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 Exam CFESDMB.
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\*\***

**1.** (5 points)

- (a) (1 point) Describe availability bias.

At a department meeting, you discuss the potential heuristics made by Ma Mingzhe & his executive team in Ping An's acquisition of Fortis during the 2008 financial crisis as outlined in *Ping An's Overseas Expansion: Financial Uncertainties and Risk Management*.

- (b) (2 points) Explain how Ping An's management team exhibits availability bias in its acquisition decision.

A bank has recently hired you as its Global Strategic Vice President. The bank's executive management is now actively pursuing mergers and acquisitions for the first time in order to strengthen the international presence of the bank.

In contrast, mid-level management opposes the merger and acquisition strategy. At the operational level, most bank employees believe the bank is doing very well and the culture reflects they are circumspect about new ventures.

- (c) (2 points) Compare what happened to BP in the article, "British Petroleum (PLC) and John Browne: A Culture of Risk Beyond Petroleum," to what is happening at the bank.

**Questions 2 - 7 pertain to the Case Study.**  
**Each question should be answered independently.**

**2.** (5 points)

- (a) (2 points) Compare and contrast the sensing style and intuition style of gathering and evaluating information.

Information on Blue Jay Tire Co. (BJT) is found in Section 3 of the Case Study.

Immediately following the release of the August 2<sup>nd</sup>, 2013 news article, BJT's Chief Communication Officer issued a "No Comment" press release. BJT's Chairman of the Board of the Directors has called Bradley Johnson, Chief Executive Officer of BJT (USA), requesting Bradley submit a recommendation in 24 hours on whether to recall RU42WD tires given the recent accident and potential future bad press.

- (b) (3 points) Evaluate whether the sensing style or intuition style is more appropriate for CEO Johnson to use. Justify your answer.

*Questions 2 - 7 pertain to the Case Study.  
Each question should be answered independently.*

**3.** (9 points)

(a) (2 points)

- (i) Explain why defining Risk Appetite is more than simply a risk quantification step in an ERM process.
- (ii) List three potential benefits that life insurance companies could derive from implementing a Risk Appetite framework with regard to Variable Annuity products.

Darwin's Risk Appetite Statement, which can be found in Section 7 of the Case Study, includes the following risk exposures:

- I. Capital – A 15 percent loss of Statutory equity in one year
- II. Earnings – Negative GAAP earnings
- III. Ratings – Downgraded below an AA financial strength rating

(b) (3 points) State which of the above risk exposures would be most impacted by the following proposed Key Risk Indicators. Justify your response.

- (i) Significant Increase in Sales
- (ii) Stock Market Crash
- (iii) Significant Errors Found in an Administration System

RPPC Dynasty's Risk Appetite Statement can be found in Section 1 of the Case Study. Information on Darwin including risk factors can be found in Section 7 of the Case Study.

Darwin is in the process of reviewing its current risk appetite statement to ensure its relevance and ensure that it is actionable. Bob Smith suggests Darwin should simply adopt RPPC Dynasty's Risk Appetite Statement.

(c) (4 points) Recommend three changes to RPPC's Risk Appetite Statement to make it more appropriate for Darwin. Justify your recommendations.

**Questions 2 - 7 pertain to the Case Study.**  
**Each question should be answered independently.**

**4.** (9 points)

- (a) (1 point) Identify the six mistakes executives often make in risk management.
- (b) (4 points) Characterize each of the mistakes from part (a) as one of the following behavioral biases and blunders. Justify your answer.
- Anchoring
  - Framing
  - Optimism and Overconfidence
  - Representativeness
  - Gains and losses
  - Availability
  - Status Quo Bias

RPCC Dynasty's Risk Framework is described in Section 1 of the Case Study.

- (c) (4 points) Assess how RPCC Dynasty's risk management framework promotes the coordination between business management and risk management as part of a value-based ERM program.

*Questions 2 - 7 pertain to the Case Study.  
Each question should be answered independently.*

**5.** (13 points)

(a) (2 points)

- (i) List the five business-level strategies.
- (ii) Describe the relationship between customer value and target market for any three of the business level strategies in part (i).

John Feather, Blue Jay Air's CEO, wants you to perform a value chain analysis. Blue Jay Air categorizes its primary value chain activities as:

- 1 Supply-Chain Management
- 2 Operations
- 3 Distribution
- 4 Marketing & Sales
- 5 Follow-up Service

Blue Jay Air categorizes its support activities as:

- 6 Finance
- 7 Human Resource
- 8 Management Information Systems.

(b) (4 points) Identify one activity that Blue Jay Air performs for each of the eight categories of the value chain.

Blue Jay Air's new strategic vision is described in Section 2 of the Case Study.

(c) (4 points)

- (i) (1 point) Identify which one of the five business-level strategies from part (a)(i) Blue Jay Air is pursuing. Justify your answer.
- (ii) (3 points) Evaluate whether the value chain activities identified in part (b) support Blue Jay Air's strategy.



**Questions 2 - 7 pertain to the Case Study.**  
**Each question should be answered independently.**

**5. Continued**

Blue Jay Air wishes to increase the completion rate of applications for the loyalty program. The marketing team proposes the following three changes to the current application:

1. Upon starting the application, the applicant is told that completing the application results in a \$10 voucher for Frenz coffee.
  2. Each question now provides a drop down menu with a list of suggested valid responses and the default choice is yes.
  3. An application completion progress bar that estimates the time to completion, is visible on the top of the page, and it is updated when each question is answered.
- (d) (3 points) For each of the three proposed changes:
- (i) (1 point) Identify the choice architecture technique applied.
  - (ii) (2 points) Evaluate the behavioral impact on the completion rate.

**Questions 2 - 7 pertain to the Case Study.**  
**Each question should be answered independently.**

- 6.** (10 points) The description of Frenz coffee company is provided in Section 4 of the Case Study.

The five forces of competition model has the following elements:

- (1) Threat of new entrants
  - (2) Bargaining power of suppliers
  - (3) Bargaining power of buyers
  - (4) Threat of substitute products
  - (5) Rivalry among competing firms
- (a) (8 points) Analyze Frenz using the five forces of competition model.
- (b) (2 points) Assess Frenz's ability to earn above-average profits based on the analysis in part (a). Justify your assessment.

**Questions 2 - 7 pertain to the Case Study.**  
**Each question should be answered independently.**

- 7.** (9 points) A key component of risk in the single premium immediate annuity (SPIA) business is longevity.
- (a) (1 point) List risk factors of mortality variability that could be reflected in a stochastic analysis of economic reserves and capital for longevity risk in the SPIA business.

A key component of risk in the solar energy business is energy production. The Able Energy Consulting Group report is in Section 5 of the Case Study.

- (b) (2 points) List risk factors of energy production variability that could be used to estimate the economic reserves and capital for energy production in the solar energy business.
- (c) (3 points) Draw three similarities between attributes of the longevity risk factors for the SPIA business and attributes of the solar energy business.
- (d) (3 points) Evaluate the directional impact on two of the risk factors in each of parts (a) and (b) on the level of the economic reserves and capital. Justify your answer.

**\*\*END OF EXAMINATION\*\***

**USE THIS PAGE FOR YOUR SCRATCH WORK**