THE UNIVERSITY OF THE WEST INDIES
CAVE HILL

EXAMINATIONS OF APRIL/MAY 2019

CODE AND NAME OF COURSE: MGMT3076 - MANAGING FINANCIAL INSTITUTIONS

DATE AND TIME: **DURATION: 2 HOURS**

INSTRUCTIONS TO CANDIDATES: **This paper has 4 pages and 6 questions.**

This paper has TWO (2) sections – SECTION A and SECTION B

Candidates are required to answer THREE (3) questions. You are required to answer QUESTION 1 in SECTION A and any TWO (2) questions in SECTION B.

SECTION A

This question is compulsory.

QUESTION 1 (20 marks)

a) Compare and contrast the primary activities of a life insurance company with that of a commercial bank, including the nature of the assets and liabilities of these institutions. (8 marks)

b) Discuss the three (3) major risks faced by life insurance companies. (6 marks)

c) Describe three (3) main products offered by a life insurance company. (6 marks)

SECTION B

Answer TWO (2) questions from this SECTION.

QUESTION 2 (20 marks)

Critically discuss the reasons why there is more regulation imposed on, and more monitoring of, Financial Institutions compared to companies in other industries.

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QUESTION 3 (20 marks)

The balance sheet (book values) of Hedge Row Bancorp (in millions) is provided below.

ASSETS		LIABILITIES AND EQUITY	
Cash (non-interest earning)	$ 10.0	Demand deposits (one-year maturity)	$ 70.0
Short-term consumer loans (one-year maturity)	140.0	Demand deposits (two-year maturity)	40.0
Long-term consumer loans (two-year maturity)	150.0	Three-month Certificate of Deposits (CDs)	140.0
Three-month Treasury Bills	145.0	Three-month Bankers Acceptances	100.0
Six-month Treasury Notes	110.0	Six-month Commercial Paper	155.0
Five-year Treasury Bond	85.0	One-year time deposits	195.0
10-year, fixed-rate mortgages	120.0	Two-year time deposits	170.0
30-year, floating-rate mortgages (rate adjusted every nine months)	230.0	Equity capital (fixed)	120.0
	$ 990.0		$ 990.0

a) Calculate the cumulative one-year repricing gap (CGAP) for Hedge Row Bancorp. **(6 marks)**

b) Based on the answer from a) explain which risk Hedge Row Bankcorp would be exposed to. **(2 marks)**

c) Calculate the cumulative one-year impact on net interest income of Hedge Row Bancorp of a 1¼% (125 basis points) increase in interest rates on both rate sensitive assets and rate sensitive liabilities. **(4 marks)**

d) The weighted-average Duration of the assets of Hedge Row Bancorp is calculated at 3.6 years, while the weighted-average Duration of its liabilities is calculated at 2.8 years. The market values of the assets are estimated to be $1,000 (million), while the market value of the liabilities equate to the book value. With interest rate expected to rise from 9% to 10%, calculate the potential impact to the market value of the equity of Hedge Row Bancorp. **(8 marks)**

QUESTION 4 (20 marks)

a) Explain the purpose of credit scoring models. **(2 marks)**

b) Discuss the 5 C's of credit. **(8 marks)**

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QUESTION 4 (cont'd)

The estimated linear probability model used by a financial institution to predict business loan applicant default probabilities is given by:

$PD = 0.03X_1 + 0.02X_2 - 0.05X_3 + \text{error}$

where X_1 is the borrower's debt/equity ratio
X_2 is the volatility of borrower earnings, and
X_3 is the borrower's profit margin.

For prospective borrower A: $X_1 = 0.75$, $X_2 = 0.25$, and $X_3 = 0.15$.
For prospective borrower B $X_1 = 0.70$, $X_2 = 0.30$, and $X_3 = 0.20$.

c) Calculate the expected probabilities of default (PD) for each prospective borrower and discuss how this score is used in determining the default risk classification of the prospective borrower. **(8 marks)**

d) Explain the major weakness of the linear probability model. **(2 marks)**

QUESTION 5 (20 marks)

a) Describe the greatest cause of liquidity exposure faced by

i. Life insurance companies. **(4 marks)**
ii. Property and casualty insurance companies. **(4 marks)**

Bright Street Bank has the following balance sheet (in millions):

ASSETS		LIABILITIES AND EQUITY	
Cash	$ 30.0	Deposits	$ 120.0
Loans	110.0	Borrowed Funds	50.0
Securities	50.0	Equity	20.0
	$190.0		$190.0

b) One of Bright Street Bank's commercial customers decides to exercise a $15 million loan commitment. Show how the new balance sheet will appear if the bank uses the following liquidity management risk strategies.

i. Purchased liquidity management. **(4 marks)**
ii. Stored liquidity management. **(4 marks)**

c) Describe two (2) methods to measure liquidity risk. **(4 marks)**

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QUESTION 6 (20 marks)

a) Define the term Daily Earnings at Risk (DEAR) and describe the three (3) measurable components of DEAR. **(8 marks)**

First Summit Bank has an inventory of AAA-rated, 15-year zero-coupon bonds with a face value of $600 million. These bonds are currently yielding 5.5 percent in the over-the-counter market. The historical mean change in daily yields is 0.0 percent and the standard deviation is 12 basis points.

b) Calculate the modified duration of these bonds. **(2 marks)**

c) Calculate the price volatility of these bonds if the potential adverse move in yields is 25 basis points. **(2 marks)**

d) Calculate the DEAR for First Summit Bank on its portfolio of bonds. **(4 marks)**

e) Calculate the 10-day and 15-day Value-at-Risk (VAR) for First Summit Bank on its portfolio of bonds. **(4 marks)**

END OF QUESTION PAPER