**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**GRADUATE SCHOOL OF BUSINESS**

**EXECUTIVE MASTER OF BUSINESS ADMINISTRATION**

**RISK MANAGEMENT AND FINANCIAL REGULATION [EMB 5208]**

**SUPPLEMENTARY EXAMINATION: AUGUST 2011**

**TIME ALLOWED: 3 HOURS**

**Instructions to Candidates**

1. Answer ALL questions in Section A and any other two in Section B
2. All questions carry equal [25] marks.
3. Questions may be answered in any order.
4. Credit will be awarded for appropriate use of examples.

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**This paper consists of 4 pages**

## QUESTION 1

You have been appointed the Risk Manager for Mountain Bank Limited that has a loan portfolio of USD23 million as given below;

**Loan Portfolio**

| | Rating | Exposure Amount (USD) |
|---|---|---|
| Relax Private Limited | A+ | 9,000,000 |
| Minefield Private Limited | BBB+ | 3,000,000 |
| Trouble Private Limited | - | 1,000,000 |
| Texas Bank Limited | AA- | 10,000,000 |
| Total Amount | | 19,000,000 |

**Ratings by Phantom Ratings Agency**

| **Exposure** | AAA to AA- | A+ to A- | BBB+ to BBB- | BBB+ to BB- | BELOW B- | UNRATED |
|---|---|---|---|---|---|---|
| Corporate | 20% | 50% | 100% | 100% | 150% | 100% |
| Financial Institutions | 0% | 20% | 50% | 100% | 150% | 100% |
| Parastatals | 20% | 50% | 100% | 100% | 150% | 100% |

Suppose a specific loss provision of USD4million over the portfolio has been made. You are required to calculate the capital charge for credit risk under;

**i.** Base I Accord **[10 Marks]**

**ii.** Basel II Accord, Standardized Approach **[15 Marks]**

## QUESTION 2

You have been appointed the Risk Manager for Goodhope Bank Limited and you are given the following information;

| | Gross Income | | |
|---|---|---|---|
| **Business unit** | **Year 2007** | **Year 2008** | **Year 2009** |
| Corporate Finance | 50,000,000 | 60,000,000 | 48,000,000 |
| Trading and Sales | 20,000,000 | 24,000,000 | 19,200,000 |
| Retail Banking | 10,000,000 | 12,000,000 | 9,600,000 |
| Commercial Banking | 25,000,000 | 30,000,000 | 24,000,000 |
| Payments and Settlements | 1,000,000 | 1,200,000 | 960,000 |
| Agency Services | 3,000,000 | 3,600,000 | 2,880,000 |
| Retail Brokerage | 500,000 | 600,000 | 480,000 |
| **Total Gross Income** | **109,500,000** | **131,400,000** | **105,120,000** |

**a)** You are required to calculate the capital charge for operational risk under; Basel II Accord, Basic Indicator Approach **[10 Marks]**

**b)** With the aid of practical examples outline the seven key operation risk event types according to the Basel II accord **[15 Marks]**

## QUESTION 3

**a)** Discuss three operation risk management techniques **[10 Marks]**

b) Suppose you have a portfolio of independent loans made up of the following assets:

| Client Name | Rating | Exposure |
|---|---|---|
| ABC Ltd | AAA | 10,000,000 |
| DEF Ltd | BB | 15,000,000 |
| GHI Ltd | CCC | 5,000,000 |
| JKL Ltd | Default | 4,000,000 |
| MNO Ltd | BB | 10,000,000 |
| **Total** | | **44,000,000** |

**Ratings and risk components**

| S & P Rating | Default Frequency (PD) | Recovery Rates |
|---|---|---|
| AAA | 1% | 90% |
| AA | 2% | 80% |
| A | 3% | 75% |
| BBB | 10% | 70% |
| BB | 20% | 50% |
| B | 30% | 40% |
| CCC | 50% | 20% |
| DEFAULT | 100% | 10% |

You are requires to calculate the expected credit loss of your portfolio. **[15 Marks]**

## QUESTION 4

Discuss whether Basel II has any practical implications for consumers? **[25 Marks]**

## QUESTION 5

**a)** Explain the difference between entering into a long forward contract when the forward price is \$50 and taking a long position in a call option with a strike price of \$50.

**[5 Marks]**

b) Suppose that sterling-USD spot and forward exchange rates are as follows;

| | |
|---|---|
| Spot | 1.6080 |
| 90-day forward | 1.6056 |
| 180-day forward | 1.6018 |

What opportunities are open to an arbitrageur in the following situations?

i) A 180-day European call option to buy £1 for \$1.57 costs 2 cents

ii) A 90-day European option to sell £1 for \$1.64 costs 2 cents.

**[10 Marks]**

c) Determine and interpret the parametric Value at Risk (VaR) at a 99% confidence interval on a portfolio composed of two assets with the following assumptions;

| |
|---|
| Portfolio value = \$500 million |
| Weight (w) of asset 1 = 30% |
| Standard deviation ($\sigma$) of asset 1 = 6% |
| Standard deviation ($\sigma$) of asset 2 =4% |
| Correlation coefficient ($p$) = 20% |

**[10 Marks]**

## QUESTION 6

Discuss any six financial regulation instruments highlighting challenges faced by regulators in enforcing them. **[25 Marks]**

**END OF EXAMINATION PAPER**