STRATHMORE BUSINESS SCHOOL

BACHELOR OF FINANCIAL SERVICES

SPECIAL EXAM

BNK 4102: CREDIT RISK ANALYSIS AND MANAGEMENT

DATE: Wed, April 17th 2024 **TIME:** 15:30 – 17:30

Instruction:
Answer Question **One** and any **other Two** questions

QUESTION ONE (30 MARKS)

(a) Describe the concept of Value at Risk and its relevance in risk management **(2 marks)**

(b) Suppose the portfolio value of a fund manager is estimated at Ksh.600 million, the annual return is estimated at 10%, the annual standard deviation is estimated at 1.5%

Required:

Estimated the Value at Risk at 99% level of confidence and comment on your answer **(2 marks)**

c) Distinguish between stress tests and scenario analysis in relation to risk identification **(2 marks)**

d) The expected returns for credit portfolio are as given below:

Period	**Portfolio**
1	8%
2	10%
3	-12%
4	5%
5	-5%

Required:

Compute the following measures of risk:

(i) range **(1 mark)**

(ii) variance **(6 marks)**

(iii) standard deviation (volatility) **(1 mark)**

(iv) semi- variance **(2 marks)**

1 (e) Explain the following types of risk:

i) Settlement risk **(2.5 marks)**

ii) Transaction risk **(2.5 marks)**

iii) Issuer risk **(2.5 marks)**

iv) Issue risk **(2.5 marks)**

(Total 30 marks)

QUESTION TWO (20 marks)

An investment is being a credit officer at Z MFI that has the following expected costs, expected revenues and their respective probabilities

	Cash flows	**Probabilities**
Year 0: costs	Kshs. 300,000	
Year 1: (revenue)	Ksh.s.90,000	0.6
	Kshs. 30,000	0.6
Years 2-10: (revenue)	Ksh.s.90,000	0.8
	Kshs. 30,000	0.2

Required:

If the opportunity cost of capital is 10%, using the net present value rule assesses whether an investment project is viable and then advice Z MFI accordingly. **(20 marks)**

QUESTION THREE (20 marks)

(a) XYZ Ltd is considering a project with an expected life of 4 years. The project requires an initial certain cash outlay of $50,000. The expected cash inflows and certainty equivalent coefficients are as follows:

Year	After tax cash flows	Certainty equivalent factor
1	10,000	0.95
2	15,000	0.80
3	20,000	0.70
4	25,000	0.60

The risk-free rate of return is expected at 5%, market return is expected at 10% and beta is expected at 1.2

(10 marks)

3 (b) Suppose X MFI Ltd on had the following information regarding its loans and advances: probability of default = 15%, loss severity = 3% and loans amount advanced was shs.10 million.
Required: establish expected loss and comment on the answer **(2.5 marks)**

3 (c) X had cash sales of sh.8M, credit sales of sh.10M, trade creditors of sh. 800,000 and trade debtors of sh.2M
Required: compute the debtor days **(2.5 marks)**

3 (d) Describe the 5 Cs of credit **(5 marks)**

QUESTION FOUR (20 marks)

4 (a) Y Ltd wishes to borrow sh.5 million for 4 years. The cost of sales is sh.10M, sales is sh.25M, default rate probability of 70% and discounting rate was 12%
Required:
(i) advice whether to grant credit using the NPV technique **(5 marks)**
(ii) Suppose that the default rate in the question above is 30%, assess and advice on the credit grant decision using NPV technique **(5 marks)**

4 (b) Describe the process of aging of debtors over time using a table with several hypothetical debtors and trade debt amounts **(5 marks)**

4 (c) Describe the 4 Ts of credit risk **(5 marks)**

QUESTION FIVE (20 marks)

(a) Suppose a firm has expected costs of sh.8 million a year from today and expected revenues for the next 5 years that are based on the expected state of the economy as follows:

Economic state	probability
Best scenario	0.2
Expected scenario	0.5
Worst scenario	0.3

Expected revenues

Years	**Best scenario**	**Expected scenario**	**Worst scenario**
1	sh.5 million	sh.3 million	sh.1 million
2	sh.6 million	sh.4 million	sh.2 million
3	sh.7million	sh.5 million	sh.4 million
4	sh.6 million	sh.5 million	sh.2 million
5	sh.4million	sh.2 million	sh.0.5 million

Required:

If the opportunity cost of capital is 12%, advice on the expected net profitability position of the investment. **(10 marks)**

(b) Suppose in the question (b) above all the revenues and costs are uncertain and the certainty equivalent factor is 0.8 with risk free rate being 8%

Required: compute the expected net profitability position of the investment. **(10 marks)**