NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF COMMERCE, HUMAN SCIENCES AND EDUCATION

DEPARTMENT OF MARKETING, LOGISTICS AND SPORT MANAGEMENT

QUALIFICATION: POST GRADUATE DIPLOMA IN PROCUREMENT MANAGEMENT	
QUALIFICATION CODE: 08PDPM	**LEVEL:** 8
COURSE CODE: FTP801S	**COURSE NAME:** FINANCIAL TECHNIQUES FOR PROCUREMENT AND SUPPLY CHAIN MANAGEMENT
SESSION: MAY 2024	**PAPER:** THEORY AND CALCULATIONS
DURATION: 3 HOURS	**MARKS:** 100

SECOND OPPORTUNITY FINAL ASSESSMENT QUESTION PAPER	
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MODERATOR	MR. JOHANNES NDJULUWA

INSTRUCTIONS

1. This question paper consists of **FOUR (4)** questions.
2. Answer **ALL FOUR (4)** questions in blue or black ink only. **NO PENCIL**.
3. Start each question on a new page, number the answers correctly and clearly.
4. Write clearly, neatly and show all your workings/calculations/assumptions.
5. Unless otherwise stated, work with four (4) decimal places in all your calculations and only round off final answers to two (2) decimal places.
6. Questions relating to this assessment may be raised in the initial 30 minutes after the start of the examination. Thereafter, candidates must use their initiative to deal with any perceived error or ambiguities and any assumptions made by the candidate should be clearly stated.

PERMISSIBLE MATERIALS

- Silent, non-programmable calculators

THIS FINAL ASSESSMENT CONSISTS OF _9_ PAGES (including this cover page, not tables)

QUESTION 1 **[30 MARKS]**

For questions 1.1 – 1.15, write only the answer (the correct letter chosen) in your answer book and not on the question paper. Do not copy the question again. (2 marks each)

1.1 Which of the following is an example of a capital investment project?

A. Replacement of worn out equipment
B. Expansion of production facilities
C. Development of employee training programs
D. All of these.

1.2 Which of the following is an appropriate way to measure cash flows?

A. Treat depreciation as a negative cash flow
B. Consider only incremental costs and revenues
C. Consider only after-tax cash flows
D. All of these.

1.3 The net present value of a project is equal to

A. The present value of all net cash flows that result from the project.
B. The present value of all revenues minus the present value of all costs that result from the project.
C. The present value of all future net cash flows that result from the project minus the initial investment required to start the project.
D. All of these.

1.4 The accounting rate of return is measured as follows:

A. Average annual profit expressed as a percentage of the total funds invested in the project.
B. Average annual profit expressed as a percentage of the average funds invested in the project.
C. Total profits expressed as a percentage of the average funds invested in the project.
D. Total profits expressed as a percentage of the total funds invested in the project.

1.5 The objective of portfolio analysis is best described as:

A. To analyse the individual risk of each investment project
B. To analyse the incremental risk that each individual investment contributes to the overall risk
C. To reduce the overall risk of investments by investing in many rather than few
D. To eliminate risk completely

1.6 When calculating the expected value we are:

A. Looking at the most likely result that is going to occur
B. Looking at the average result likely to occur
C. Looking at the best result that can be expected
D. Looking at the worst result that can be expected

1.7 If we have a portfolio of two products whose results are perfectly negatively correlated, risk will be minimised by investing :-

A. In the product that yields the highest expected value
B. In the product that has the lowest standard deviation
C. In both products equally
D. Risk can be minimised by

1.8 Which of the following statements concerning the NPV is not true?

A. The NPV technique takes account of the time value of money.
B. The NPV of a project is the sum of all the discounted cash flows associated with a project.
C. The NPV technique takes account of all the cash flows associated with a project.
D. If two competing projects are being considered, the one expected to yield the lowest NPV should be selected.

1.9 Which of the following statements concerning the payback period, is not true?

A. The payback period is simple to calculate and understand.
B. The payback period measures the time that a project will take to generate enough cash flows to cover the initial investment.
C. The payback period ignores cash flows after the payback point has been reached.
D. It takes account of the time value of money.

1.10 The _____ describes the linear relationship between expected rates of return for individual securities (or portfolios) and _____.

A. characteristic line; standard deviation
B. characteristic line; beta
C. security market line; standard deviation
D. security market line; beta

1.11 Which of the following items describes an index measure of systematic risk?

A. Beta.
B. Standard deviation.
C. Coefficient of variation.
D. Variance.

1.12 Which of the following items is a model that describes the relationship between risk and expected return (in this model the expected return is equal to the risk-free return plus a premium based on the systematic risk of the security)?

A. Beta.
B. Characteristic line.
C. Capital asset pricing model.
D. Efficient markets model.

1.13 This type of risk is avoidable through proper diversification.

A. portfolio risk
B. systematic risk
C. unsystematic risk
D. total risk

1.14 The term "capital structure" refers to:

A. long-term debt, preferred stock, and common stock equity.
B. current assets and current liabilities.
C. total assets minus liabilities.
D. shareholders' equity.

1.15 What is meant by the cost of capital of a company?

A. It is the equity shares of the company that will provide variable rates of dividend over a set period.
B. It is a metric that is inversely proportional to the overall pile of debts.
C. It is the return on investment recorded against each fixed asset owned by the company.
D. Cost of capital of a company is a stat that represents the internal return rates.

(2 marks each, 2 x 15 = 30 marks)

QUESTION 2 **[25 MARKS]**

The Roads Authority (hereafter RA), whose core business is to construct and maintain Namibia's road sector, plays a pivotal role in road safety in Namibia. Namibia's road network has been ranked among the safest, most efficient, and sustainable, and is the envy of many countries. The growth of the road infrastructure and the expansion of the road network have contributed immensely to the economic development of Namibia and the SADC sub-region. Assume that RA is looking to expand its interests by purchasing an interest in either company A or company B. The management of RA believes that the expected returns from the acquisition of any of the companies are dependent on the state of the economy. The following information is made available: The company uses five percent cost of capital.

		Estimated Returns		
State of economy	**Probability of occurrence**	**Company A**	**Company B**	**MARKET**
Boom	0.3	16%	20%	14%
Recession	0.4	10%	12%	8%
Depression	0.3	2%	0%	6%
Market value in million		N$8m	N$12m	-

REQUIRED:		**MARKS**
a)	Calculate the expected return together with the standard deviation for both companies and the market	**12**
b)	If RA is to select only one company to invest in, which one would you advise RA to select? Motivate your answer with appropriate calculations.	**3**
c)	Determine expected return together with the standard deviation of the portfolio, if RA invests in both companies to form a portfolio.	**10**
TOTAL		**25**

QUESTION 3 **[25 MARKS]**

Dineo Manufacturing and Supplies (hereafter DMS) is a 100% Namibian custom garment manufacturer. The target audience of DMS is corporate companies, public services, and schools and is not limited to local and international brands. Below are the summarized financial statements of DMS for the year ended 31 December 2023.

DMS Statement of financial position as of 31 December 2023

ASSETS	**2023**	**2022**
Non-current assets	9 450 000	8 640 000
Property, plant, and equipment	9 450 000	8 640 000
Investments	-	-
Current assets	36 045 000	29 632 500
Inventories	20 925 000	14 850 000
Receivables	12 150 000	9 990 000
Cash assets	2 970 000	4 792 500
TOTAL ASSETS	**45 495 000**	**38 272 500**
EQUITY AND LIABILITIES		
Share capital and reserves	16 335 000	15 120 000
Share capital	7 000 000	7 000 000
Other reserves	-250 000	-250 000
Retained earnings	9 585 000	8 370 000
Redeemable -preference shares	2 700 000	2 700 000
Non-current liabilities: Long-term borrowings	7 425 000	7 425 000
Current liabilities	**19 035 000**	**13 027 500**
Trade and other payables	4 860 000	4 320 000
Short term borrowings	14 175 000	8 707 500
TOTAL EQUITY AND LIABILITIES	**45 495 000**	**38 272 500**

DMS Statement of comprehensive income for the year ended 31 December 2023

	2023	**2022**
Sales	85 320 000	74 250 000
Cost of sales	63 990 000	54 945 000
Gross profit	**21 330 000**	**19 305 000**
Operating expenses	12 636 000	11 070 000
Depreciation	810 000	675 000
Profit before interest and tax	**7 884 000**	**7 560 000**
Finance costs	2 430 000	1 485 000
Profit before tax	**5 454 000**	**6 075 000**
Income tax expense	2 430 000	2 160 000
Profit from continuing operations	**3 024 000**	**3 915 000**
loss on discontinued operations	1 080 000	-
Profit for the year	**1 944 000**	**3 915 000**

DMS Statement of changes in equity (extract) for the year ended 31 December 2023

	2023	2022
Balance on 31 December	8 370 000	5 184 000
Comprehensive income for the year	1 944 000	3 915 000
	10 314 000	9 099 000
Dividends-preference shares	-324 000	-324 000
Dividends-ordinary shares	-405 000	-405 000
Balance on 31 December	9 585 000	8 370 000

REQUIRED		MARKS
a)	Compute the following liquidity ratios for 2022 and 2023 and comment on the overall liquidity position of DMS. • Current ratio • Quick ratio • Debtors' collection period • Creditors settlement period	10
b)	Compute the debt ratio of DMS for 2022 and 2023 and comment on your answer. • Debt ratio	3
c)	Compute the following profitability ratios for 2022 and 2023 and comment on the overall profitability of DMS. • Gross profit margin • Net profit margin • Return on Assets	8
d)	Explain any four (4) limitations of financial statement/ratio analysis	4
TOTAL		25

QUESTION 4 **[20 MARKS]**

Super Save needs to increase production capacity to meet the increasing demand for an existing product, 'super' used in food processing. A new machine, with a useful life of four years could be bought for N$1 million, payable immediately. The scrap value of the machine after four years would be N$30 000. Forecast demand and production of super over the next four years are as follows:

Year	1	2	3	4
Demand (kg)	1.4 million	1.5 million	1.6 million	1.7 million

The current selling price of super is N$8 per kilogram, and the variable cost of materials is N$5 per kilogram. Other variable costs of production are N$2.50 per kilogram. Fixed costs of production associated with the new machine would be N$240 000 in the first year of production, increasing by N$20 000 per year in each subsequent year of operation. Super Save uses a cost of capital of 20% when appraising investment projects.

REQUIRED:	**MARKS**
Calculate the Net Present Value (NPV) of buying the new machine and advise on the acceptability of the proposed purchase	**20**
TOTAL	**20**

END OF QUESTION PAPER

FORMULA SHEET

Portfolio Expected Return	$ER_p = \sum W_A \times ER_A + W_B \times ER_B$
Portfolio standard deviation	$\sigma_{AB} = \sqrt{W_A^2 x \sigma^2_A + W_B^2 x \sigma^2_B + 2 x WA x W_B x Cov_{AB}}$
Beta (β)	Covariance of company with market)/variance of market
Cost of equity capital	$R_e = Rf + \beta (Rm - Rf)$ and $R_e = [D_1 \div P_o] + g$
Before tax cost of debt	$k_d = I + [\text{Par value} - N_d]/n \div [N_d + \text{par value}]/2$
Frequency of compounding	$FV = PV[1 + (r/m)]^{t*m}$
Effective Annual Rate	$FV = PV[1 + (r/m)]^{t*m}$
Payment	$PMT = PV \times r/[1-1/(1+r)^t]$
Internal Rate of Return	$IRR = R_1 + [N_1 \times (R_2-R_1)]/N_1+N_2$
Profitability Index	$\frac{\text{Present value of future cash flows } (excluding\ initial\ outlay)}{\text{Initial investment}}$
Profitability Index	$1 + \frac{NPV}{\text{Initial investment}}$
Accounting Rate of Return	$\frac{\text{Average annual profit}}{\text{Average investment}}$
Expected return (discrete distribution)	$\sum P_i \times R_i$
Expected return (continuous distribution)	$\frac{\sum R_i}{N}$
Standard deviation (discrete distribution)	$\sqrt{\sum [R_i - E(R)]^2 x (P_i)}$
Standard deviation (continuous distribution)	$\sqrt{\frac{\sum (R_i - E(R)^2}{n}}$
Covariance (discrete distribution)	$= \Sigma Pi [R_A - E(R_A)] [R_B - E(R_B)]$
Coefficient of variation	$\frac{\text{Standard deviation}}{\text{Expected return}}$
Correlation coefficient	$\frac{\text{Covariance of the assets 1 and 2}}{\sigma_1 x \sigma_2}$