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**CERTIFIED PUBLIC ACCOUNTANT  
INTERMEDIATE LEVEL EXAMINATIONS**

**11.1: MANAGERIAL FINANCE**

**DATE: THURSDAY, 01 DECEMBER 2022**

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**INSTRUCTIONS:**

1. **Time Allowed: 3 hours 15 minutes** (15 minutes reading and 3 hours writing).
2. This examination has **two sections; A & B.**
3. Section A has **three Compulsory Questions** while B has three questions of which **two** Should be attempted.
4. In summary attempt **Five** questions.
5. Marks allocated to each question are shown at the end of the question.
6. Show all your workings where necessary.
7. The question paper should not be taken out of the examination room.

## SECTION A

### QUESTION ONE

Nyagatare Medical Supplies Ltd (NMSL) is a company engaged in importing medical equipment, consumables, and supplies in Rwanda. NMSL was established in 2015 and since then it has been supplying medical equipment and consumables for private and public health facilities. To curb and control the spread of Coronavirus in the country, NMSL was offered a tender to supply personal protective equipment (PPE), surgical masks, and sanitizers worth FRW 500 million.

NMSL has been generating profits and paying its shareholders dividends for their investment since 2016 but as a result of the opportunity at hand, the management plans to use the generated profits to invest in procuring medical supplies.

The board also plans to pay its shareholders dividends in form of stock split to allow them purchase shares at an affordable price. The following information was obtained from the extract of NMSL's statement of financial position as at 30 June 2020.

**Table 1.1: The extract of financial statement of NMSL's Ltd**

<b>Equity and liabilities:</b>	<b>FRW</b>
Ordinary Share Capital, FRW 1,000 per share	600,000,000
Reserves and surplus	500,000,000
10% Debenture, FRW 3,000	300,000,000
<b>Total</b>	<b>1,400,000,000</b>

### **Required:**

(a) If the Board of Directors approved a 5 for 2 split of NMSL's common shares, with the use of appropriate calculations indicate the impact of the share split on the:

- (i) **Number of shares** (2 Mark)
- (ii) **Par value of the stock** (2 Mark)
- (iii) **The total capital of the company** (2 Mark)

(b) **Explain any SIX factors that companies should consider in determining their dividend policy.** (12 Marks)

(c) **Discuss to the manager the proposition of Dividend Irrelevance Theory (Miller and Modigliani Theory) in company valuation.** (7 Marks)

**(Total: 25 Marks)**

**QUESTION TWO**

(a) You are provided with financial statements of Iranzi Ltd and Irakoze Ltd.

**Statement of financial position as at 31 December 2020:**

Details	Iranzi Ltd FRW 'million'	Irakoze Ltd FRW 'million'
<b>Non-current assets:</b>		
Property, plant, and equipment	<b>3,450</b>	<b>4,360</b>
<b>Current assets:</b>		
Inventory	2,000	2,200
Trade receivables	1,300	1,740
Cash	950	850
<b>Total Current assets</b>	<b><u>4,250</u></b>	<b><u>4,790</u></b>
<b>Total assets</b>	<b><u>7,700</u></b>	<b><u>9,150</u></b>
<b>Equity and liabilities:</b>		
<b>Equity:</b>		
Ordinary Share Capital	3,700	4,000
Profit and loss account	2,000	2,300
<b>Total Equity</b>	<b><u>5,700</u></b>	<b><u>6,300</u></b>
<b>Non-current liabilities:</b>		
Loans (Long term)	<b>1,100</b>	<b>1,850</b>
<b>Current liabilities:</b>		
Trade payables	900	1,000
<b>Total equity and liabilities</b>	<b><u>7,700</u></b>	<b><u>9,150</u></b>

**Statement of comprehensive Income for the year ended at 31 December 2020:**

	Iranzi Ltd FRW 'million'	Irakoze Ltd FRW 'million'
Sales	6,000	9,650
Less: cost of sales	4,800	7,800
Gross profit	1,200	1,850
Less expenses:		
Miscellaneous expenses	200	350
Loan interest	20	50
Profit before tax	<b>980</b>	<b>1450</b>
Taxation	294	435
Profit after tax	<b>686</b>	<b>1,015</b>
Dividend paid	<u>300</u>	<u>400</u>
Retained profit	<u>386</u>	<u>615</u>

Note: Assume a year has 360 days.

**Required:**

(i) Calculate the operating cycle and cash conversion cycle for both Iranzi Ltd and Irakoze Ltd. Round off your answers to the nearest whole number. (6 Marks)

(ii) Compare and contrast the results for the two companies from (i) above. (2 Marks)

(iii) Calculate the current ratio and quick asset ratio for both Iranzi Ltd and Irakoze Ltd. (4 Marks)

(b) Kabeza Company Ltd is considering relaxing its credit standards. The company's current credit term is net 30 days, but the average debtors' collection period is 45 days. Current annual credit sales amounts to FRW 40,000,000. The company wants to extend its credit period to net 72 days. Sales are expected to increase by 25% because of this proposed credit policy. Bad debts will also increase from 2.5% to 3% of annual credit sales. Credit analysis and debt collection costs will increase by FRW 540,000. The annual overdraft rate for return on debtors is 12%. For FRW 100 of sales, FRW 75 is variable costs.

**Required:**

Assuming 360 days in a year, advise the company on the impact of its proposed credit policy. (8 Marks)

**(Total: 20 Marks)**

**QUESTION THREE**

a) Bitwayiki Enterprise Ltd (BEL) is a business dealing in groceries in Kigali for more than five years. The Managing Director of BEL wants to commence delivery services for the grocery products to make it convenient for customers. The company needs FRW 15 million for the purchase of motorcycles that will help in delivery. BEL is a client of Terimbere Commercial Bank and it requested for a loan of FRW 15 million for five years at a 10 % interest rate which is to be repaid in five equal yearly installments.

**Required:**

Prepare loan amortization schedule for BEL (10 Marks)

b) Capital markets are a crucial part of a functioning economy and a vital source of capital for the growth of businesses.

**Required:**

(i) Explain THREE roles of capital market to the Rwandan economy (3 Marks)

(ii) Distinguish between equity financing and debt financing (2 Marks)

**(Total: 15 Marks)**

**SECTION B:**

**QUESTION FOUR**

Twihaze Ltd (TL) is a fertilizer manufacturing company registered in Rwanda. TL started operating in June 2020. TL is one of the largest and variety fertilizer manufacturing companies in Rwanda. The demand for fertilizers has been increasing within Rwanda and in the region since its inception. The directors of TL are considering the purchase of two new machines X and Y to increase the production capacity of the company.

The Director of Finance has approached you to advise them on the purchase of the two machines.

**Table 4.1 demonstrates cash flows to be expected from the investment in the two machines:**

Details	Machine X	Machine Y
Year	Cash inflow (FRW)	Cash inflow (FRW)
1	12,000,000	15,000,000
2	15,000,000	18,000,000
3	26,000,000	10,000,000
4	28,000,000	10,000,000

TL is expected to make an initial investment cost of FRW 50,000,000 each for both machines

**Required:**

(a) Calculate the profitability index and modified payback period for machine X and machine Y if the discount rate is 10 %. *Note: Round off to two decimal places.*

(13 Marks)

(b) Advise the Director of Finance on which of the two machines to purchase with reference to results obtained in (a) above.

(2 Marks)

(c) The principal-agent problem is a problem that arises from failure to separate between stewardship from ownership.

(i) Briefly discuss THREE causes of the principal-agent problem.

(3 Marks)

(ii) Explain how the principal-agent problem discussed above in (c) (i) can be solved

(2 Marks)

**(Total: 20 Marks)**

**QUESTION FIVE**

(a) Mugisha, portfolio manager formed a portfolio by combining the risk-free asset and the market portfolio. The risk-free rate is 8%, the required rate of return on the market is 12% and security’s Capital Asset Pricing Model (CAPM) beta is 1.2. The portfolio depends partly on macroeconomic factors such as inflation uncertainty, interest rate risk, and business cycle uncertainty. It also partly depends on the unit sensitivity to each macroeconomic factor with zero sensitivity to the other factors. **Other information about the macroeconomic factors is provided in table 5.1 below:**

Details	Inflation uncertainty	Interest rate	Business Cycle uncertainty
Market rate	12%	11%	10%
Risk free rate	8%	8%	8%
Beta	0.8	1.3	0.9

**Required:**

- (i) Calculate Asset’s required rate of return using CAPM and Arbitrage Pricing Theory (APT). (4 Marks)
- (ii) Explain TWO assumptions and TWO limitations of applying CAPM. (4 Marks)
- (iii) Describe the relationship between efficient frontier and capital market line with help of an appropriate illustration as used in portfolio theory (4 Marks)

(b) You are provided with the following information for XYZ Ltd **Table 5.2: Extract of financial statement of XYZ Ltd**

Details	XYZ Ltd
Earnings after tax (FRW)	3,000
Number of shares outstanding	300
P/E Ratio	10

XYZ Ltd’s projected free cash flows to equity per share for the next five years. **Table 5.3:**

**Projected free cash flows for XYZ Ltd**

Year	1	2	3	4	5
Projected free cash flow (Frw ‘000’)	1,270	1,540	1,850	2,400	2,520

The discount rate, based on financial markets rate, is 12%. There has been a constant growth rate of 5% for five years. Ignore taxation and depreciation.

**Required:**

- (i) Calculate the value of XYZ Ltd using the Earnings Based Method (3 Marks)
  - (ii) Estimate the equity value of XYZ Ltd using the Discounted Cash Flow (DCF) method. *Note: Round off to two decimal places.* (5 Marks)
- (Total 20 Marks)**

## **QUESTION SIX**

Rukoma Construction Ltd (RCL) is a listed construction company since 2016. The management of RCL is considering raising capital to finance its construction projects for the next year. There was a disagreement in the general annual meeting about the proportion of equity and debt to form the required capital structure. Some of the members argued that equity is more expensive than debt and that shareholder value would be enhanced by raising a large amount of debt while others said that the value of the firm is independent of the capital mix. The management of RCL decided to hire a Financial Analyst and was tasked to prepare a presentation on the concept of capital structure and theories underpinning it in the next shareholders meeting.

### **Required:**

- (a) **Assuming you are hired Financial Analyst, prepare a presentation to the management of RCL explaining FOUR factors affecting capital structure. (8 Marks)**
- (b) **Discuss the following theories underlying capital structure:**
  - (i) **The Net Income (NI) Approach (3 Marks)**
  - (ii) **The Net Operating Income (NOI) Approach (3 Marks)**
  - (iii) **The traditional Approach (3 Marks)**
  - (iv) **The Modigliani-Miller (MM) Approach (3 Marks)**

**(Total: 20 Marks)**

**End of Question Paper**