

CPA PART III SECTION 5

ADVANCED FINANCIAL MANAGEMENT

THURSDAY: 2 September 2021.

Time Allowed: 3 hours.

Answer ALL questions. Marks allocated to each question are shown at the end of the question. Show ALL your workings.

QUESTION ONE

- (a) Modern portfolio theory applies advanced mathematical models to determine the correlation between risk and return of investments. While it is commonly used, it does have some potential drawbacks.

In relation to the above statement, examine six shortcomings of the modern portfolio theory. (6 marks)

- (b) Softex Limited is contemplating building a 3 - asset portfolio comprising assets of firms A, B and C.

The company wishes to invest Sh.5 million in the shares of these firms. Given below are the number of shares and the current market prices per share for each company:

Company	Number of shares	Current market price per share	
		Sh.	
A	50,000	50	
B	32,500	40	
C	40,000	30	

The forecasted market price for each share after one year and their probability of occurrence in different states of nature are given as follows:

State of nature	Probability	Forecasted share price after 1 year (Sh.)		
		Company		
		A	B	C
Boom	0.30	60	50	36
Normal	0.40	55	46	34
Recession	0.30	48	35	27

Additional information:

The correlation coefficient of the returns of the assets are given as follows:

A and B	=	+0.98
A and C	=	+0.76
B and C	=	+1

Required:

- (i) The expected portfolio return. (4 marks)
- (ii) Using the mathematical model, compute the portfolio risk. (6 marks)
- (c) Explain four reasons why derivative instruments have continued to become more popular in financial markets. (4 marks)

(Total: 20 marks)

QUESTION TWO

(a) Your country is considering establishing a mortgage refinancing company to support an affordable housing project for its citizens. The company’s mandate will be to provide secure, long-term finance to primary mortgage lenders who will then advance the same to individual borrowers.

Required:

In the context of the above statement:

- (i) Identify three types of primary mortgage lenders that are likely to benefit from the mortgage refinancing facility in your country. (3 marks)
- (ii) Summarise three objectives of a mortgage refinancing company in an economy. (3 marks)
- (iii) Highlight three minimum requirements that one must fulfil in order to qualify for a mortgage in real estate financing. (3 marks)

(b) Mamba Ltd.’s existing debt to equity ratio is 0.5 and its asset beta is 0.40. The company decides to undergo a financial reconstruction during which it would repurchase its outstanding shares using borrowed debt. This will change its debt to equity ratio to 0.90.

Additional information:

1. The risk-free rate is 6%.
2. The return of the market portfolio is 14%.
3. The firm adopts a 60% payout ratio and expects to generate earnings per share (EPS) of Sh.6.0 in the current financial year.
4. The firm generates a net income of Sh.12 million and equity capital is Sh.96 million.
5. Corporation tax rate applicable is 30%.

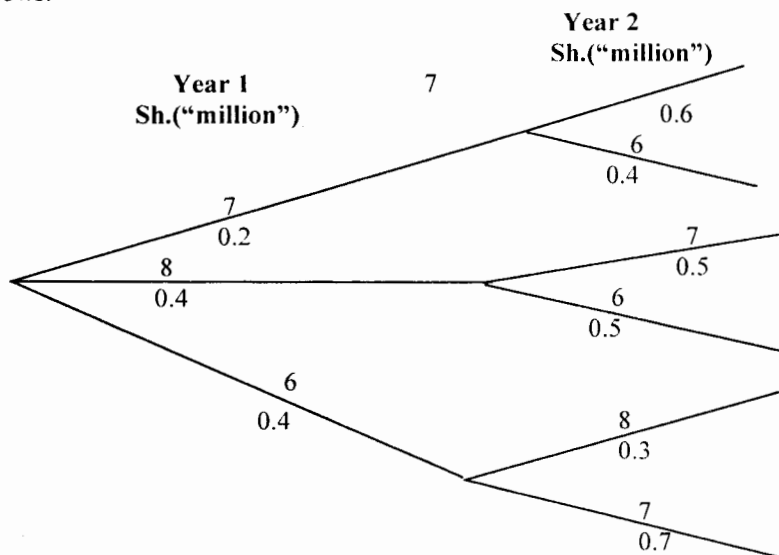
Required:

- (i) The firm’s levered equity beta before and after the financial reconstruction. (3 marks)
- (ii) The firm’s cost of equity before and after the financial reconstruction using the capital asset pricing model (CAPM). (3 marks)
- (iii) Analyse the impact of the financial reconstruction on the firm’s share price. (5 marks)

(Total: 20 marks)

QUESTION THREE

(a) XYZ Ltd. is considering buying a new machine for its manufacturing processes at a cost of Sh.10 million. The machine is expected to have a useful life of 2 years with no salvage value. The future net cash flows to be generated in each year are uncertain. The estimated cash flows and probability of their occurrence are given as follows:



Additional information:

- 1. The possibility of abandonment exists after 1 year.
- 2. The abandonment value is estimated at Sh.8 million.
- 3. The cost of capital is 13%.

Required:

- (i) Expected net present value of the project. Ignore the abandonment option. (4 marks)
 - (ii) Using suitable computations, justify whether abandonment of the project is a viable option. (4 marks)
 - (iii) Determine the expected net present value (ENPV) of the project assuming it is advantageous to abandon the project after 1 year. Comment on the financial implications to the firm. (3 marks)
- (b) Zeltex Limited intends to acquire a mainframe computer for processing and storage of its data. The computer is expected to cost Sh.800,000. The finance director has made two proposals for acquiring the computer.

Proposal 1: Leasing option

Lease the computer for 5 years before the new model is introduced. The lease payments constitute Sh.150,000 per annum for 5 years. Repair and maintenance costs incurred are estimated at Sh.100,000 per annum for 5 years. The firm can choose to exercise the option to buy the computer for Sh.100,000 after 5 years.

Proposal 2: Purchase option

The firm can borrow Sh.800,000 from a commercial bank at an interest rate of 16% per annum to finance the purchase of the asset. The interest on the loan is payable on a reducing balance basis.

The salvage value of the asset is estimated to be Sh.150,000 after 5 years. Depreciation is on a reducing balance basis. Corporate tax rate is 30%. Service and maintenance cost would amount to Sh.80,000 per annum.

Required:

- (i) An evaluation of both Option 1 and Option 2. (8 marks)
- (ii) Advise the company on whether it should buy or lease the asset. (1 mark)

(Total: 20 marks)

QUESTION FOUR

(a) In relation to international debt instruments:

- (i) Explain the meaning of the term "Eurobond". (2 marks)
- (ii) Discuss four benefits of Eurobond financing. (4 marks)

(b) Dinosoft Limited's capital structure, which it considers optimal, is given as follows:

	Sh. "million"
Debenture capital	25
Reserves	15
Ordinary share capital	45
Preference share capital	<u>15</u>
	100

Additional information:

- 1. The firm's historical earnings per share (EPS) and dividend per share (DPS) over the last five years are given as follows:

Year to 31 December	EPS	DPS
	Sh.	Sh.
2016	6.5	3.00
2017	6.8	3.10
2018	7.0	3.30
2019	7.5	3.50
2020	8	3.60

- 2. The company's ordinary shares currently sell at Sh.50 per share at the Securities Exchange. New ordinary shares will be sold at this price.

3. The company's expected net income for the year ending 31 December 2020 is Sh.40,000,000. Dinosoft Limited adopts a constant payout ratio of 40% as its dividend policy.
4. The company can raise additional capital as follows to finance acceptable investment projects:

Equity capital: Utilise all available retained earnings for the year ended 31 December 2020. Any extra external equity will be raised through issue of new ordinary shares at a floatation cost of 10% of the issue price.

Preference share capital: New preference shares will be issued at 11% coupon rate. The par value of each share is Sh.100. New preference shares will be issued at par subject to a floatation cost of Sh.5 per share

Debentures: New debentures can be sold at a coupon rate of 13%. The debentures will be issued at par.

5. Corporation tax rate is 30%.

Required:

- (i) Calculate the breakpoint in the marginal cost of capital schedule. (2 marks)
- (ii) The weighted marginal cost of capital (WMCC) in each of the intervals between the breakpoints. (6 marks)
- (iii) Dinosoft Limited has the following potential investment opportunities.

Project	Initial cash outlay Sh.	Internal rate of return (%)
V	10,000,000	16
W	20,000,000	14
X	10,000,000	11
Y	20,000,000	10
Z	10,000,000	8

Required:

Using the investment opportunities schedule, advise on which project(s) to accept and hence determine the firm's optimal capital budget. (6 marks)

(Total: 20 marks)

QUESTION FIVE

- (a) The number of hostile takeovers relative to friendly or uncontested takeovers is small. However, drama surrounds them and they usually capture the interest of the press and the public.

In light of the above statement, examine four legal measures that could be applied to counter mergers and acquisitions. (4 marks)

- (b) Propose four types of financial synergies that could arise as a result of a merger. (4 marks)
- (c) Duncan Kipchumba, the director of Wote Ltd. met Lewis Khaminwa, the director of Toa Limited during a conference in Kisumu City. They had some discussion about their two companies. After flying back to Nairobi, Duncan Kipchumba proposed to his board of directors the acquisition of Toa Ltd.

During his presentation to the Board, he stated that "as a result of this takeover, we will diversify our operations and earnings per share will rise by 13% bringing great benefits to our shareholders".

No bid has yet been made and Wote Limited currently owns 2% of Toa Ltd. A bid would be based on an exchange of shares between the two companies which would be one Wote Ltd. share for every six Toa Ltd. shares.

Financial data for the two companies include the following:

	Wote Ltd. Sh.("million")	Toa Ltd. Sh.("million")
Turnover	56.0	42.0
Profit before tax	12.0	10.0
Profit attributable to ordinary shareholders	7.8	6.5
Dividends payable	<u>3.2</u>	<u>3.4</u>
	<u>4.6</u>	<u>3.1</u>
Issued ordinary share capital (Sh."million")	20	15
Market price per share (MPS) (Sh.)	3.20	0.45
Par value per share (Sh.)	0.50	0.10

Required:

- (i) The pre-merger price to earnings (P/E) ratio for both companies. (4 marks)
- (ii) Post merger earnings per share (EPS). (3 marks)
- (iii) Explain whether you agree with Duncan Kipchumba when he says that the takeover would bring great benefits to ordinary shareholders. Support your answer with relevant calculations. (2 marks)
- (iv) The post-acquisition price of a share of Wote Ltd. assuming the bid is successful. (3 marks)
- (Total: 20 marks)**
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