

FINANCIAL MANAGEMENT

Nov-Dec 2022

Time allowed- 3:30 hours

Total marks- 100

[N.B. - The figures in the margin indicate full marks. Questions must be answered in English. Examiner will take account of the quality of language and of the manner in which the answers are presented. Different parts, if any, of the same question must be answered in one place in order of sequence.]

- | | Marks |
|---|-------|
| 1. a) Siam's broker has shown him two bonds. Each has a maturity of 5 years, a par value of Tk 1,000 and a yield to maturity of 12%. Bond A has a coupon interest rate of 6% paid annually. Bond B has a coupon interest rate of 14% paid annually. | |
| Requirements: | |
| i) Calculate the selling price for each of the bonds. | 1 |
| ii) Siam has Tk 20,000 to invest. Judging on the basis of the price of the bonds, how many of either one could Siam purchase if he were to choose it over the other? | 1 |
| iii) Calculate the yearly interest income of each bond on the basis of its coupon rate and the number of bonds that Siam could buy with his Tk 20,000. | 1 |
| iv) Assume that Siam will reinvest the interest payments as they are paid (at the end of each year) and that his rate of return on the reinvestment is only 10%. For each bond, calculate the value of the principal payment plus the value of Siam's reinvestment account at the end of the 5 years. | 2 |
| v) Why are the two values calculated in part (iv) different? If Siam was worried that he would earn less than the 12% yield to maturity on the reinvested interest payments, which of these two bonds would be a better choice? | 2 |
| b) You own stock in the Goodwill Drug Company. Suppose you had expected the following events to occur last month and following events actually occurred thereafter: | |

Events expected to occur	Events actually occurred
i) The government would announce that real GNP had grown 1.2% during the previous quarter. The returns of Goodwill are positively related to real GNP.	i) The government announced that real GNP grew 2.3 percent during the previous quarter.
ii) The government would announce that inflation over the previous quarter was 3.7%. The returns of Goodwill are negatively related to inflation.	ii) The government announced that inflation over the previous quarter was 3.7 percent.
iii) Interest rates would rise 2.5 percentage points. The returns of Goodwill are negatively related to interest rates.	iii) Interest rates rose 2.1 percentage points.
iv) The president of the firm, considered an asset to the firm, would announce his retirement, effective at the end of six months from the announcement day.	iv) The president of the firm died suddenly of a heart attack.
v) Research data would conclusively prove the efficacy of an experimental drug. Completion of the efficacy testing means the drug will be on the market soon.	v) Research results in the efficacy testing were not as strong as expected, must be tested for another six months, and the efficacy results must be resubmitted to the FDA.
	vi) Lab researchers had a breakthrough with another drug.
	vii) A competitor announced that it will begin distribution and sale of a medicine that will compete directly with one of Goodwill's top-selling products.

Requirement:

Discuss how each of the actual occurrences affects the return on your Goodwill stock.

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- c) You have recently joined a local company as Treasury Manager. During the discussion in the orientation session with the Chairman of the company, he told you “*Despite having profit, our company has been experiencing cash flow difficulties for recent years*”. What are the reasons behind and how can you overcome that? Answer briefly with major points. 3
- d) You were asked by the Finance Director to prepare a brief write-up on the types of dividend policies and the factors that generally influence those dividend policies. Write a memo to respond to his queries. 4

2. a) In Gazipur, there is a long-standing clothing factory called New Fashion. In order to invest in cutting-edge production technologies, the company requires Tk. 250 million. The company has secured Tk. 250 million in 10% irredeemable loan stocks from a local entrepreneur as growth funding. The company's management would wish to provide feedback on the impact this new funding source would have on its finance costs and guidelines on assessing future investments. Following are extracts from New Fashion's most recent Statement of Financial Position that has been publicly released:

**Statement of
Financial Position
Extracts as at 31
December 2022**

Equity Attributable to Equity Holders	Tk. 000's
60,000,000 Ordinary shares @ Tk. 10 each	600,000
8% Preference Shares @ Tk. 100 each	400,000
Other Reserves (Retained Revenue Reserves)	1,600,000
	2,600,000
 Non-Current Liabilities	
10% Debentures (Redeemable 31/12/2024)	250,000

- Ordinary shares are currently trading at Tk. 27.50 per share cum-div.
- The ex-dividend market value of preference shares is Tk. 122.
- A recent board meeting agreed on an ordinary dividend of Tk. 2.50 per share. On 14th February 2023, this dividend will be paid out.
- New Fashion's average annual rate of growth in dividends is projected to be 10% for the foreseeable future.
- Debentures are currently trading at 92% of their par value. Interest on debentures is paid annually. All payments for the fiscal year ending 31/12/2022 have been made in full.
- Preference dividends are paid annually.
- Corporation tax of 25% is charged on profits in the fiscal year in which they are reported.

Requirements:

Develop a short overview for the Board of New Fashion which:

- i) Estimates the company's current weighted average cost of capital. 6
- ii) Calculates the company's revised average cost of capital for the scenario in which the Tk. 250 million irredeemable loan stock is used to finance the proposed investment. 4
- b) Tulip resort is aggressively pursuing an organic growth strategy but is beginning to be somewhat frustrated by the slow pace of growth. It has decided to consider acquisition targets. It has identified a cox's bazar based resort that is willing to discuss a potential takeover if the price of BDT 6 billion (in cash and/or in shares) is met. Tulip Resort's Investment department has confirmed that there are no significant concerns to obstruct the takeover. Tulip's Board of Directors accepts the proposal. The only decision to be made is whether the purchase consideration should be in cash and/or share.

Requirement:

As a Finance Manager, prepare a briefing note for the Board of Tulip Resort outlining the attractions and drawbacks of both cash and share as purchase consideration. 4

3. a) Five wealthy individuals have put Tk.20 million (m) each at your disposal to invest for the next three years. The funds can be invested in one or more of four specified projects and/or in the money market. The projects are not divisible and cannot be postponed. The investors require a minimum return of 24% over the three years.

Details of the possible investments are:

	Initial cost (Tk.m)	Return over three years (%)	Expected standard deviation of returns over three years (%)
Project 1	60	22	7
Project 2	40	26	9
Project 3	60	28	15
Project 4	60	34	13
Money market minimum	10	18	5

Correlation co-efficient of returns (over the three years):

Between Projects		Between Projects and market portfolio	Between Projects and money market
1 and 2	0.70	1 and market 0.68	1 and money market 0.40
1 and 3	0.62	2 and market 0.65	2 and money market 0.45
1 and 4	0.56	3 and market 0.75	3 and money market 0.55
2 and 3	0.65	4 and market 0.88	4 and money market 0.60
2 and 4	0.57		
3 and 4	0.76		

Between the money market and the market portfolio 0.40

The risk-free rate is estimated to be 16%, the market returns 27% and the variance of returns on the market 100% (all for the three-year period).

Requirements:

- i) Justify with workings how Tk.100 million should be invested using:
 - Portfolio theory; 3
 - The Capital Asset Pricing Model (CAPM). 3
- ii) Why Portfolio Theory and CAPM might give different decisions? 2
- iii) When does a stock portfolio only contain systematic risk? 2
- iv) What is 'Limit Order' using share market terminology? 1
- v) Define the term 'Bond-yield-plus premium approach'. 1
- b) How do the Price/Earnings (P/E) ratio and the market/book (M/B) ratio provide an assessment about the firm's return and risk? 2
- c) A UK company is due to receive 500,000 Northland dollars in six months' time for goods exported. The company decides to hedge its currency exposure by using the forward market. The short-term interest rate in the UK is 6% p.a and the equivalent rate in Northland is 7.5%. The spot rate of exchange is 2.5 Northland dollars to the pound.

Requirements:

Assuming that the forward rate of exchange simply reflects the interest differential in the two countries (i.e. it reflects the interest rate parity analysis of forward rates), calculate how much the UK company would earn gain or losses as a result of the hedging transaction if, at the end of the six months, the pound in relation to the Northland dollar, has:

- i) gained 4%; 2
- ii) lost 2%; 2
- iii) remained stable. 2

4. Organic Spices World (OSW), your client, is based in Keraniganj who manufactures organic spices. The spices come in 15 boxes per case. OSW spends Tk. 100 on each box's production, packaging, promotion and other additional costs.

The company recently attended in International Trade Fair where a potential Lebanese client voiced its interest in acquiring 10,000 cases of the spices ahead of the Eid Festival 2023. Assume the date is December 1, 2022. The potential Lebanese client has indicated that it is willing to place an order provided that:

- It is sold at LP 35,000 per case and invoiced in Lebanese Pound (LP), the native currency.
- It can accept extended credit terms as it cannot pay for the produce for six months (until after the produce has been sold).

OSW is eager to consent to the terms set forth by the prospective Lebanese company, seeing as how this transaction would offer a foundation for entry into the Lebanese market. Despite that, the management is concerned about the proposal's possible credit risk and foreign currency risk.

You contacted OSW's bankers about the rates for forward exchange contracts, and you were provided with the following figures:

Forward Rates (Quoted by Bank)

Term	LP/Tk.	
Spot	LP 15	LP 17
Three Month Forward	.70 LP Premium	.80 LP Premium
Six Month Forward	.90 LP Premium	1.00 LP Premium
Ignore taxation and transaction costs.		

Requirements:

Draft a briefing memo with the following recommendations to OSW's management:

- The transaction's estimated profit if the foreign exchange rate risk is hedged with forward exchange contracts. 7
 - Outline three suggestions for OSW to reduce the credit risk in relation to the proposed contract. 3
5. N Ltd is a listed company which is seen as a potential target for acquisition by financial analysts. The value of the company has therefore been a matter of public debate in recent weeks and the following financial information is available:

Year	2018	2019	2020	2021
Profit after tax (Tk.m)	8.5	8.9	9.7	10.1
Total dividends (Tk.m)	5.0	5.2	5.6	6.0

Statement of financial position information for 2021:

	Tk.m	Tk.m
Non-current assets (A)		91.0
Current assets (B):		
Inventory	3.8	
Trade receivables	4.5	8.3
Total assets (A+B)		99.3
Equity finance (C):		
Ordinary shares	20.0	
Reserves	47.2	67.2
Non-current liabilities (D):		
8% bonds		25.0
Current liabilities (E)		7.1
Total liabilities (C+D+E)		99.3

The shares of N Ltd have a nominal (par) value of Tk 0.50 per share and a market value of Tk.4.00 per share. The cost of equity of the company is 9% per year. The business sector of N Ltd has an average price/earnings ratio of 17 times. The 8% bonds are redeemable at nominal (par) value of Tk100 per bond in seven years' time and the before-tax cost of debt of N Ltd is 6% per year. The expected net realizable values of the non-current assets and the inventory are Tk.86.0m and Tk. 4.2m, respectively. In the event of liquidation, only 80% of the trade receivables are expected to be collectible.

Requirements:

- a) Calculate the value of N Ltd using the following methods:
 - i) Market capitalization (equity market value); 2
 - ii) Net asset value (liquidation basis); 3
 - iii) Price/earnings (P/E) ratio method using the business sector average price/earnings (P/E) ratio; 2
 - iv) Dividend growth model using:
 - The average historic dividend growth rate; 2
 - Gordon's growth model. 2
 - b) Suppose N Ltd is financed entirely by issued share capital of 8 million ordinary shares of Tk.10 per share, market value of which is Tk.15 per share. N Ltd recently declared a right issue (1 for 4 of Tk.12 per share) of ordinary shares. Calculate the theoretical ex-right price per share. 2
 - c) Briefly explain the five drivers that influence option value. 5
6. Bangladesh Automobiles Limited has completed R&D on a new CNG run three wheeler which will be eco-friendly and consuming less energy. The Company has already spent Tk. 60,000,000 and is committed to spend a further Tk. 52,500,000 within a few months. Following information are placed to the Board of Directors to take a decision whether the Company will go for producing the new vehicle or not:
- (i) A machine will be needed to purchase immediately amounting Tk. 705,000,000 with a residual value of Tk. 120,000,000 at the end of four years.
 - (ii) Fixed costs of the production of new paint would be Tk. 146,250,000 per year. However, this includes a depreciation charge in respect of the machinery of Tk 11,250,000 per year and a charge allocated to represent a fair share of the fixed costs of the business as a whole of Tk. 37,500,000 per year.
 - (iii) The three wheelers are expected to sell for Tk. 1,500,000 each and the marketing department believes that the business can sell 1,200 vehicles per year over the next four years.
 - (iv) The variable costs of production are Tk. 1,200,000 per vehicle.
 - (v) If the business decides not to produce the vehicle it can sell the patents immediately for Tk. 150,000,000.

The company has a cost of capital of 12%.

Requirements:

- a) Calculate the net present value of producing and selling the new vehicle versus the alternative of selling the patent. 6
- b) Carry out a separate sensitivity analysis to show by how much the following factors would have to change before the proposal to produce and sell the new vehicle has an NPV of zero:
 - i) The initial outlay on the machinery; 1
 - ii) The discount rate; 4
 - iii) The residual value of the machinery; 1
 - iv) The annual net operating cash flows 1
- c) Briefly evaluate your findings in (a) and (b) above 4

---The End---