



CMA DECEMBER, 2018 EXAMINATION
PROFESSIONAL LEVEL-IV
SUBJECT: 401. FINANCIAL MANAGEMENT

Time: Three hours

Full Marks: 100

- ❖ All questions are to be attempted.
- ❖ Show computations, where necessary.
- ❖ Answer must be brief, relevant, neat and clean.
- ❖ Start answering each question from a fresh sheet.

Q. No. 1

- (a) Frustrated Ltd. observes that the sales for the past few years and its profits have been around in the following figures:

	<u>Tk.</u>
Sales	15,00,000
Marginal Cost	<u>5,00,000</u>
Contribution	10,00,000
Fixed Cost	<u>8,00,000</u>
Profit	2,00,000

In preparing the budget for the year 201X, there is uncertainty about several points of importance as under:

- (i) It has submitted offers for two contracts, each to overseas customers.

	<u>Contract A</u>	<u>Contract B</u>
Sales Value (Tk.)	5,00,000	3,00,000

For each of these contracts, the variable costs (including selling & distribution costs) would be 40% of sales value. Total fixed cost would be unaffected by the contracts. The company hopes to win both contracts, but thinks it more likely that it will win contract A but not contract B.

- (ii) A new product is due to be introduced in the year 201X. Expected sales are Tk. 30,000 per month with variable costs 50% of sales and fixed costs Tk. 5,000 per month. The most likely date for the introduction of new product is middle of the year 201X, but could be introduced at the end of fourth month or as late as the end of ninth month.
- (iii) Although it is expected on balance that sales price and costs will not go up, there is a reasonable possibility that variable costs on the current production range will go up by 10%.

Required: Prepare a pessimistic and optimistic budget for the company for the year 201X.

- (b) The following are the financial position of Delta Company Ltd.

Share Capital	Tk. 200,000
10% Preferred share	100,000
20% Debenture	100,000
Reserve & Surplus	100,000
Long Term Loan	50,000
Creditors	100,000
Bank Overdraft	<u>50,000</u>
	<u>700,000</u>

Assets

Plant & Machinery	Tk. 200,000
Land & Building	200,000
Stock	150,000
Debtors	50,000
Cash	<u>100,000</u>
	<u>700,000</u>

Calculate:

(i) Current Ratio (ii) Liquid Ratio (iii) Absolute Liquid Ratio (iv) Current Assets – Owners Equity Ratio (v) Debt-Equity Ratio (vi) Inventory Turnover Ratio (vii) Current Asset to Liquid Asset Ratio (viii) Capital Gearing Ratio.

[Marks: (12+8) = 20]

CMA DECEMBER, 2018 EXAMINATION
PROFESSIONAL LEVEL-IV
SUBJECT: 401. FINANCIAL MANAGEMENT

Q. No. 2

- (a) What effect does each of the following option parameters have on the value of a call option and a put option?
(i) Current stock price; (ii) Exercise price; (iii) Term of maturity; (iv) Risk-free rate; (v) Variability of the stock price.
- (b) What are the various sources through which a company can meet its fund requirements?
- (c) You have been appointed as a financial analyst of a large electronic company. As a financial analyst, you are required to determine the weighted average cost of capital of the company using (i) book value weights and (ii) market value weights. The following information is available for your perusal:

The company's present book value capital structure is:

	Tk.
Preference shares (Tk. 100 per share)	2,00,000
Equity shares (Tk. 10 per share)	10,00,000
Debentures (Tk. 100 per debenture)	8,00,000

All these securities are traded in the capital market. Recent prices are:

Debentures @ Tk. 110 per debenture
Preference shares @ Tk. 120 per share
Equity shares @ Tk. 22 per share

Anticipated external financing opportunities are:

- (i) Tk. 100 per debenture redeemable at par; 10 year-maturity, 13% coupon rate, 4% flotation costs, sale price Tk. 100.
- (ii) Tk. 100 preference share redeemable at par; 10 year-maturity, 14% dividend rate, 5% flotation costs, sale price Tk. 100
- (iii) Equity shares: Tk. 2 per share flotation costs, sale price @ Tk. 22.

In addition, the dividend expected on the equity share at the end of the year is Tk. 2 and the earnings are expected to increase by 7% p.a. The firm has a policy of paying all its earnings in the form of dividends. The corporate tax rate is 50%

[Marks: (5+3+12) = 20]

Q. No. 3

- (a) Karol Kar, Inc. is considering the acquisition of North Star, Inc. North Star is expected to provide Karol Kar with operating cash flows of \$14, \$19, \$20, and \$10 million over the next four years. In addition, the terminal value of all remaining cash flows at the end of Year 4 is estimated at \$18 million. The merger will cost Karol Kar \$41 million which is due now in cash in a single lump sum. If the value of the merger is estimated at \$6.00 per share and Karol Kar has 2,000,000 shares outstanding, what equity discount rate must the firm be using to value this acquisition?

- (b) Trent Transport, a U.S. based company, is considering expanding its operations into a foreign country. The required investment at time = 0 is \$10 million. The firm forecasts total cash inflows of \$4 million per year for two years, \$6 million for the next two years, and then a possible terminal value of \$8 million. In addition, due to political risk factors, Trent believes that there is a 50 percent chance that the gross terminal value will be only \$2 million and that there is a 50 percent chance that it will be \$8 million. However, the government of the host country will block 20 percent of all cash flows. Thus, cash flows that can be repatriated are 80 percent of those projected. Trent's cost of capital is 15 percent, but it adds one percentage point to all foreign projects to account for exchange rate risk. Under these conditions, what is the project's NPV?

CMA DECEMBER, 2018 EXAMINATION
 PROFESSIONAL LEVEL-IV
 SUBJECT: 401. FINANCIAL MANAGEMENT

Q. No. 3 (cont'd...)

- (c) An analyst is interested in using the Black-Scholes model to value call options on the stock of Ledbetter Inc. The analyst has accumulated the following information:

The price of the stock is \$40.

The strike price is \$40.

The option matures in 3 months ($t = 0.25$).

The standard deviation of the stock's returns is 0.40 and the variance is 0.16.

The risk-free rate is 12 percent.

Given this information, the analyst is then able to calculate some other necessary components of the Black-Scholes model:

$d_1 = 0.25$.

$d_2 = 0.05$.

$N(d_1) = 0.5987$.

$N(d_2) = 0.5199$.

$N(d_1)$ and $N(d_2)$ represent areas under a standard normal distribution function. Using the Black-Scholes model, what is the value of the call option?

[Marks: (7+8+5) = 20]

Q. No. 4

- (a) A consultant has collected the following information regarding Young Publishing:

Total assets	\$3,000 million	Tax rate	40%
Operating income (EBIT)	\$800 million	Debt ratio	0%
Interest expense	\$0 million	WACC	10%
Net income	\$480 million	M/B ratio	1.00
Share price	\$32.00	EPS = DPS	\$3.20

The company has no growth opportunities ($g = 0$), so the company pays out all of its earnings as dividends (EPS = DPS). Young's stock price can be calculated by simply dividing earnings per share by the required return on equity capital, which currently equals the WACC because the company has no debt.

The consultant believes that the company would be much better off if it were to change its capital structure to 40 percent debt and 60 percent equity. After meeting with investment bankers, the consultant concludes that the company could issue \$1,200 million of debt at a before-tax cost of 7 percent, leaving the company with interest expense of \$84 million. The \$1,200 million raised from the debt issue would be used to repurchase stock at \$32 per share. The repurchase will have no effect on the firm's EBIT; however, after the repurchase, the cost of equity will increase to 11 percent. If the firm follows the consultant's advice, what will be its estimated stock price after the capital structure change?

- (b) Currently, the Fotopoulos Corporation's balance sheet is as follows:

Assets	\$5 billion	Debt	\$1 billion
		Common equity	4 billion
Total assets	\$5 billion	Total debt & common equity	\$5 billion

The book value of the company (both debt and common equity) equals its market value (both debt and common equity). Furthermore, the company has determined the following information:

CMA DECEMBER, 2018 EXAMINATION
PROFESSIONAL LEVEL-IV
SUBJECT: 401. FINANCIAL MANAGEMENT

Q. No. 4 (cont'd...)

- The company estimates that its before-tax cost of debt is 7.5 percent.
- The company estimates that its levered beta is 1.1.
- The risk-free rate is 5 percent.
- The market risk premium, $k_M - k_{RF}$, is 6 percent.
- The company's tax rate is 40 percent.

In addition, the Fotopoulos Corporation is considering a recapitalization. The proposed plan is to issue \$1 billion worth of debt and to use the money to repurchase \$1 billion worth of common stock. As a result of this recapitalization, the firm's size will not change.

- (i) What is Fotopoulos' current WACC (before the proposed recapitalization)?
- (ii) What is Fotopoulos' current unlevered beta (before the proposed recapitalization)?
- (iii) What will be the company's new cost of common equity if it proceeds with the recapitalization? (Hint: Be sure that the beta you use is carried out to 4 decimal places.)

[Marks: (10+10) = 20]

Q. No. 5

- (a) Flavortech Inc. expects EBIT of \$2,000,000 for the coming year. The firm's capital structure consists of 40 percent debt and 60 percent equity, and its marginal tax rate is 40 percent. The cost of equity is 14 percent, and the company pays a 10 percent interest rate on its \$5,000,000 of long-term debt. One million shares of common stock are outstanding. In its next capital budgeting cycle, the firm expects to fund one large positive NPV project costing \$1,200,000, and it will fund this project in accordance with its target capital structure. Assume that new debt will also have an interest rate of 10 percent. If the firm follows a residual dividend policy and has no other projects, what is its expected dividend payout ratio?
- (b) You have been asked to use a CAPM analysis to choose between Stocks R and S, with your choice being the one whose expected rate of return exceeds its required rate of return by the widest margin. The risk-free rate is 6 percent, and the required return on an average stock (or "the market") is 10 percent. Your security analyst tells you that Stock S's expected rate of return, \hat{k}_S , is equal to 11 percent, while Stock R's expected rate of return, \hat{k}_R , is equal to 12 percent. The CAPM is assumed to be a valid method for selecting stocks, but the expected return for any given investor (such as you) can differ from the required rate of return for a given stock. The following past rates of return are to be used to calculate the two stocks' beta coefficients, which are then to be used to determine the stocks' required rates of return:

Year	Stock R	Stock S	Market
1	-15%	0%	-5%
2	5	5	5
3	25	10	15

Note: The averages of the historical returns are not needed, and they are generally not equal to the expected future returns.

- (i) Calculate both stocks' betas. What is the difference between the betas? That is, what is the value of $\beta_R - \beta_S$? (Hint: The graphical method of calculating the rise over run, or $(Y_2 - Y_1)$ divided by $(X_2 - X_1)$ may aid you.)
- (ii) Set up the SML equation and use it to calculate both stocks' required rates of return, and compare those required returns with the expected returns given above. You should invest in the stock whose expected return exceeds its required return by the widest margin. What is the widest margin, or greatest excess return $(\hat{k} - k)$?

[Marks: (8+12) = 20]

= THE END =