

DIPLOMA IN ISLAMIC BANKING
MANAGEMENT ACCOUNTING & FINANCIAL ACCT.
SOLUTION: EXAM - MAY - 2023

1) (b)

Contribution Margin (CM) = Sales - Variable Cost

$$\text{Contribution Margin (CM)} \quad \text{Alif Ltd.} \\ \text{TK. } (150,000 - 120,000) \\ = 30,000 \text{ TK.}$$

$$\text{Mim Ltd.} \\ \text{TK. } (150,000 - 100,000) \\ = 50,000 \text{ TK.}$$

$$\text{Contribution Margin Ratio (Ratio)} = 30,000 / 150,000 \\ = (\text{Contribution Margin} / \text{Sales}) = 0.20$$

$$= 50,000 / 150,000 \\ = 0.3333$$

$$(i) \text{ Break-even Point of Sales} = \text{Fixed Cost} / \text{CM Ratio} \\ = 15,000 / 0.20 \\ = \text{TK. } 75,000$$

$$= 35,000 / 0.3333 \\ = \text{TK. } 105,010$$

$$\text{Margin of Safety} = (\text{Sales} - \text{BE Sales}) \\ = (150,000 - 75,000) \\ = \text{TK. } 75,000$$

$$= 150,000 - 105,010 \\ = \text{TK. } 44,990$$

(ii) Volume of Revenue to earn profit of TK. 50,000 = $\frac{\text{Fixed Cost} + \text{Desired Profit}}{\text{CM Ratio}}$

$$\text{Alif Ltd.} \\ \text{Volume of revenue to earn profit of TK. 50,000} = (15,000 + 50,000) / 0.20 \\ = \text{TK. } 325,000$$

$$\text{Mim Ltd.} \\ = (35,000 + 50,000) / 0.3333 \\ = \text{TK. } 255,025$$

(iii) Considering contribution margin and fixed cost unchanged, Mim Ltd. will likely to earn greater profit in conditions of heavy demand as its contribution margin is higher compared with Alif Ltd. In case of heavy demand, fixed cost remained unchanged, Mim Ltd will cover the fixed cost quickly compared with Alif Ltd. and will generate higher profit. On the contrary, all other things remained unchanged, Alif Ltd. will likely to earn greater profit in the condition of low demand as Alif Ltd. has low fixed cost compared to Mim Ltd. As such Alif Ltd. will likely to cover the fixed cost earlier compared with Mim Ltd. and will likely to generate greater profit.

2 (b)

Safa Manufacturing
Statement of Cashflow (Indirect Method)
For the Year Ended 31 December 2022

Tk.

A. Cashflow from Operating Activities:

Net income	450,000
Add: Depreciation	125,000
Add: Decrease in Receivable $(350,000 - 281,250)$	68,750
Less: Increase in Inventory $(150,000 - 125,000)$	(25,000)
Less: Decrease in Payable $(300,000 - 237,500)$	(62,500)
Less: Gain in Sale of Equipment	(50,000)
Net Cashflow Operating Activities -	<u>506,250</u>

B. Cashflow from ^{Investing} ~~Financing~~ Activities:

Sale of Equipment	175,000
(-) Purchase during the period	(137,500)
(-) Purchase of land $(718,750 - 500,000)$	(218,750)
Net cashflow from Investing Activities	<u>(181,250)</u>

C. Cashflow from Financing Activities:

Issuance of Mortgage	250,000
Dividend paid during the period	(225,000)
Net cashflow from financing activities	<u>25,000</u>
Net cash $(A+B+C)$	<u><u>350,000</u></u>

3(b) We are given,

Earning Before Interest and Tax (EBIT)	TK. 179,200
Less: Interest on 16% Bond (16% of TK. 120,000)	(19,200)
Earning Before Tax (EBT)	TK. 160,000
Less: Tax @ 40% on EBT (40% of 160,000)	TK. 64,000
Net Profit after tax →	TK. 96,000

$$(i) \text{ Return on Equity (ROE)} = \frac{\text{Net profit after Tax}}{\text{Shareholders Equity}}$$

$$\begin{aligned} \text{Shareholders Equity} &= (\text{Common Stock} + \text{Share Premium} + \text{Retained Earnings}) \\ &= (420,000 + 240,000 + 180,000) \\ &= 840,000 \end{aligned}$$
$$\begin{aligned} \text{ROE} &= \frac{96,000}{840,000} = 0.1143 = 11.43\% \\ (ii) \text{ Time Interest Earned Ratio} &= \frac{\text{EBIT}}{\text{Interest Expenses}} \\ &= \frac{179,200}{19,200} = 9.33 \text{ times} \end{aligned}$$

$$\begin{aligned} (iii) \text{ Earning Per share (EPS)} &= \frac{\text{Net profit After Tax}}{\text{No of outstanding shares}} \\ &= \frac{96,000}{16,800} = \text{TK. } 5.71/\text{share} \end{aligned}$$

$$\begin{aligned} (iv) \text{ Price-Earning Ratio (P/E Ratio)} &= \frac{\text{Market Price per share}}{\text{Earnings per share}} \\ \text{Market price/share} &= \text{TK. } 35 \\ &= \frac{35}{5.71} = 6.13 \text{ times} \end{aligned}$$

$$\begin{aligned} (v) \text{ Book Value/share} &= \frac{\text{Shareholders Equity}}{\text{No. of outstanding shares}} \\ &= \frac{840,000}{16,800} \\ &= \text{TK. } 50/\text{share} \end{aligned}$$

5 (b) We are given,

Cost of Vehicle = Tk. 45,00,000

Client's Equity 30% of cost = 13,50,000

HPSM Investment Tk. 31,50,000

No of Years (n) = 7
Rate of Return (i) = 9% per annum
Installment yearly at the end of each year

We know,

$$PVA = PMT (PVIFA_{i\%, n \text{ year}})$$

Where PVA = Present Value of Annuity which is the HPSM investment
PMT = Periodic Payment or Installment

$$\Rightarrow 31,50,000 = PMT (PVIFA_{9\%, 7 \text{ year}})$$

$$\Rightarrow 31,50,000 = PMT \times 5.0330 \quad [\text{From PVIFA Table}]$$

$$\Rightarrow PMT = 31,50,000 / 5.0330 = \underline{\underline{Tk. 625,869}}$$

Thus Installment size will be Tk. 625,869

(c) i) We are given, Deposit Amount = Tk. 10,000
Propositional Rate of profit (i) = 6.50% (3 month MTD), 6.75% (6 month MTD) and 6.85% (12 month MTD)

Period (n) = 3 years

$$\begin{aligned} \text{Now, } FV_3 (3 \text{ month MTD}) &= PV_0 [1 + (i/m)]^{mn} \\ &= 10,000 [1 + 0.065/4]^{4 \times 3} \\ &= \underline{\underline{Tk. 12,134}} \end{aligned}$$

FV_3 = Future Value after 3 years
Here m = No of compounding in a year = 4

$$\begin{aligned} FV_3 (6 \text{ month MTD}) &= PV_0 [1 + i/m]^{mn} \\ &= 10,000 [1 + 0.0675/2]^{2 \times 3} \\ &= \underline{\underline{Tk. 12,203}} \end{aligned}$$

Here m = 2

$$\begin{aligned} FV_3 (12 \text{ month MTD}) &= 10,000 [1 + 0.0685/1]^{3 \times 1} \\ &= \underline{\underline{Tk. 12,199}} \end{aligned}$$

Here m = 1 since yearly compounding

$$(ii) \text{ Effective Annual Interest Rate (EAIR)} = [1 + i/m]^m - 1$$

$$\text{Now, } EAIR (3 \text{ month MTD}) = [1 + 0.065/4]^4 - 1 = 6.66\%$$

$$EAIR (6 \text{ month MTD}) = [1 + 0.0675/2]^2 - 1 = 6.86\%$$

$$EAIR (12 \text{ month MTD}) = [1 + 0.0685/1]^1 - 1 = 6.85\%$$

From the above calculation we see that 6 month MTD's EAIR is higher among all the alternatives Thus we should go for plan-2 i.e deposit in 6 month MTD.

7 (b) We are given.

Cost of Machine = Tk. 500,000

Expected Life of Machine = 5 years

Salvage Value = Tk 50,000, Cost of Capital = 15%, Tax Rate = 50%

$$\text{Calculation of depreciation of machine/year} = \frac{\text{Cost of Machine} - \text{Salvage Value}}{\text{No of years of machine}}$$

$$= \frac{\text{Tk}(500,000 - 50,000)}{5}$$

$$= \text{Tk} 90,000 / \text{year}$$

Year (1)	Cash flow before Tax and dep (2)	Depreciation (3)	EBT (4)	Tax @ 50% (5 = 4-5)	EAT (6 = 4-5)	Net Cash Benefit (7 = 6+3)	Cumulative cash flow (8)	PNF 15% (9)	PV of NCB (10 = 7 x 9)
1	200,000	90,000	110,000	55,000	55,000	145,000	145,000	0.8696	126,092
2	200,000	90,000	110,000	55,000	55,000	145,000	290,000	0.7561	109,635
3	250,000	90,000	160,000	80,000	80,000	170,000	460,000	0.6575	111,775
4	225,000	90,000	135,000	67,500	67,500	157,500	617,500	0.5718	90,059
5	150,000	90,000	60,000	30,000	30,000	120,000	737,500	0.4972	59,664
5	50,000 (SV)	-	-	-	-	-	-	0.4972	24,860

$$\begin{aligned} \text{NPV of NCB} & 522,085 \\ \text{Less: Cash outflow} & 500,000 \\ \hline \text{NPV} & \text{Tk. } 22,085 \end{aligned}$$

(i) Payback Period = Full years Until Recovery + $\frac{\text{Uncovered cost at the begining of recovery period}}{\text{Cashflow during recovery period}}$

$$= 3 + \frac{(500,000 - 460,000)}{157,500} \text{ years}$$

$$= 3 + 0.2539 \text{ years} = 3.25 \text{ years or 3 years 3 months (app)}$$

(ii) Using the NPV method of capital budgeting technique as calculated above, we can say that it will be wise to purchase the machine as it has positive NPV of Tk. 22085.

8(b) We are given.

Ordinary share = Tk. 80,00,000.

10% Preference share = Tk. 20,00,000

14% Debenture = Tk. 60,00,000

Share price = Tk. 20/share, Dividend of next year (D_1) = Tk. 2/share

Growth rate = 5%, Tax Rate = 40%.

$$\text{Now, Cost of Common Stock}(K_e) = \frac{D_1}{\text{Share price}} + \text{Growth Rate} \quad \left| \begin{array}{l} \text{Considering} \\ \text{Dividend Growth} \\ \text{Model} \end{array} \right.$$

$$= \frac{2}{20} + 0.05$$

$$= 0.15 \text{ or } 15\%$$

Cost of Preference Share = 10% = 0.10

$$\text{Cost of debt/debenture}(D_e) = D_c(1 - \text{Tax Rate}) \quad \left| \begin{array}{l} \text{Here } D_c = \text{Original} \\ \text{cost of debenture} \end{array} \right.$$

$$= 0.14(1 - 0.40) = 0.084 \text{ or } 8.40\%$$

(i) Weighted Average Cost of Capital:

Particulars(1)	Amount(2)	Weight(3)	Cost(4)	Weighted Cost(5) = 3x4
Ordinary share	80,00,000	0.50	0.15	0.0750
10% Preference Share	20,00,000	0.125	0.10	0.0125
14% Debenture	60,00,000	0.375	0.084	0.0315
	160,00,000	1.00		WACC = 0.119 or 11.90%

(ii) Cost of Addition Debt (D_s) = 0.15(1 - 0.40) = 0.09 = 9%

$$\text{Revised Cost of Common Stock}(K_{er}) = \frac{D_1}{\text{Share Price}} + G$$

$$= \frac{3}{15} + 0.05$$

$$= 0.25 \text{ or } 25\%$$

Here $D_1 = 3$ Tk.
Share Price = 15 Tk
 $G = 5\%$ (Unchanged)

Now, revised Weighted Average Cost of Capital:

Particulars(1)	Amount(2)	Weight(3)	Cost(4)	Weighted Cost(5) = 3x4
Ordinary share	80,00,000	0.40	0.25	0.1000
10% Preference Share	20,00,000	0.10	0.10	0.0100
14% Debenture	60,00,000	0.30	0.084	0.0252
Subordinated Bond	40,00,000	0.20	0.090	0.0180
	200,00,000	1.00		WACC = 0.1532 = 15.32%