FINANCIAL MANAGEMENT

July-August 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) A US company is planning to set up a subsidiary company in Bangladesh. The initial project cost (consisting of Plant and Machinery including installation) is estimated to be US$ 750 million. The net working capital requirements are estimated at US$ 75 million. The company follows straight line method of depreciation. Presently, the company is exporting three million units every year to Bangladesh at a unit price of US$ 120, its variable cost per unit being US$ 60.

The Chief Financial Officer has estimated the following operating cost and other data in respect of proposed project:

- Variable operating cost will be US $ 30 per unit of production;
- Additional cash fixed cost will be US $ 45 million p.a. and project's share of allocated fixed cost will be US $ 4.5 million p.a. based on principle of ability to share;
- Production capacity of the proposed project in Bangladesh will be 7.5 million units;
- Expected useful life of the proposed plant is five years with no salvage value; Existing working capital investment for production & sale of three million units through exports was US $ 22.5 million;
- Export of the product in the coming year will decrease to 2.25 million units in case the company does not open subsidiary company in Bangladesh, in view of the presence of competing MNCs that are in the process of setting up their subsidiaries in Bangladesh;
- Applicable Corporate Income Tax rate is 25%, and
- Required rate of return for such project is 12%.

Requirement:

CALCULATE the Net Present Value (NPV) of the proposed project assuming that: 12

- ❖ there will be no variation in the exchange rate of two currencies; and
- ❖ all profits will be repatriated, as there will be no withholding tax. Present Value Interest Factors (PVIF) @ 12% for five years is as below:

Year	1	2	3	4	5
PVIF	0.8929	0.7972	0.7118	0.6355	0.5674

b) Fossil Fuel Ltd. has six project investment opportunities in the pipeline. The estimated cash flows (BDT Million) of the identified projects are as follows. Assume all projects will cease in 2025.

Projects	2022	2023	2024	2025
AA	(84)	(24)	72	84
AB	(96)	48	54	60
AC	(60)	42	48	54
BA	(84)	48	60	72
BB	(72)	(60)	90	60
BC	(90)	(48)	120	84

Notes:

(1) Cost of capital of the firm is 12%, (2) Size of any project could be adjusted to the availability of funds, (3) Capital available for the investment in 2022 is BDT 360 million only (4) No residual value, (5) Ignore income tax.

Requirements:

i) Determine the projects that should be undertaken by the company if the capital available for investment in 2022 is limited to BDT 360 million, and no such limitation in subsequent years. 5

ii) If the projects are indivisible instead of adjusting the available funds given in Note 2 i.e. projects have to be accepted in their entirety or not at all, explain strategies available to improve the outcome of the fund availability. 2

c) Plant Ltd. is considering making an offer to purchase Palmer Crop. Plant's vice president of finance has collected the following information:

	Plant	Palmer
Price earnings ratio	15	10
Shares outstanding	1,500,000	750,000
Earnings Tk	4,200,000	960,000
Dividends Tk	1,050,000	470,000

Requirements:

Plant also knows that securities analysts expect the earnings and dividends of Palmer to grow at a constant rate of 4 percent each year. Plant management believes that the acquisition of Palmer will provide the firm with some economies of scale that will increase this growth rate to 6 percent per year.

i) What is the value of Palmer to Plant? 3

ii) What would Plant's gain be from this acquisition? 2

iii) If Plant were to offer Tk. 20 in each share of Palmer, what would the NPV of the acquisition be? 2

iv) What is the most Plant should be willing to pay in cash per share for the stock of Palmer? 2

v) If Plant were to offer 225,000 of its shares in exchange for the outstanding stock of Palmer, what would the NPV be? 3

vi) Should the acquisition be attempted? If so, should it be as in (c) or as in (e)? 1

vii) Plant's outside financial consultants think that the 6 percent growth rate is too optimistic, and a 5 percent rate is more realistic. How does this change your previous answers? 3

2. a) A Bangladeshi company has today invoiced sales to a Japanese company in Yen, payment being due 2 months from the date of invoice. The invoice amount is ¥ 30,000,000, and today's spot rate between BDT and Yen is BDT/¥ 1.4185 -1.4905. It is expected that Yen will be stronger by about 6% over the 2-month period, and in order to safeguard the BDT proceeds from the sale, the company is interested in taking appropriate action either through the foreign exchange market or the money market.

The 2-month borrowing rate for Japanese Yen is 7.5% whereas the 2-month deposit rate quoted by the company's banker for BDT is 12%. The BDT/¥ two-month forward exchange rate is quoted at 1.3755-1.4475.

Requirements:

i) Evaluate the two alternative courses of action available to the company, and advise the company as to which course of action should be followed. 7

ii) "Currency risk emerges in three different forms linked to three different exposures a firm could face due to direct or indirect business operations across national boundaries that involve foreign currencies". 3

Explain Three different forms of currency risks arising out of three different exposures.

b) Your client J Limited expects to win a tender for a contract to supply tables for South African schools. The tender will be for the supply of 40,000 tables in three months time and a further 60,000 tables in nine months time. The tender price was quoted at 750 South African Rand (ZAR) per table. If J Limited wins the tender, the South African schools department will pay for the tables in South African Rand three months after the receipt of each batch of tables.

J Limited has sourced the tables in Australia. If they are successful in winning the tender their Australian supplier will charge $100 (Australian) per table. All tables will be dispatched

directly to South Africa. The Australian supplier has agreed that full payment (for all tables) will be made by J Limited in 12 month's time.

You have researched the relevant exchange rate information which is summarised in the following table:

Exchange Rates	**ZAR/€**		**Aus $/€**	
Spot	**12.5**	**13**	**1.9**	**1.95**
3 Month Forward	30 cent premium	32 cent premium	10 cent premium	15 cent premium
6 Month Forward	40 cent premium	44 cent premium	12 cent premium	16 cent premium
9 Month Forward	60 cent premium	68 cent premium	14 cent premium	18 cent premium
12 Month Forward	80 cent premium	90 cent premium	18 cent premium	20 cent premium

Your bank has quoted the following standardised currency options rates;

Option Type	Exercise Price	6 Month Premium	9 Month Premium	12 Month Premium	Contract Size
ZAR Put	12	0.25	0.4	0.55	500,000 ZAR
Aus $ Call	2	0.4	0.6	0.8	100,000 Aus $

Each premium is quoted in €s per 100 units of the relevant foreign currency.

Requirements:

i) If J Limited is successful in winning the tender, advise on the profit it will secure if the foreign exchange risk is hedged using the forward exchange market. 4

ii) Determine the profit on the contract if the foreign currency transaction risk relating to all potential transactions is hedged using standardised currency options. 4

3. Giant Auto Corporation manufactures automobiles, vans, and trucks. Among the various Giant Auto plants around the Toni Gazipur is the Denver Cover Plant. Coverings made primarily of vinyl and upholstery fabric are sewn at the Denver Cover Plant and used to cover interior seating and other surfaces of Giant Auto products.

Rahath is the plant manager for Denver Cover. The Denver Cover Plant was the first Giant Auto plant in the region. As other area plants were opened, Rahath, in recognition of his management ability, was given responsibility for managing them. Rahath functions as a regional manager, although the budget for him and his staff is charged to the Denver Cover Plant.

Rahath has just received a report indicating that Giant Auto could purchase the entire annual output of Denver Cover from outside suppliers for Tk. 35 million. Rahath was astonished at the low outside price because the budget for Denver Cover's operating costs for the coming year was set at Tk.52 million. Rahath believes that Giant Auto will have to close operations at Denver Cover in order to realize the Tk. 22 million in annual cost savings.

The budget for Denver Cover's operating costs for the coming year is presented below. Additional facts regarding the plant's operations are as follows:

- Due to Denver Cover's commitment to use high-quality fabrics in all its products, the Purchasing Department was instructed to place blanket purchase orders with major suppliers to ensure the receipt of sufficient materials for the coming year. If these orders are canceled as a consequence of the plant closing, termination charges would amount to 20% of the cost of direct materials.
- Approximately 800 plant employees will lose their jobs if the plant is closed. This includes all of the direct laborers and supervisors as well as the plumbers, electricians, and other skilled workers classified as indirect plant workers. Some would be able to find new Jobs while many others would have difficulty. All employees would have difficulty matching Denver Cover's base pay of Tk9.40 per hour, which is the highest in the area, A clause in Denver Cover's contract with the union may help some employees; the company must provide employment assistance to its former employees for 12 months after a plant closing. The estimated cost to administer this service would be Tk1.5 million for the year.
- Some employees would probably choose early retirement because Giant Auto has an excellent pension plan. In fact, Tk. 3 million of the annual pension expense would continue whether Denver Cover is open or not.

- ❖ Rahath and his staff would not be affected by the closing of Denver Cover. They would still be responsible for administering three other area plants
- ❖ Denver Cover considers equipment depreciation to be a variable cost and uses the units-of-production method to depreciate its equipment; Denver Cover is the only Giant Auto plant to use this depreciation method. However, Denver Cover uses the customary straight-line method to depreciate its building.

DENVER COVER PLANT
Annual Budget for Operating Costs

Materials		Tk. 14,000,000
Labor:		
Direct	Tk. 13,100,000	
Supervision	900,000	
Indirect plant	4,000,000	18,000,000
Overhead:		
Depreciation – equipment	3,200,000	
Depreciation – building	7,000,000	
Pension expense	5,000,000	
Plant manager and staff	800,000	
Corporate allocation	4,000,000	20,000,000
Total budgeted costs		**Tk. 52,000,000**

Requirements:

a) Without regard to costs, identify the advantages to Giant Auto Corporation of continuing to obtain covers from its own Denver Cover Plant. 1

b) Giant Auto Corporation plans to prepare a financial analysis that will be used in deciding whether to close the Denver Cover Plant. Management has asked you to identify.

i) The annual budgeted costs that are relevant to the decision regarding closing the plant (show the Taka amounts). 3

ii) The annual budgeted costs that are not relevant to the decision regarding closing the plant and explain why they are not relevant (again show the Taka amounts). 3

iii) Any nonrecurring costs that would arise due to the closing of the plant and explain how they would affect the decision (again show any Taka amounts). 2

c) Looking at the data you have prepared in (b) above, should the plant be closed? Show computations and explain your answer. 1

d) Identify any revenues or costs not specifically mentioned in the problem that Giant Auto should consider before making a decision. 2

4. a) Micromax, a computer components company, is considering the introduction of an early settlement discount for its customers. The company's current credit terms are 30 days net and on average customers settle within this period. The marketing manager considers that to introduce a cash discount would increase the company's sales and market share.

Micromax is considering offering a cash discount of 2 per cent for payment within 10 days. Credit sales are currently found Tk 15m and the marketing team has estimated that these would increase by 5 per cent if a 2 per cent discount was offered. Variable costs are estimated at 60 per cent of sales.

Marketing surveys indicate that 70 percent of customers would avail themselves of the discount. It is estimated that the average collection period would be reduced to 20 days and bad debts would also be reduced from 2 per cent to 1.5 per cent of sales. The company's opportunity cost of capital is currently 15 per cent.

Requirement:

Determine if the proposal is worthwhile and values enhancing, so to assess the effect on the company's existing profits and cash flows by comparing the estimated incremental income with the estimated incremental costs. 9

b) Assume that it is now January 1, 20x5, and you will need Tk. 1,000 on January 1, 20x9. Your bank compounds interest at an 8% annual rate.

i) How much must you deposit on January 1, 20x6, to have a balance of Tk. 1,000 on January 1, 20x9? 1

ii) If you want to make equal payments on each January 1 from 20x6 through 20x9 to accumulate the Tk. 1,000, how large must each of the four payments be? 2

iii) If your father were to offer either to make the payments calculated in part (ii) or to give you a lump sum of Tk. 750 on January 1, 20x6, which would you choose? 2

iv) If you have only Tk. 750 on January 1, 20x6, what interest rate, compounded annually, would you have to earn to have the necessary Tk. 1,000 on January 1, 20x9. 1

v) Suppose you can deposit only Tk. 186.29 each January 1 from 20x6 through 20x9, but you still need Tk. 10,000 on January 1, 20x9. What interest rate, with annual compounding, must you seek out to achieve your goal? 2

vi) To help you reach your Tk. 1,000 goal, your father offers to give you Tk. 400 on January 1, 20x6. You will get a part-time job and make six additional payments of equal amounts each six months thereafter. If all of this money is deposited in a bank that pays 8%, compounded semiannually, how large must each of the six payments be? 2

5. a) Under what two assumptions can we use the dividend growth model to determine the value of a share of stock? Comment on the reasonableness of these assumption. 6

b) Components Manufacturing Corporation (CMC) has an all-common-equity capital structure. It has 200,000 shares of Tk. 2 par value common stock outstanding. When CMC's founder, who was also its research director and most successful inventor, retired unexpectedly to the South Pacific in late 2020, CMC was left suddenly and permanently with materially lower growth expectations and relatively few attractive new investment opportunities. Unfortunately, there was no way to replace the founder's contributions to the firm. Previously, CMC found it necessary to plow back most of its earnings to finance growth, which averaged 12% per year. Future growth at a 5% rate is considered realistic, but that level would call for an increase in the dividend payout. Further, it now appears that new investment projects with at least the 14% rate of return required by CMC's stockholders (kg = 14%) would amount to only Tk 800,000 for 2021 in comparison to a projected Tk. 2,000,000 of net income. If the existing 20% dividend payout were continued, retained earnings would be Tk. 1.6 million in 2021, but as noted, investments that yield the 14% cost of capital would amount to only Tk. 800,000.

The one encouraging factor is that the high earnings from existing assets are expected to continue, and net income of Tk. 2mn is still expected for 2021. Given the dramatically changed circumstances, CMC's management is reviewing the firm's dividend policy.

Requirements:

i) Assuming that the acceptable 2021 investment projects would be financed entirely by earnings retained during the year, calculate DPS in 2021 if CMC follows the residual dividend policy. 2

ii) What payout ratio does your answer to part (i) imply for 2021? 2

iii) If a 60 percent payout ratio is maintained for the foreseeable future, what is your estimate of the present market price of the common stock? How does this compare with the market price that should have prevailed under the assumptions existing just before the news about the founder's retirement? If the two values of Po are different, comment on why. 3

iv) What would happen to the price of the stock if the old 20 percent payout were continued? Assume that if this payout is maintained, the average rate of return on the retained earnings will fall to 7.5% and the new growth rate will be 6%. 3

---The End---