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Total No. of Questions—6] [Total No. of Printed Pages—8

Time Allowed—3 Hours MAFA Maximum Marks—100

GVK

Answers to questions are to be given only in English except in the case of candidates who have opted for Hindi medium. If a candidate who has not opted for Hindi medium, answers in Hindi, his answers in Hindi will not be valued.

Question No. 1 is compulsory. Answer any **four** questions from the rest. Figures in the margin indicate marks allotted to each question.

Working notes should form part of the answer.

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1. The Mayfair Rubber Industry Ltd. (MRIL) manufactures small rubber components for the local market. It is presently using 8 machines which were acquired 3 years ago at a cost of Rs. 18 lakh each having a useful life of 8 years with no salvage value. The policy of the company is to depreciate all machines in 5 years. Their production capacity is 37 lakh units while the annual demand is 30 lakh units. The MRIL has received an order from a leading automobile company of Singapore for the supply of 20 lakh rubber bushes at Rs. 15 per unit. The existing machines can be sold @ Rs. 12 lakh per machine. It is estimated that the removal cost of each machine would be Rs. 60,000. In order to meet the increased demand, the MRIL can acquire 3 new machines at an estimated cost of Rs. 100 lakh each which will have a combined production capacity of 52 lakh units. 20

The operating parameters of the existing machines are as follows :

(i) Labour requirements (Unskilled–18; Skilled–18; Supervisor–3; and Maintenance–2) and their per month salaries are Rs. 3,500; Rs. 5,500; Rs. 6,500 and Rs. 5,000 each respectively with an increase of 10 per cent to adjust inflation.

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(ii) Raw materials cost, inclusive of wastage is 60 per cent of revenues.

(iii) Maintenance cost—years 1-5 (Rs. 22.5 lakh), and years 6-8 (Rs. 67.5 lakh).

(iv) Operating expenses—Rs. 52.10 lakh expected to increase annually by 5 percent.

(v) Insurance cost/premium—year 1, 2 percent of the original cost of the machine, afterwards discounted by 10 percent.

(vi) Selling Price—Rs. 15 per unit.

The projected operating parameters with the replacement by the new machines are as follows :

(i) Additional working capital—Rs. 50 lakh.

(ii) Savings in cost of utilities—Rs. 2.5 lakh.

(iii) Maintenance cost—years 1-2 (Rs. 7.5 lakh); years 3-5 (Rs. 37.5 lakh).

(iv) Raw materials cost—55 percent of sales.

(v) Employee requirement (6 skilled at monthly salary of Rs. 7,000 each and one for maintenance at monthly salary of Rs. 6,500).

(vi) Laying off cost of 34 workers—(Unskilled–18; Skilled–12; Supervisors–3; and maintenance–1) Rs. 9,21,000, that is equivalent to six months salary.

(vii) Insurance cost/premium-2 percent of the Purchase cost of machine in the first year and discounted by 10 percent in subsequent years.

(viii) Life of machines— 5 years and salvage value— Rs. 10 lakh per machine.

The company follows straight line method of depreciation and the same is accepted for tax purposes. Corporate tax rate is 35 percent and the cost of capital is 20 percent.

As the Finance Manager of MRIL, prepare a report for submission to the top management with your recommendations about the financial viability of the replacement of the existing machines.

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2. (a) BA Ltd. and DA Ltd. both the companies operate in the same industry. The Financial statements of both the companies for the current financial year are as follows : 12

Balance Sheet

Particulars	BA Ltd.	DA Ltd.
	Rs.	Rs.
Current Assets	14,00,000	10,00,000
Fixed Assets (Net)	10,00,000	5,00,000
Total (Rs.)	24,00,000	15,00,000
Equity capital (Rs. 10 each)	10,00,000	8,00,000
Retained earnings	2,00,000	—
14% long-term debt	5,00,000	3,00,000
Current liabilities	7,00,000	4,00,000
Total (Rs.)	24,00,000	15,00,000

Income Statement

	BA Ltd.	DA Ltd.
	Rs.	Rs.
Net sales	34,50,000	17,00,000
Cost of Goods sold	27,60,000	13,60,000
Gross profit	6,90,000	3,40,000
Operating expenses	2,00,000	1,00,000
Interest	70,000	42,000
Earning before taxes	4,20,000	1,98,000
Taxes @ 50%	2,10,000	99,000
Earning after taxes (EAT)	2,10,000	99,000
Additional information :		
No. of Equity shares	1,00,000	80,000
Dividend payment ratio (D/P)	40%	60%
Market price per share	Rs. 40	Rs. 15

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Assume that both companies are in the process of negotiating a merger through an exchange of equity shares. You have been asked to assist in establishing equitable exchange terms and are required to :

(i) Decompose the share price of both the companies into EPS and P/E components; and also segregate their EPS figures into Return on Equity (ROE) and book value/intrinsic value per share components.

(ii) Estimate future EPS growth rates for each company.

(iii) Based on expected operating synergies BA Ltd. estimates that the intrinsic value of DA's equity share would be Rs. 20 per share on its acquisition. You are required to develop a range of justifiable equity share exchange ratios that can be offered by BA Ltd. to the shareholders of DA Ltd. Based on your analysis in part (i) and (ii), would you expect the negotiated terms to be closer to the upper, or the lower exchange ratio limits and why ?

(iv) Calculate the post-merger EPS based on an exchange ratio of 0.4 : 1 being offered by BA Ltd. Indicate the immediate EPS accretion or dilution, if any, that will occur for each group of shareholders.

(v) Based on a 0.4 : 1 exchange ratio and assuming that BA Ltd.'s pre-merger P/E ratio will continue after the merger, estimate the post-merger market price. Also show the resulting accretion or dilution in pre-merger market prices.

(b) T Ltd. has promoted an open-ended equity oriented scheme in 1999 with two plans—Dividend Reinvestment Plan (Plan-A) and a Bonus Plan (Plan-B); the face value of the units was Rs. 10 each. X and Y invested Rs. 5,00,000 each on 1.4.2001 respectively in Plan-A and Plan-B, when the NAV was Rs. 42.18 8

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for Plan A and Rs. 35.02 for Plan-B. X and Y both redeemed their units on 31.3.2008. Particulars of dividend and bonus declared on the units over the period were as follows :

Date	Dividend	Bonus	NAV	
		Ratio	Plan A	Plan B
15.9.2001	15	—	46.45	29.10
28.7.2002	—	1 : 6	42.18	30.05
31.3.2003	20	—	48.10	34.95
31.10.2003	—	1 : 8	49.60	36.00
15.3.2004	18	—	52.05	37.00
24.3.2005	—	1 : 11	53.05	38.10
27.3.2006	16	—	54.10	38.40
28.2.2007	12	1 : 12	55.20	39.10
31.3.2008	—	—	50.10	34.10

You are required to calculate the annual return for X and Y after taking into consideration the following information :

(i) Securities transaction tax @ 2% on redemption.

(ii) Liability of capital gains to income tax

(a) Long-term capital gain-exempt; and

(b) Short-term capital gains at 10% plus education cess at 3%.

3. (a) Sun Ltd. in planning to import an equipment from Japan at a cost of 3,400 lakh yen. The company may avail loans at 18 percent per annum with quarterly rests with which it can import the equipment. The company has also an offer from Osaka branch of an India based bank extending credit of 180 days at 2 percent per annum against opening of an irrecoverable letter of credit. 6

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Additional information :

Present exchange rate — Rs. 100 = 340 yen

180 day's forward rate — Rs. 100 = 345 yen

Commission charges for letter of credit at 2 percent per 12 months.

Advise the company whether the offer from the foreign branch should be accepted.

(b) Mr. A is interested to invest Rs. 1,00,000 in the securities market. He selected two securities B and D for this purpose. The risk return profile of these securities are as follows : 6

Security	Risk (σ)	Expected Return (ER)
B	10%	12%
D	18%	20%

Co-efficient of correlation between B and D is 0.15.

You are required to calculate the portfolio risk and portfolio return of the following portfolios of B and D to be considered by A for his investment.

(i) 100 percent investment in B only;

(ii) 50 percent of the fund invested in B and D both;

(iii) 75 percent of the fund in B and the rest 25 percent in D;

(iv) 25 percent of the fund in B and the rest 75 percent in D; and

(v) 100 percent investment in D only.

Also indicate that which portfolio is best for him from risk as well as return point of view ?

(c) Write short notes on the following : 4×2=8

(i) Global Depository Receipts

(ii) Interest Rate Swaps.

Marks

4. (a) XYZ Ltd. requires an equipment costing Rs. 10,00,000; the same will be utilised over a period of 5 years. It has two financing options in this regard : 8

(i) Arrangement of a loan of Rs. 10,00,000 at an interest rate of 13 percent per annum; the loan being repayable in 5 equal year end instalments; the equipment can be sold at the end of fifth year for Rs. 1,00,000.

(ii) Leasing the equipment for a period of five years at an yearly rental of Rs. 3,30,000 payable at the year end.

The rate of depreciation is 15 percent on Written Down Value (WDV) basis, income tax rate is 35 percent and discount rate is 12 percent.

Advise the XYZ Ltd. that which of the financing options is to be exercised and why.

(b) ABC Ltd. has been maintaining a growth rate of 10 percent in dividends. The company has paid dividend @ Rs. 3 per share. The rate of return on market portfolio is 12 percent and the risk free rate of return in the market has been observed as 8 percent. The Beta co-efficient of company's share is 1.5. 6

You are required to calculate the expected rate of return on company's shares as per CAPM model and equilibrium price per share by dividend growth model.

(c) What do you mean by 'Financial Engineering' ? State its significance in the present regime of globalisation. 6

5. (a) Followings are the spot exchange rates quoted at three different forex markets : 6

USD/INR	48.30 in Mumbai
GBP/INR	77.52 in London
GBP/USD	1.6231 in New York

The arbitrageur has USD 1,00,00,000. Assuming that there are no transaction costs, explain whether there is any arbitrage gain possible from the quoted spot exchange rates.

Marks

(b) MSN Ltd. has total sales of Rs. 4.50 crores and its average collection period is 120 days. The past experience indicates that bad debt losses are 2 percent on sales. The expenditure incurred by the company in administering its receivable collection efforts are Rs. 6,00,000. A Factor is prepared to buy the company's receivables by charging 2 percent commission. The factor will pay advance on receivables to the company at an interest rate of 18 per cent per annum after withholding 10 percent as reserve. 8

You are required to calculate effective cost of factoring to the company.

(c) Discuss the main features of green-field privatisation. 6

6. (a) Calculate the price of 3 months PQR futures, if PQR (FV Rs. 10) quotes Rs. 220 on NSE and the three months future price quotes at Rs. 230 and the one month borrowing rate is given as 15 percent and the expected annual dividend yield is 25 percent per annum payable before expiry. Also examine arbitrage opportunities. 5

(b) Based on the credit rating of bonds, Mr. Z has decided to apply the following discount rates for valuing bonds : 5

Credit Rating	Discount Rate
AAA	364 day T bill rate + 3% spread
AA	AAA + 2% spread
A	AAA + 3% spread

He is considering to invest in AA rated, Rs. 1,000 face value bond currently selling at Rs. 1,025.86. The bond has five years to maturity and the coupon rate on the bond is 15% p.a. payable annually. The next interest payment is due one year from today and the bond is redeemable at par. (Assume the 364 day T-bill rate to be 9%).

You are required to calculate the intrinsic value of the bond for Mr. Z. Should he invest in the bond ? Also calculate the current yield and the Yield To Maturity (YTM) of the bond.

(c) Discuss the Capital Asset Pricing Model (CAPM) and its relevant assumptions. 5

(d) Distinguish between Forward and Futures contract. 5