Sreeram Coaching Point
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Management Accounting & Financial Analysis
Model Paper for November 2007.
Question 6 is compulsory and answer any four of the remaining

Question No. 1

(a) Growmore Fertilizers Limited is considering a capital project requiring an outlay of Rs 15 million. It is expected to generate a net cash inflow of Rs 3.75 million for 6 years. The opportunity cost of capital is 18 per cent. Growmore Fertilizers can raise a term loan of Rs 10 million for the project. The term loan will carry an interest rate of 16 per cent and would be repayable in 5 equal annual instalments, the first installment falling due at the end of the second year.

The balance amount required for the project can be raised by issuing equity. The issue cost is expected to be 8 per cent. The tax rate for the company is 50 per cent.

(i) What is the base case NPV?

(ii) What is adjusted net present value?

Question No. 1

(b) A new polishing machine is required. The polishing machine forms a part of the production process and most products manufactured required polishing at various stages in their production. A polishing facility is expected to be required for as long as the factory remains in operation and no closure can be anticipated.

Details of the two machines under consideration are:

Machine	A	B
Initial Cost	Rs.50,000	Rs.90,000
Life-Years	4	7
Salvage value at end of		
4 years	Rs.5000	-
7 years	-	Rs.7000
Annual running costs	Rs.10000	Rs.8000

Both machines fulfil the same function and have equal capacities. The appropriate discount rate is 10%. Taxation may be ignored.

Required:

Determine which machine should be purchased. Specify any assumptions made. To what amount would the initial cost of Machine A be required to alter in order that the two machines were then of equal financial attractiveness?

Question No: 2

(a) A company has received three proposals from leasing companies for the acquisition of an asset on lease costing Rs.1,50,000.

Option I:
The terms of offer envisaged payment of rentals for 96 months. During the first 72 months the lease rental were to be paid @ Rs.30 p.m. per Rs.1,000 and during the remaining 24 months @ Rs.5 p.m. per Rs.1,000 on the expiry of lease period, the lessor has offered to sale the assets at 5% of the original cost.

Option II:
Another offer envisaged lease agreement for a period of 72 months during which lease rentals were to be paid as follows:

Your lease rentals per Rs.1,000 p.m.

Years	1	2	3	4	5	6
(Rs.)	35	30	26	24	22	20

At end of lease period the asset is proposed to be abandoned.

Option III:
Under this offer a lease agreement is proposed to be signed for a period of 60 months wherein a initial lease deposit to the extent of 15% will be made at the time of signing of agreement. Lease rentals @ Rs.35 per Rs.1,000 per month will have to be paid for period of 60 months on the expiry of leasing agreement, the assets shall be sold against the initial deposit and the asset is expected to last for a further period of three years.

You are required to evaluate the proposals keeping in view the following parameters.

(i) Depreciation @ 25%

(ii) Discounting rate @ 15%

(iii) Tax rate applicable @ 40%

The monthly and yearly discounting factors @ 15% discount rate are as follows:

Year/Month	Monthly discounting Discounting factor	Yearly discounting Discounting factor
1	0.923	0.869
2	0.795	0.756
3	0.685	0.658
4	0.590	0.572
5	0.509	0.497
6	0.438	0.432
7	0.377	0.376
8	0.325	0.327
9	0.280	0.284
10	0.241	0.247
11	0.208	0.215
12	0.179	0.187

Question No: 2

(b) A firm has an investment proposal, requiring an outlay of Rs.40,000. The investment proposal is expected to have 2 years economic life with no salvage value. In year 1 there is a 0.4 probability that cash inflow after tax will be Rs.25,000 and 0.6 probability that cash inflow after tax will be Rs.30,000. The probabilities assigned to cash inflow after tax for the year II are as follows:

Cash Inflow Year I	Rs.25,000		Rs.30,000	
Cash Inflow Year II		Probability		Probability
	Rs.12,000	0.2	Rs.20,000	0.4

	Rs.16,000	0.3	Rs.25,000	0.5
	Rs.22,000	0.5	Rs.30,000	0.1

The firm uses a 10% discount rate for this type of investment.

Required:

1) Construct a decision tree for the proposed investment project.

2) What net present value will be project yield if worst outcome is realized? What is the probability of occurrence of this NPV?

3) What will be the best and the probability of that occurrence?

4) Will the project be accepted? (10% discount factor 1 year 0.909 and 2 year 0.826)

Question No: 2

(c) A zero coupon bond of Rs.10000 has a term to maturity of 8 years and a market yield of 10% at the time of issue.

a. What is the issue price of the bond?

b. What is the duration of the bond?

c. What is the modified duration of the bond?

d. What will be the percentage change in price of the bond if the yield declines by 0.5 % points.(50 basis points).

Question No: 3

(a) Find out the value of European Call from the following information:

(i)	Strike price	Rs. 100
(ii)	Spot	100
(iii)	Dividend	Nil
(iv)	Rf	8%
(v)	Volatility	20%
(vi)	Tenure	91 days

Question No: 3

(b) Suppose dividend is to be paid by 31 days at Rs. 3, do you exercise in case of American Call?

Question No: 3

(c) Suppose you bought an index call option for Rs. 5.50 with a strike price of 1000 and that at expiration, you exercised it. Also suppose that at the time you exercised the call option, the index value is 1040.

(i) How much the writer pay you if the contract multiplier is 200.

(ii) What profit did you realize from buying this call Option?

Question No: 4

(a) Bettaluck Ltd. has been enjoying a substantial net cash inflow, and until the surplus funds are needed to meet tax and dividend payments, and to finance further capital expenditure in several months time, they have been invested in a small portfolio of short-term equity investments.

Details of the portfolio, which consists of shares in four UK listed companies, are as follows.

Company	Number of shares held	Beta equity co-efficient	Market price per share	Latest Dividend Yield %	Expected on equity in next year %
Dashing Ltd.	60000	1.16	Rs. 4.29	6.10	19.50
Elegant Ltd.	80000	2.28	Rs. 2.92	3.40	24.00
Fantastic Ltd.	100000	0.90	Rs. 2.17	5.70	17.50
Gaudy Ltd.	125000	1.50	Rs. 3.14	3.30	23. 00

The current market return is 19% a year and the Treasury bill yield is 11% a year.

Required:

(a) On the basis of the data given, calculate the risk of Bettaluck Ltd.'s short term investment portfolio relative to that of the market.

(b) Recommend, with reasons, whether Bettaluck Ltd. should change the composition of its portfolio.

Question No: 4

(b) Consider the following performance information on three portfolios:

	Treynor Tp	Sharpe Sp	Jensen Jp
Portfolio A	-4.0	-.5	-5.0
Portfolio B	8.0	1.2	3.0
Portfolio C	4.0	.3	0
XYZ Index	5.0	.6	0

(a) Rank each of the portfolios using each of the performance measures. Are the rankings consistent for the three techniques?

(b) Compare each portfolio's performance to the market's performance. Are the comparisons consistent for the three techniques?

Question No: 4

(c) Delphi Products Corporation currently pays a dividend of Rs. 2 per share and this dividend is expected to grow at a 15% annual rate for 3 years, then at a 10% rate for the next 3 years, after which it is expected to grow at a 5% rate for ever.

What value would you place on the stock if an 18% rate of return were required?

Would your valuation change if you expected to hold the stock only 3 years?

Question No: 5

(a) Following are the financial statement for A Ltd. and B Ltd. for the current financial year. Both firms operate in the same industry.

	Balance Sheet	
	A Ltd.	B Ltd.
Total current assets	Rs.14,00,000	Rs.10,00,000
Total fixed assets (net)	10,00,000	5,00,000
Total Assets	24,00,000	15,00,000

Equity capital (of Rs.10 each)	10,00,000	8,00,000
Retained earnings	2,00,000	-
14% Long term debt	5,00,000	3,00,000
Total current liabilities	7,00,000	4,00,000
	24,00,000	15,00,000

	Income Statements	
	A Ltd.	**B Ltd.**
Net sales	Rs.34,50,000	Rs.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
Earnings 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:		
Number of equity shares	1,00,000	80,000
Dividend payment ratio	40%	60%
Market price per share (MPS)	Rs.40	Rs.15

Assume that the two firms 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 prices of both the firms into EPS and PE components, and also segregate their EPS figures into return on equity (ROE) and book value / intrinsic value per share (BVPS) components

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

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

(iv) Based on a 0.4 : 1 exchange ratio, and assuming that A's pre-merger PE ratio will continue after the merger, estimate the post - merger market price. Show the resulting accretion or dilution in pre - merger market prices.

(b) The turnover of R Ltd. is Rs.60 Lakhs of which 80% is on credit. Debtors are allowed one month to clear off the dues. A factor is willing to advance 90% of the bills raised on credit for a fee of 2% a month plus a commission of 4% on the total amount of debts. R Ltd. as a result of this arrangement is likely to save Rs.21,600 annually in management costs and avoid bad debts at 1% on the credit sales.

A scheduled bank has come forward to make an advance equal to 90% of the debts at an interest rate of 18% p.a. However, its processing fee will be at 2% on the debts. Would you accept factoring or the offer from the bank?

(c) S Ltd. has equity of Rs.6 Lacs issued at par. The following additional information is provided:

- Sales to net worth ratio is 5
- Growth rate in sales for the next year is 25%.
- Long-term loans are 1.5 times the retained earnings

- Outstanding creditors are half of long-term loans.
- Short-term bank borrowings are equal to outstanding creditors.
- Current assets are Rs.12 Lacs.
- Fixed assets to current assets ratio is 1:2.
- Dividend payout is twice the growth rate in sales.
- Profit margin is 40% of growth rate in sales.
- You are required to construct the Balance Sheet and project the external funds requirement

Question No: 6

Write short notes on the following

(a) MM model of irrelevance of dividend in the price of shares.

(b) Debt/Asset securitisation

(c) Merchant Banker

(d) ADR & GDR

(e) Book Building