

PAPER – 2 : STRATEGIC FINANCIAL MANAGEMENT

Question No.1 is compulsory.

Answer any five questions from the remaining six questions.

Working notes should form part of the answer.

Question 1

- (a) Orange purchased 200 units of Oxygen Mutual Fund at ₹ 45 per unit on 31st December, 2009. In 2010, he received ₹ 1.00 as dividend per unit and a capital gains distribution of ₹ 2 per unit.

Required:

- (i) Calculate the return for the period of one year assuming that the NAV as on 31st December 2010 was ₹ 48 per unit.
- (ii) Calculate the return for the period of one year assuming that the NAV as on 31st December 2010 was ₹ 48 per unit and all dividends and capital gains distributions have been reinvested at an average price of ₹ 46.00 per unit.

Ignore taxation.

(5 Marks)

- (b) An importer is due to pay the exporter on 28th January 2010, Singapore Dollars of 25,00,000 under an irrevocable letter of credit. It directed the bank to pay the amount on the due date.

Due to go-slow and strike procedures adopted by its staff, the bank was not in a position to remit the amount due. The amount was actually remitted on 4th February 2010.

On the transaction, the bank wants to retain an exchange margin of 0.125 per cent.

The following were the rates prevalent in the exchange market on the relevant dates:

	28 th January	4 th February
Rupee/US\$1	₹ 45.85/45.90	₹ 45.91/45.97
London Pound/Dollars	\$1.7840/1.7850	\$1.7765/1.775
Pound	Sing \$ 3.1575/3.1590	Sing \$ 3.1380/3.1390

What is the effect on account of the delay in remittance? Calculate rate in multiples of .0001.

(5 Marks)

- (c) A company has a book value per share of ₹137.80. Its return on equity is 15% and follows a policy of retaining 60 percent of its annual earnings. If the opportunity cost of capital is 18 percent, what is the price of its share?[adopt the perpetual growth model to arrive at your solution].
- (d) The six months forward price of a security is ₹ 208.18. The rate of borrowing is 8 percent per annum payable at monthly rates. What will be the spot price?

(5 Marks)

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Answer

(a) (i) Returns for the year

(All changes on a Per -Unit Basis)

Change in Price:	$\text{₹}48 - \text{₹}45 =$	$\text{₹} 3.00$
Dividends received:		$\text{₹} 1.00$
Capital gains distribution		<u>$\text{₹} 2.00$</u>
Total reward		<u>$\text{₹} 6.00$</u>

Holding period reward: $\frac{\text{₹} 6.00}{\text{₹} 45} \cdot 100 = 13.33\%$

(ii) When all dividends and capital gains distributions are re-invested into additional units of the fund @ (₹ 46/unit)

Dividend + Capital Gains per unit

$$= \text{₹} 1.00 + \text{₹} 2.00 = \text{₹} 3.00$$

Total received from 200 units = $\text{₹} 3.00 \times 200 = \text{₹} 600/-$.

Additional Units Acquired

$$= \text{₹} 600 / \text{₹} 46 = 13.04 \text{ Units.}$$

Total No.of Units_ = 200 units + 13.04 units

$$= 213.04 \text{ units.}$$

Value of 213.04 units held at the end of the year

$$= 213.04 \text{ units} \times \text{₹}48 = \text{₹} 10225.92$$

Price Paid for 200 Units at the beginning of the year

$$= 200 \text{ units} \times \text{₹} 45 = \text{₹} 9000.00$$

Holding Period Reward

$$\text{₹} (10225.92 - 9000.00) = \text{₹} 1225.92$$

Holding Period Reward = $\frac{\text{₹} 1225.92}{\text{₹} 9000} \cdot 100 = 13.62\%$

(b) On January 28, 2010 the importer customer requested to remit SGD 25 lakhs.

To consider sell rate for the bank:

US \$ = ₹ 45.90

Pound 1 = US\$ 1.7850

Pound 1 = SGD 3.1575

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FINAL EXAMINATION : NOVEMBER, 2011

$$\begin{aligned} \text{Therefore, SGD 1} &= \frac{\text{₹ } 45.90 \times 1.7850}{\text{SGD } 3.1575} \\ \text{SGD 1} &= \text{₹ } 25.9482 \\ \text{Add: Exchange margin (0.125\%)} &\quad \text{₹ } 0.0324 \\ &\quad \underline{\text{₹ } 25.9806} \end{aligned}$$

On February 4, 2010 the rates are

$$\begin{aligned} \text{US \$} &= \text{₹ } 45.97 \\ \text{Pound 1} &= \text{US\$ } 1.7775 \\ \text{Pound 1} &= \text{SGD } 3.1380 \end{aligned}$$

$$\text{Therefore, SGD 1} = \frac{\text{₹ } 45.97 \times 1.7775}{\text{SGD } 3.1380}$$

$$\begin{aligned} \text{SGD 1} &= \text{₹ } 26.0394 \\ \text{Add: Exchange margin (0.125\%)} &\quad \text{₹ } 0.0325 \\ &\quad \underline{\text{₹ } 26.0719} \end{aligned}$$

Thus, impact of strike on importer

$$\begin{aligned} &= \text{SGD } 25,00,000 (\text{₹}26.0719 - \text{₹}25.9806) \\ &= \text{₹ } 2,28,250 \text{ (Loss)} \end{aligned}$$

(c) The company earnings and dividend per share after a year are expected to be:

$$\text{EPS} = \text{₹ } 137.80 \times 0.15 = \text{₹ } 20.67$$

$$\text{Dividend} = 0.40 \times 20.67 = \text{₹ } 8.27$$

The growth in dividend would be:

$$g = 0.6 \times 0.15 = 0.09$$

$$\text{Perpetual growth model Formula: } P_0 = \frac{\text{Dividend}}{K_e - g}$$

$$P_0 = \frac{8.27}{0.18 - 0.09}$$

$$P_0 = \text{₹ } 91.89$$

(d) Calculation of spot price

The formula for calculating forward price is:

$$A = P (1+r/n)^{nt}$$

Where A = Forward price

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P = Spot Price
 r = rate of interest
 n = no. of compounding
 t = time

Using the above formula,
 $208.18 = P (1 + 0.08/12)^6$
 Or $208.18 = P \times 1.0409$
 $P = 208.18/1.0409 = 200$

Hence, the spot price should be ₹ 200.

Question 2

(a) Using the chop-shop approach (or Break-up value approach), assign a value for Cranberry Ltd. whose stock is currently trading at a total market price of €4 million. For Cranberry Ltd, the accounting data set forth three business segments: consumer wholesale, retail and general centers. Data for the firm's three segments are as follows:

Business Segment	Segment Sales	Segment Assets	Segment Operating Income
Wholesale	€225,000	€600,000	€75,000
Retail	€720,000	€500,000	€150,000
General	€ 2,500,000	€4,000,000	€700,000

Industry data for "pure-play" firms have been compiled and are summarized as follows:

Business Segment	Capitalization/Sales	Capitalization/Assets	Capitalization/Operating Income
Wholesale	0.85	0.7	9
Retail	1.2	0.7	8
General	0.8	0.7	4

(8 Marks)

(b) Nitrogen Ltd, a UK company is in the process of negotiating an order amounting to €4 million with a large German retailer on 6 months credit. If successful, this will be the first time that Nitrogen Ltd has exported goods into the highly competitive German market. The following three alternatives are being considered for managing the transaction risk before the order is finalized.

- (i) Invoice the German firm in Sterling using the current exchange rate to calculate the invoice amount.
- (ii) Alternative of invoicing the German firm in € and using a forward foreign exchange contract to hedge the transaction risk.

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(iii) Invoice the German first in € and use sufficient 6 months sterling future contracts (to the nearly whole number) to hedge the transaction risk.

Following data is available:

Spot Rate	€ 1.1750 - €1.1770/£
6 months forward premium	0.60-0.55 Euro Cents
6 months further contract is currently trading at	€1.1760/£
6 months future contract size is	£62500
Spot rate and 6 months future rate	€1.1785/£

Required:

- (a) Calculate to the nearest £ the receipt for Nitrogen Ltd, under each of the three proposals. (4 Marks)
- (b) In your opinion, which alternative would you consider to be the most appropriate and the reason thereof. (4 Marks)

Answer

(a)

Business Segment	Capital-to- Sales	Segment Sales	Theoretical Values
Wholesale	0.85	€225000	€191250
Retail	1.2	€720000	€864000
General	0.8	€2500000	<u>€2000000</u>
Total value			<u>€3055250</u>

Business Segment	Capital-to- Assets	Segment Assets	Theoretical Values
Wholesale	0.7	€600000	€420000
Retail	0.7	€500000	€350000
General	0.7	€4000000	<u>€2800000</u>
Total value			<u>€3570000</u>

Business Segment	Capital-to- Operating Income	Operating Income	Theoretical Values
Wholesale	9	€75000	€675000
Retail	8	€150000	€1200000
General	4	€700000	<u>€2800000</u>
Total value			<u>€4675000</u>

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$$\text{Average theoretical value} = \frac{3055250 + 3570000 + 4675000}{3} = 3766750$$

Average theoretical value of Cranberry Ltd. = €3766750

(b) (i) Receipt under three proposals

(a) Invoicing in Sterling

$$\text{Invoicing in } \text{£} \text{ will produce} = \frac{\text{€ 4 million}}{1.1770} = \text{£}3398471$$

(b) Use of Forward Contract

$$\text{Forward Rate} = \text{€}1.1770 + 0.0055 = 1.1825$$

$$\text{Using Forward Market hedge Sterling receipt would be} = \frac{\text{€ 4 million}}{1.1825} = \text{£} 3382664$$

(c) Use of Future Contract

The equivalent sterling of the order placed based on future price (€1.1760)

$$= \frac{\text{€}4.00\text{million}}{1.1760} = \text{£} 3401360$$

$$\text{Number of Contracts} = \frac{\text{£}3401360}{62,500} = 54 \text{ Contracts (to the nearest whole number)}$$

Thus, € amount hedged by future contract will be = 54 × £62,500 = £3375000

Buy Future at €1.1760

Sell Future at €1.1785

€0.0025

Total profit on Future Contracts = 54 × £62,500 × €0.0025 = €8438

After 6 months

Amount Received €4000000

Add: Profit on Future Contracts € 8438

€ 4008438

Sterling Receipts

$$\text{On sale of } \text{€} \text{ at spot} = \frac{\text{€}4008438}{1.1785} = \text{€}3401305$$

(ii) Proposal of option (c) is preferable because the option (a) & (b) produces least receipts.

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Alternative solution:

Assuming that 6 month forward premium is considered as discount, because generally premium is mentioned in ascending order and discount is mentioned in descending order.

(i) Receipt under three proposals

(a) Invoicing in Sterling

$$\text{Invoicing in } \text{£} \text{ will produce} = \frac{\text{€ 4 million}}{1.1770} = \text{£}3398471$$

(b) Use of Forward Contract

$$\text{Forward Rate} = \text{€}1.1770 - 0.0055 = 1.1715$$

$$\text{Using Forward Market hedge Sterling receipt would be} \frac{\text{€ 4 million}}{1.1715} = \text{£} 3414426$$

(c) Use of Future Contract

The equivalent sterling of the order placed based on future price (€1.1760)

$$= \frac{\text{€}4.00\text{million}}{1.1760} = \text{£} 3401360$$

$$\text{Number of Contracts} = \frac{\text{£}3401360}{62,500} = 54 \text{ Contracts (to the nearest whole number)}$$

$$\text{Thus, € amount hedged by future contract will be} = 54 \times \text{£}62,500 = \text{£}3375000$$

Buy Future at	€1.1760
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Sell Future at	€1.1785
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	€0.0025
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$$\text{Total profit on Future Contracts} = 54 \times \text{£}62,500 \times \text{€}0.0025 = \text{€}8438$$

After 6 months

Amount Received	€4000000
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Add: Profit on Future Contracts	€ <u>8438</u>
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	€ <u>4008438</u>
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Sterling Receipts

$$\text{On sale of € at spot} = \frac{\text{€}4008438}{1.1785} = \text{€}3401305$$

(ii) Proposal of option (b) is preferable because the option (a) & (c) produces least receipts.

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Question 3

- (a) Helium Ltd has evolved a new sales strategy for the next 4 years. The following information is given:

Income Statement	₹ in thousands
Sales	40,000
Gross Margin at 30%	12,000
Accounting, administration and distribution expense at 15%	6,000
Profit before tax	6,000
Tax at 30%	1,800
Profit after tax	4,200
Balance sheet information	
Fixed Assets	10,000
Current Assets	6,000
Equity	15,000

As per the new strategy, sales will grow at 30 percent per year for the next four years. The gross margin ratio will increase to 35 percent. The Assets turnover ratio and income tax rate will remain unchanged.

Depreciation is to be at 15 percent on the value of the net fixed assets at the beginning of the year.

Company's target rate of return is 14%.

Determine if the strategy is financially viable giving detailed workings. (10 Marks)

- (b) Pineapple Ltd has issued fully convertible 12 percent debentures of ₹ 5,000 face value, convertible into 10 equity shares. The current market price of the debentures is ₹ 5,400. The present market price of equity shares is ₹ 430.

Calculate:

- (i) the conversion percentage premium, and (3 Marks)
 (ii) the conversion value (3 Marks)

Answers

- (a) Solution if candidates have assumed that if the Equity amount is 16000 instead of 15000.

Projected Balance Sheet

	(In ₹ Thousands)				
Year	1	2	3	4	5
Fixed Assets (25% of sales)	13000.00	16900.00	21970.00	28561.00	28561.00
Current Assets (12.5% of sales)	6500.00	8450.00	10985.00	14280.50	14280.50

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Total Assets	19500.00	25350.00	32955.00	42841.50	42841.50
Equity and Reserves	19500.00	25350.00	32955.00	42841.50	42841.50

Projected Cash Flows

	(In ₹ Thousands)				
Sales (30% yoy)	52000.00	67600.00	87880.00	114244.00	114244.00
PBT 15%	7800.00	10140.00	13182.00	17136.60	17136.60
PAT 70%	5460.00	7098.00	9227.40	11995.62	11995.62
Depreciation 15%	1500.00	1950.00	2535.00	3295.50	4284.15
Addition to Fixed Assets	4500.00	5850.00	7605.00	9886.50	4284.15
Increase in Current Assets	1500.00	1950.00	2535.00	3295.50	0
Operating Cash Flow	960.00	1248.00	1622.40	2109.12	11995.62
Present value factor @ 14%	0.877	0.769	0.675	0.592	0.519
Present value of cash flows @ 14%	841.92	959.71	1095.12	1248.60	6225.73

(In ₹ Thousands)

Total for first 4 years (A)	4145.35
Residual value (6225.73/0.14)	44469.50
Present value of Residual value [44469.50/(1.14) ⁴] (B)	26329.51
Total Shareholders value (C) = (A) +(B)	30474.86
Pre strategy value (4200/0.14) (D)	30000.00
Value of strategy (C) – (D)	474.86

Conclusion: The strategy is financially viable

Alternative Solution

If candidates have assumed that if the Equity amount is 16000 instead of 15000.

Projected Balance Sheet

	(In ₹ Thousands)				
Year	1	2	3	4	5
Fixed Assets (25% of sales)	13000.00	16900.00	21970.00	28561.00	28561.00
Current Assets (15% of sales)	7800.00	10140.00	13182.00	17136.60	17136.60
Total Assets	20800.00	27040.00	35152.00	45697.60	45697.60
Current Liability	1300.00	1690.00	2197.00	2856.10	2856.10
Equity and Reserves	19500.00	25350.00	32955.00	42841.50	42841.50

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	(In ₹ Thousands)				
Sales (30% yoy)	52000.00	67600.00	87880.00	114244.00	114244.00
PBT 15%	7800.00	10140.00	13182.00	17136.60	17136.60
PAT 70%	5460.00	7098.00	9227.40	11995.62	11995.62
Depreciation 15%	1500.00	1950.00	2535.00	3295.50	4284.15
Addition to Fixed Assets	4500.00	5850.00	7605.00	9886.50	4284.15
Increase in Current Assets	1500.00	2340.00	3042.00	3954.60	0
Operating Cash Flow	960.00	858.00	1115.40	1450.02	11995.62
Present value factor @ 14%	0.877	0.769	0.675	0.592	0.519
Present value of cash flows @14%	841.92	659.80	752.90	858.41	6225.73

(In ₹ Thousands)

Total for first 4 years (A)	3113.03
Residual value (6225.73/0.14)	44469.50
Present value of Residual value [44469.50/(1.14) ⁴] (B)	26329.51
Total Shareholders value (C) = (A) +(B)	29442.54
Pre strategy value (4200/0.14) (D)	30000.00
Value of strategy (C) – (D)	-557.46

Conclusion: The strategy is financially not viable

- (b) (i) As per the conversion terms 1 Debenture = 10 equity share and since face value of one debenture is ₹ 5000 the value of equity share becomes ₹ 500 (5000/10).

The conversion terms can also be expressed as: 1 Debenture of ₹ 500 = 1 equity share.

The cost of buying ₹ 500 debenture (one equity share) is:

$$₹ 500 \times \frac{5400}{5000} = ₹ 540$$

Market Price of share is ₹ 430. Hence conversion premium in percentage is:

$$\frac{540 - 430}{430} \times 100 = 25.58\%$$

- (ii) The *conversion value* can be calculated as follows:

$$\begin{aligned} \text{Conversion value} &= \text{Conversion ratio} \times \text{Market Price of Equity Shares} \\ &= 10 \times ₹ 430 = ₹ 4300 \end{aligned}$$

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Question 4

- (a) Based on the credit rating of the bonds, A has decided to apply the following discount rates for valuing bonds:

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 a AA rated ₹ 1,000 face value bond currently selling at ₹ 1,025.86. The bond has five years to maturity and the coupon rate on the bond is 15 percent per annum 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 percent).

You are required to :

- (i) Calculate the intrinsic value of the bond for A. Should he invest in the bond?
- (ii) Calculate the Current Yield (CY) and the Yield to Maturity (YTM) of the bond.

(8 Marks)

- (b) XYZ Ltd. is considering to acquire an additional computer to supplement its time-share computer services to its clients. It has two options:

- (i) To purchase the computer for ₹ 22,00,000
- (ii) To lease the computer for three years from a leasing company for ₹ 5,00,000 as annual lease rent plus 10 percent of gross time-share service revenue. The agreement also requires an additional payment of ₹ 6,00,000 at the end of the third year. Lease rent is payable at the year end, and the computer reverts to the lessor after the contract period.

The company estimates that the computer under review now will be worth ₹ 10,00,000 at the end of third year. Forecast revenues are:

Year	₹
1	22,50,000
2	25,00,000
3	27,50,000

Annual operating costs (excluding depreciation/lease rent of computer) are estimated at ₹ 9,00,000 with an additional ₹ 1,00,000 for start-up and training cost at the beginning of the first year. These costs are to be borne by the lessee. XYZ Ltd. will borrow at 16% interest to finance acquisition of computer; repayments are to be made according to the following schedule:

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Year-end	Principal (₹)	Interest (₹)	Total (₹)
1	5,00,000	3,52,000	8,52,000
2	8,50,000	2,72,000	11,22,000
3	8,50,000	1,36,000	9,86,000

The company uses straight line method to depreciate its assets and pays 50 percent tax on its income.

The management of XYZ Ltd. approaches you for advice. Which alternative would you recommend and why? (8 Marks)

Answer

(a) The appropriate discount rate for valuing the bond for A is:

$$R = 9\% + 3\% + 2\% = 14\%$$

Time	CF	PVIF 14% PV (CF)	PV (CF) (₹)
1	150	0.877	131.55
2	150	0.769	115.35
3	150	0.675	101.25
4	150	0.592	88.80
5	1150	0.519	596.85
			P ₀ = 1033.80

Since, the current market value is less than the intrinsic value; A should buy the bond.
Current yield = Annual Interest / Price = ₹ 150 / ₹ 1025.86 = 14.62%

The YTM of the bond is calculated as follows:

At 15%

$$P = ₹ 150 \times PVIFA_{15\%, 4} + ₹ 1150 \times PVIF_{15\%, 5}$$

$$= ₹ 150 \times 2.855 + ₹ 1150 \times 0.497$$

$$= ₹ 428.25 + ₹ 571.55 = ₹ 999.80$$

At 14%

As found in sub part (a) P₀ = ₹1033.80

By interpolation we can get YTM

$$= 14\% + \frac{7.94}{7.94 - (-26.06)} \times (15\% - 14\%)$$

$$= 14\% + \frac{7.94}{34} \%$$

$$\text{YTM} = 14.23\%$$

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(b) Working Notes:

- (a) Depreciation: $(₹ 22,00,000 - ₹ 10,00,000)/3 = ₹ 4,00,000$ p.a.
- (b) Effective rate of interest after tax shield : $0.16 \times (1 - 0.50) = 0.08$ or 8%.
- (c) Operating and training costs are common in both alternatives hence not considered while calculating NPV of cash flows.

Calculation of NPV

1. Alternative I: Purchase of Computer

Particulars	Year 1	Year 2	Year 3
	₹	₹	₹
Instalment Payment			
Principal	5,00,000	8,50,000	8,50,000
Interest	<u>3,52,000</u>	<u>2,72,000</u>	<u>1,36,000</u>
Total (A)	<u>8,52,000</u>	<u>11,22,000</u>	<u>9,86,000</u>
Tax shield @ 50%;			
Interest payment	1,76,000	1,36,000	68,000
Depreciation	<u>2,00,000</u>	<u>2,00,000</u>	<u>2,00,000</u>
Total (B)	<u>3,76,000</u>	<u>3,36,000</u>	<u>2,68,000</u>
Net Cash outflows (A – B)	4,76,000	7,86,000	7,18,000
PV factor at 8%	0.926	0.857	0.794
PV of Cash outflows	<u>4,40,776</u>	<u>6,73,602</u>	<u>5,70,092</u>
Total PV of Cash outflows:			16,84,470
Less: PV of salvage value (₹ 10 lakhs \times 0.794)			<u>7,94,000</u>
Net PV of cash outflows			<u>8,90,470</u>

2. Alternative II: Lease of the Computer

Particulars	Year 1	Year 2	Year 3
	₹	₹	₹
Lease rent	5,00,000	5,00,000	5,00,000
10% of gross revenue	2,25,000	2,50,000	2,75,000
Lump sum payment	-	-	<u>6,00,000</u>
Total Payment	7,25,000	7,50,000	13,75,000
Less: Tax shield @ 50%	<u>3,62,500</u>	<u>3,75,000</u>	<u>6,87,500</u>
Net Cash outflows	<u>3,62,500</u>	<u>3,75,000</u>	<u>6,87,500</u>

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PVF @8%	0.926	0.857	0.794
PV of Cash outflows @ 8%	3,35,675	3,21,375	5,45,875
Total PV of cash outflows			12,02,925

Recommendation:

Since the Present Value (PV) of net cash outflow of Alternative I is lower, the company should purchase the computer.

Alternative Solution- If students have taken tax effect on the salvage value of machine

Calculation of NPV

1. Alternative I: Purchase of Computer

Particulars	Year 1	Year 2	Year 3
	₹	₹	₹
Instalment Payment			
Principal	5,00,000	8,50,000	8,50,000
Interest	<u>3,52,000</u>	<u>2,72,000</u>	<u>1,36,000</u>
Total (A)	<u>8,52,000</u>	<u>11,22,000</u>	<u>9,86,000</u>
Tax shield @ 50%;			
Interest payment	1,76,000	1,36,000	68,000
Depreciation	<u>2,00,000</u>	<u>2,00,000</u>	<u>2,00,000</u>
Total (B)	<u>3,76,000</u>	<u>3,36,000</u>	<u>2,68,000</u>
Net Cash outflows (A – B)	4,76,000	7,86,000	7,18,000
PV factor at 8%	0.926	0.857	0.794
PV of Cash outflows	<u>4,40,776</u>	<u>6,73,602</u>	<u>5,70,092</u>
Total PV of Cash outflows:			16,84,470
Less: PV of salvage value (₹ 10 lakhs ´ 0.50 ´ 0.794)			<u>3,97,000</u>
Net PV of cash outflows			<u>12,87,470</u>

2. Alternative II: Lease of the Computer

Particulars	Year 1	Year 2	Year 3
	₹	₹	₹
Lease rent	5,00,000	5,00,000	5,00,000
10% of gross revenue	2,25,000	2,50,000	2,75,000
Lump sum payment	—	—	<u>6,00,000</u>
Total Payment	7,25,000	7,50,000	13,75,000

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Less: Tax shield @ 50%	3,62,500	3,75,000	6,87,500
Net Cash outflows	3,62,500	3,75,000	6,87,500
PVF @8%	0.926	0.857	0.794
PV of Cash outflows @ 8%	3,35,675	3,21,375	5,45,875
Total PV of cash outflows			12,02,925

Recommendation:

Since the Present Value (PV) of net cash outflow of Alternative II is lower, the company should go for leasing option.

Question 5

(a) *The following is the Balance-sheet of Grape Fruit Company Ltd as at March 31st, 2011.*

Liabilities	(₹ in lakhs)	Assets	(₹ in lakhs)
Equity shares of ₹ 100 each	600	Land and Building	200
14% preference shares of ₹ 100/- each	200	Plant and Machinery	300
13% Debentures	200	Furniture and Fixtures	50
Debenture interest accrued and payable	26	Inventory	150
Loan from bank	74	Sundry debtors	70
Trade creditors	340	Cash at bank	130
		Preliminary expenses	10
		Cost of issue of debentures	5
		Profit and Loss account	525
	1440		1440

The Company did not perform well and has suffered sizable losses during the last few years. However, it is felt that the company could be nursed back to health by proper financial restructuring. Consequently the following scheme of reconstruction has been drawn up :

- (i) *Equity shares are to be reduced to ₹ 25/- per share, fully paid up;*
- (ii) *Preference shares are to be reduced (with coupon rate of 10%) to equal number of shares of ₹ 50 each, fully paid up.*
- (iii) *Debenture holders have agreed to forgo the accrued interest due to them. In the future, the rate of interest on debentures is to be reduced to 9 percent.*
- (iv) *Trade creditors will forego 25 percent of the amount due to them.*

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- (v) The company issues 6 lakh of equity shares at ₹ 25 each and the entire sum was to be paid on application. The entire amount was fully subscribed by promoters.
- (vi) Land and Building was to be revalued at ₹ 450 lakhs, Plant and Machinery was to be written down by ₹ 120 lakhs and a provision of ₹15 lakhs had to be made for bad and doubtful debts.

Required:

- (i) Show the impact of financial restructuring on the company's activities. (6 Marks)
- (ii) Prepare the fresh balance sheet after the reconstructions is completed on the basis of the above proposals. (4 Marks)
- (b) An Indian importer has to settle an import bill for \$ 1,30,000. The exporter has given the Indian exporter two options:
- (i) Pay immediately without any interest charges.
- (ii) Pay after three months with interest at 5 percent per annum.

The importer's bank charges 15 percent per annum on overdrafts. The exchange rates in the market are as follows:

Spot rate (₹/\$) : 48.35 /48.36

3-Months forward rate (₹/\$) : 48.81 /48.83

The importer seeks your advice. Give your advice. (6 Marks)

Answer

(a) Impact of Financial Restructuring

- (i) Benefits to Grape Fruit Ltd.

(a) Reduction of liabilities payable

	₹ in lakhs
Reduction in equity share capital (6 lakh shares x ₹75 per share)	450
Reduction in preference share capital (2 lakh shares x ₹50 per share)	100
Waiver of outstanding debenture Interest	26
Waiver from trade creditors (₹340 lakhs x 0.25)	<u>85</u>
	<u>661</u>
(b) Revaluation of Assets	
Appreciation of Land and Building (₹450 lakhs - ₹200 lakhs)	<u>250</u>
Total (A)	<u>911</u>

- (ii) Amount of ₹911 lakhs utilized to write off losses, fictitious assets and over-valued assets.

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Writing off profit and loss account	525
Cost of issue of debentures	5
Preliminary expenses	10
Provision for bad and doubtful debts	15
Revaluation of Plant and Machinery (₹300 lakhs – ₹104 lakhs)	120
Total (B)	<u>675</u>
Capital Reserve (A) – (B)	236

(ii) Balance sheet of Grape Fruit Ltd as at 31st March 2011 (after re-construction)

(₹ in lakhs)

Liabilities	Amount	Assets		Amount
12 lakhs equity shares of ₹25/- each	300	Land & Building		450
10% Preference shares of ₹50/- each	100	Plant & Machinery		180
Capital Reserve	236	Furnitures & Fixtures		50
9% debentures	200	Inventory		150
Loan from Bank	74	Sundry debtors	70	
Trade Creditors	255		<u>-15</u>	55
		Cash-at-Bank (Balancing figure)*		280
	<u>1165</u>			<u>1165</u>

*Opening Balance of ₹130/- lakhs + Sale proceeds from issue of new equity shares ₹150/- lakhs.

(b) If importer pays now, he will have to buy US\$ in Spot Market by availing overdraft facility. Accordingly, the outflow under this option will be

	₹
Amount required to purchase \$130000[\$130000X₹48.36]	6286800
Add: Overdraft Interest for 3 months @15% p.a.	235755
	<u>6522555</u>

If importer makes payment after 3 months then, he will have to pay interest for 3 months @ 5% p.a. for 3 month along with the sum of import bill. Accordingly, he will have to buy \$ in forward market. The outflow under this option will be as follows:

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	\$
Amount of Bill	130000
Add: Interest for 3 months @5% p.a.	1625
	131625

Amount to be paid in Indian Rupee after 3 month under the forward purchase contract ₹ 6427249

(US\$ 131625 X ₹ 48.83)

Since outflow of cash is least in (ii) option, it should be opted for.

Question 6

(a) A Portfolio Manager (PM) has the following four stocks in his portfolio:

Security	No. of Shares	Market Price per share (₹)	b
VSL	10,000	50	0.9
CSL	5,000	20	1.0
SML	8,000	25	1.5
APL	2,000	200	1.2

Compute the following:

- (i) Portfolio beta.
 - (ii) If the PM seeks to reduce the beta to 0.8, how much risk free investment should he bring in?
 - (iii) If the PM seeks to increase the beta to 1.2, how much risk free investment should he bring in? (8 Marks)
- (b) ABC established the following spread on the Delta Corporation's stock :
- (i) Purchased one 3-month call option with a premium of ₹ 30 and an exercise price of ₹ 550.
 - (ii) Purchased one 3-month put option with a premium of ₹ 5 and an exercise price of ₹ 450.
- The current price of Delta Corporation's stock is ₹ 500. Determine ABC's profit or loss if the price of Delta Corporation's stock.
- (a) stays at ₹ 500 after 3 months.
 - (b) falls to ₹ 350 after 3 months.
 - (c) rises to ₹ 600. (8 Marks)

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FINAL EXAMINATION : NOVEMBER, 2011

Answer

(a)

Security	No. of shares (1)	Market Price of Per Share (2)	(1) × (2)	% to total (w)	β (x)	wx
VSL	10000	50	500000	0.4167	0.9	0.375
CSL	5000	20	100000	0.0833	1	0.083
SML	8000	25	200000	0.1667	1.5	0.250
APL	2000	200	<u>400000</u>	0.3333	1.2	<u>0.400</u>
			<u>1200000</u>	1		<u>1.108</u>

Portfolio beta

1.108

(i) Required Beta

0.8

It should become (0.8 / 1.108)

72.2 % of present portfolio

If ₹ 12,00,000 is 72.20%, the total portfolio should be

₹ 12,00,000 × 100/72.20 or

₹ 16,62,050

Additional investment in zero risk should be (₹ 16,62,050 – ₹ 12,00,000) = ₹ 4,62,050

Revised Portfolio will be

Security	No. of shares (1)	Market Price of Per Share (2)	(1) × (2)	% to total (w)	β (x)	wx
VSL	10000	50	500000	0.3008	0.9	0.271
CSL	5000	20	100000	0.0602	1	0.060
SML	8000	25	200000	0.1203	1.5	0.180
APL	2000	200	400000	0.2407	1.2	0.289
Risk free asset	46205	10	462050	0.2780	0	0
			1662050	1		0.800

(ii) To increase Beta to 1.2

Required beta

1.2

It should become 1.2 / 1.108

108.30% of present beta

If 1200000 is 108.30%, the total portfolio should be

1200000 × 100/108.30 or

1108033 say 1108030

Additional investment should be (-) 91967 i.e. Divest ₹ 91970 of Risk Free Asset

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Revised Portfolio will be

Security	No. of shares (1)	Market Price of Per Share (2)	(1) × (2)	% to total (w)	β (x)	wx
VSL	10000	50	500000	0.4513	0.9	0.406
CSL	5000	20	100000	0.0903	1	0.090
SML	8000	25	200000	0.1805	1.5	0.271
APL	2000	200	400000	0.3610	1.2	0.433
Risk free asset	-9197	10	-91970	-0.0830	0	0
			1108030	1		1.20

Portfolio beta 1.20

- (b) (i) Total premium paid on purchasing a call and put option
 = (₹ 30 per share x 100) + (₹ 5 per share x 100).
 = ₹ 3,000 + ₹ 500 = ₹ 3,500

In this case, ABC exercises neither the call option nor the put option as both will result in a loss for him/her.

Ending value = -₹ 3,500 + Zero gain
 = -₹ 3,500

i.e. Net loss = ₹ 3,500

- (ii) Since the price of the stock is below the exercise price of the call , the call will not be exercised. Only put is valuable and is exercised.

Total premium paid = ₹ 3,500
 Ending value = - ₹ 3,500 + ₹ [(450 – 350) x 100]
 = - ₹ 3,500 + ₹ 10,000 = ₹ 6,500

i.e. Net gain = ₹ 6,500

- (iii) In this situation, the put is worthless, since the price of the stock exceeds the put's exercise price. Only call option is valuable and is exercised.

Total premium paid = ₹ 3,500
 Ending value = - ₹ 3,500 + ₹ [(600-550) x 100]
 Net Gain = - ₹ 3,500 + ₹ 5,000 = ₹ 1,500

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Question 7

Write short notes on any **four** of the followings:

- (a) Capital Rationing
 - (b) Embedded derivatives
 - (c) Depository participant
 - (d) Money market mutual fund
 - (e) Leading and lagging
 - (f) Take over by reverse bid
- (4 × 4 Marks = 16 Marks)

Answer

- (a) **Capital Rationing:** When there is a scarcity of funds, capital rationing is resorted to. Capital rationing means the utilization of existing funds in most profitable manner by selecting the acceptable projects in the descending order or ranking with limited available funds. The firm must be able to maximize the profits by combining the most profitable proposals. Capital rationing may arise due to (i) external factors such as high borrowing rate or non-availability of loan funds due to constraints of Debt-Equity Ratio; and (ii) Internal Constraints Imposed by management. Project should be accepted as a whole or rejected. It cannot be accepted and executed in piecemeal.

IRR or NPV are the best basis of evaluation even under Capital Rationing situations. The objective is to select those projects which have maximum and positive NPV. Preference should be given to interdependent projects. Projects are to be ranked in the order of NPV. Where there is multi-period Capital Rationing, Linear Programming Technique should be used to maximize NPV. In times of Capital Rationing, the investment policy of the company may not be the optimal one.

- (b) A derivative is defined as a contract that has all the following characteristics: Its value changes in response to a specified underlying, e.g. an exchange rate, interest rate or share price;

It requires little or no initial net investment;

It is settled at a future date;

The most common derivatives are currency forwards, futures, options, interest rate swaps etc.

An embedded derivative is a derivative instrument that is embedded in another contract - the host contract. The host contract might be a debt or equity instrument, a lease, an insurance contract or a sale or purchase contract. Derivatives require to be marked-to-market through the income statement, other than qualifying hedging instruments. This requirement on embedded derivatives are designed to ensure that mark-to-market through the income

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statement cannot be avoided by including - embedding - a derivative in another contract or financial instrument that is not marked-to market through the income statement.

An embedded derivative can arise from deliberate financial engineering and intentional shifting of certain risks between parties. Many embedded derivatives, however, arise inadvertently through market practices and common contracting arrangements. Even purchase and sale contracts that qualify for executory contract treatment may contain embedded derivatives. An embedded derivative causes modification to a contract's cash flow, based on changes in a specified variable.

- (c) **Depository Participants:** Under this system, the securities (shares, debentures, bonds, Government Securities, MF units etc.) are held in electronic form just like cash in a bank account. To speed up the transfer mechanism of securities from sale, purchase, transmission, SEBI introduced Depository Services also known as Dematerialization of listed securities. It is the process by which certificates held by investors in physical form are converted to an equivalent number of securities in electronic form. The securities are credited to the investor's account maintained through an intermediary called Depository Participant (DP). Shares/Securities once dematerialized lose their independent identities. Separate numbers are allotted for such dematerialized securities. Organization holding securities of investors in electronic form and which renders services related to transactions in securities is called a Depository. A depository holds securities in an account, transfers securities from one account holder to another without the investors having to handle these in their physical form. The depository is a safe keeper of securities for and on behalf of the investors. All corporate benefits such as Dividends, Bonus, Rights etc. are issued to security holders as were used to be issued in case of physical form.
- (d) An important part of financial market is Money market. It is a market for short-term money. It plays a crucial role in maintaining the equilibrium between the short-term demand and supply of money. Such schemes invest in safe highly liquid instruments included in commercial papers certificates of deposits and government securities.

Accordingly, the Money Market Mutual Fund (MMMF) schemes generally provide high returns and highest safety to the ordinary investors. MMMF schemes are active players of the money market. They channallize the idle short funds, particularly of corporate world, to those who require such funds. This process helps those who have idle funds to earn some income without taking any risk and with surety that whenever they will need their funds, they will get (generally in maximum three hours of time) the same. Short-term/emergency requirements of various firms are met by such Mutual Funds. Participation of such Mutual Funds provide a boost to money market and help in controlling the volatility.

- (e) **Leading** means advancing a payment i.e. making a payment before it is due. **Lagging** involves postponing a payment i.e. delaying payment beyond its due date.

In forex market Leading and lagging are used for two purposes:-

- (1) **Hedging foreign exchange risk:** A company can lead payments required to be made in a currency that is likely to appreciate. For example, a company has to pay

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\$100000 after one month from today. The company apprehends the USD to appreciate. It can make the payment now. Leading involves a finance cost i.e. one month's interest cost of money used for purchasing \$100000.

A company may lag the payment that it needs to make in a currency that it is likely to depreciate, provided the receiving party agrees for this proposition. The receiving party may demand interest for this delay and that would be the cost of lagging. Decision regarding leading and lagging should be made after considering (i) likely movement in exchange rate (ii) interest cost and (iii) discount (if any).

- (2) Shifting the liquidity by modifying the credit terms between inter-group entities: For example, A Holding Company sells goods to its 100% Subsidiary. Normal credit term is 90 days. Suppose cost of funds is 12% for Holding and 15% for Subsidiary. In this case the Holding may grant credit for longer period to Subsidiary to get the best advantage for the group as a whole. If cost of funds is 15% for Holding and 12% for Subsidiary, the Subsidiary may lead the payment for the best advantage of the group as a whole. The decision regarding leading and lagging should be taken on the basis of cost of funds to both paying entity and receiving entity. If paying and receiving entities have different home currencies, likely movements in exchange rate should also be considered.
- (f) Generally, a big company takes over a small company. When the smaller company gains control of a larger one then it is called "Take-over by reverse bid". In case of reverse take-over, a small company takes over a big company. This concept has been successfully followed for revival of sick industries.

The acquired company is said to be big if any one of the following conditions is satisfied:

- (i) The assets of the transferor company are greater than the transferee company;
- (ii) Equity capital to be issued by the transferee company pursuant to the acquisition exceeds its original issued capital, and
- (iii) The change of control in the transferee company will be through the introduction of minority holder or group of holders.

Reverse takeover takes place in the following cases:

- (1) When the acquired company (big company) is a financially weak company
- (2) When the acquirer (the small company) already holds a significant proportion of shares of the acquired company (small company)
- (3) When the people holding top management positions in the acquirer company want to be relived off of their responsibilities.

The concept of take-over by reverse bid, or of reverse merger, is thus not the usual case of amalgamation of a sick unit which is non-viable with a healthy or prosperous unit but is a case whereby the entire undertaking of the healthy and prosperous company is to be merged and vested in the sick company which is non-viable.

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