Paper – 20: Financial Analysis & Business Valuation

Time Allowed: 3 Hours **Full Marks: 100**

Working Notes should form part of the answer.

"Whenever necessary, suitable assumptions should be made and indicated in answer by the candidates."

Section A

(Answer Question No. 1 and Question No. 2 which are compulsory and any two from the rest in this section)

Q. 1. Basanti Ltd. a large professionally managed consumer durable manufacturer, is seeking a medium term loan of ₹ 500 lakh essentially to finance part of its working capital requirements, following its decision to significantly improve credit terms to its customers, with a view to substantially increasing the demand for its products. The following are the company's summarized financial data, compiled from published accounts:

(₹ lakhs)

Particulars	2013	2012
Gross fixed assets at cost	2,200	2,000
Accumulated depreciation	(1,600)	(1,500)
Trade investments	100	100
Inventories	480	390
Receivables	590	400
Trade creditors	(170)	(90)
Tax and other provisions	(400)	(400)
Net assets employed	1,200	900
Financed by:		
Equity capital	300	300
Reserves	250	200
Long-term loans	400	200
Overdraft and short-term facilities	250	200
	1,200	900
Sales income	1,800	1,600
Profit before interest and tax (PBIT)	280	280
Interest	100	60
Tax	100	120
Dividends	30	30
Retentions	50	70

The company's fully paid-up equity shares having face value of ₹ 10 per share are quoted at ₹ 15 per share in the stock market. It is known that the plant utilization of the company's facilities is around 60% of its capacity, and there are adequate technical and marketing skills in the company to handle a much higher volume of business.

Answer the following:

(a) Calculate the ratios which can be considered as the key indicators having bearing on the company's financial position.

(b) Make an analysis on the basis of the ratios, calculated above having impact on the company's financial position and its credit and liquidity status from prospective lender's view point.

[8+7]

Answer 1(a):

Working Notes:

Calculation of Capital Employed **(₹ lakhs)**

Particulars		2013	2012
Gross fixed assets		2,200	2,000
Less: Accumulated Depreciation		1,600	1,500
Net Fixed Assets	(i)	600	500
Trading Investments	(ii)	100	100
Current Assets			
Inventories + Receivables		1,070	790
Less: Current liabilities (Trade creditors, provisions and overdrafts)		820	690
	(iii)	250	100
Capital Employed	(i) + (ii) + (iii)	950	700

	Calculation of Ratios	2013	2012
(i)	Return on Capital Employed $\frac{\text{PBIT}}{\text{Capital employed}} \times 100$	$\frac{280}{950} \times 100 = 29.47\%$	$\frac{280}{700} \times 100 = 40\%$
(ii)	Sales Margin $\frac{\text{PBIT}}{\text{Sales}} \times 100$	$\frac{280}{1,800} \times 100 = 15.56\%$	$\frac{280}{1,600} \times 100 = 17.5\%$
(iii)	Sales to Capital Employed $\frac{\text{Sales}}{\text{Capital Employed}}$	$\frac{1,800}{950} = 1.89$	$\frac{1,600}{700} = 2.29$
(iv)	Debt Equity ratio $\frac{\text{Long-term Debt}}{\text{Shareholders Equity}}$	$\frac{400}{550} = 0.73$	$\frac{200}{500} = 0.40$
(v)	Current Ratio $\frac{\text{Current Assets}}{\text{Current Liabilities}}$	$\frac{1,070}{820} = 1.30$	$\frac{790}{690} = 1.14$
(vi)	Quick Ratio $\frac{\text{Current Assets} - \text{Stock}}{\text{Current Liabilities} - \text{Overdraft}}$	$\frac{590}{570} = 1.04$	$\frac{400}{490} = 0.82$
(vii)	Inventory Turnover $\frac{\text{Sales}}{\text{Inventories}}$	$\frac{1,800}{480} = 3.75$	$\frac{1,600}{390} = 4.10$
(viii)	Receivables Turnover $\frac{\text{Sales}}{\text{Receivables}}$	$\frac{1,800}{590} = 3.05$	$\frac{1,600}{400} = 4.00$
(ix)	Interest Cover $\frac{\text{PBIT}}{\text{Interest}}$	$\frac{280}{100} = 2.80$	$\frac{280}{60} = 4.67$
(x)	Dividend Cover $\frac{\text{PAT}}{\text{Dividends}}$	$\frac{80}{30} = 2.67$	$\frac{100}{30} = 3.33$

(xi)	Dividend Yield $\frac{\text{Dividend Yield}}{\text{Market value of Equity}} \times 100$	$\frac{30}{450} \times 100 = 6.67\%$	$\frac{30}{450} \times 100 = 6.67\%$
(xii)	Return on Equity $\frac{\text{PAT}}{\text{Shareholders' Funds}} \times 100$	$\frac{80}{550} \times 100 = 14.55\%$	$\frac{100}{500} \times 100 = 20\%$

Answer 1(b):

Analysis:

(i) The return on capital employed is reduced from 40% to 29.47% and sales margin is reduced from 17.5% to 15.56%.

(ii) There is an increase in capital employed from ₹ 700 lakhs to ₹ 950 lakhs. It has resulted in decrease of investment turnover from 2.29 to 1.89 times.

(iii) The long-term debt component is doubled in one year and the debt-equity ratio shows a sharp increase from 0.40 to 0.73. The ideal debt-equity ratio is 2 : 1. The current debt position is within the manageable level with least financial risk.

(iv) The working capital position and short-term liquidity position have improved during the last financial year i.e. 2013.

(v) The inventory turnover and receivables turnover shows excessive investment in stock and receivables over the requirement of increased sales.

(vi) The interest service coverage ratio has fallen from 4.67 times to 2.80 times and the dividend cover has shown decline from 3.33 times to 2.67 times.

(vii) The return on equity has fallen from 20% to 14.55%. However, the dividend yield remains unchanged.

The overall financial position is deteriorating and the financing of working capital is not warranted as per present financial position unless there is a definite growth in sales is proved.

Q. 2. The extracts of Balance sheet and Income statement of M/s. Tineto Company over the last 3 years are as follows:

(₹ '000)

Particulars	2011	2012	2013
Cash	**561**	**387**	**202**
Receivables	**1,963**	**2,870**	**4,051**
Inventories	**2,031**	**2,613**	**3,287**
Current Assets	**4,555**	**5,870**	**7,540**
Net fixed assets	**2,581**	**4,430**	**4,364**
Total Assets	**7,136**	**10,300**	**11,904**
Payables	**1,862**	**2,944**	**3,613**
Accruals	**301**	**516**	**587**
Bank loan	**250**	**900**	**1,050**
Current Liabilities	**2,413**	**4,360**	**5,250**
Long-term debt	**500**	**1,000**	**950**

Shareholders' equity	**4,223**	**4,940**	**5,704**
Total Liabilities and Equity	**7,136**	**10,300**	**11,904**
Sales	**11,863**	**14,952**	**16,349**
Cost of goods sold	**8,537**	**11,124**	**12,016**
Selling, general and administrative expenses	**2,349**	**2,659**	**2,993**
Profit before tax	**977**	**1,169**	**1,340**
Taxes	**390**	**452**	**576**
Profit after tax	**587**	**717**	**764**

You are required to —

(a) Prepare Common Size Balance Sheet and Common Size Income Statement for the years 2011 – 2013 and analyse the results.

(b) Also perform Index Analysis of the Balance Sheet and Income Statement and analyse it and interpret the result.

[8+7]

Answer 2(a):

Common Size Balance Sheet of M/s Tineto Company for the years 2011 to 2013

Particulars		2011	2012	2013
Cash		7.9	3.8	1.7
Receivables		27.5	27.8	34.0
Inventories		28.4	25.4	27.6
Current Assets		63.8	57.0	63.3
Net fixed assets		36.2	43.0	36.7
Total Assets		100.0	100.0	100.0
Payables		26.1	28.6	30.4
Accruals		4.2	5.0	4.9
Bank loan		3.5	8.7	8.8
Current Liabilities	(i)	33.8	42.3	44.1
Long-term debt		7.0	9.7	8.0
Shareholders' equity		59.2	48.0	47.9
Long-term funds	(ii)	66.2	57.7	55.9
Total Liabilities and Equity	(i) + (ii)	100.0	100.0	100.0

Common size Income Statement of M/s Tineto Company for the years 2011 to 2013

Particulars	2011	2012	2013
Sales	100.0	100.0	100.0
Less: Cost of goods sold	72.0	74.4	73.5
Gross Profit	28.0	25.6	26.5
Less: Selling, general and administrative expenses	19.8	17.8	18.3
Profit before tax	8.2	7.8	8.2
Less: Taxes	3.3	3.0	3.5
Profit after tax	4.9	4.8	4.7

Analysis:

(i) The cash balance is dwindling over years 2011 to 2013 which may cause liquidity problems in future.

(ii) There is sharp increase of receivables balance which may be due to inefficiency in collection of debtors' balances.

(iii) The proportion of inventories to total assets almost remains same in year 2011 and year 2013 but the inventory has shown reduced balance in year 2012.

(iv) The proportion of net fixed assets to total assets almost remains unchanged for years 2011 and 2013. But higher proportion is shown in year 2012.

(v) The shareholders equity to total liabilities has sharply declined from 59.2 in 2011 to 47.9 in 2013.
(vi) The proportion of long-term debt almost remains same in all the 3 years.
(vii) The proportion of bank loan in total liabilities has increased from 3.5 in 2011 to 8.8 in 2013.
(viii) The proportion of accruals to total liabilities remains almost same in all three years.
(ix) The payables have increased from 26.1 to 30.4 over a period of 3 years, represents delay in making payments for creditors.
(x) There is not much of change in cost of goods sold, selling, general and administrative expenses in all three years causing uniform profit in all three years.

Answer 2(b):

Statement showing Index analysis of Balance Sheet items in years 2011 to 2013

Particulars	2011	2012	2013
Cash	100.0	69.0	36.0
Receivables	100.0	146.2	206.4
Inventories	100.0	128.7	161.8
Current Assets	100.0	128.9	165.5
Net fixed assets	100.0	171.6	169.1
Total Assets	100.0	144.3	166.8
Payables	100.0	158.1	194.0
Accruals	100.0	171.4	195.0
Bank loan	100.0	360.0	420.0
Current Liabilities	100.0	180.7	217.6
Long-term debt	100.0	200.0	190.0
Shareholders' equity	100.0	117.0	135.1
Total Liabilities and Equity	100.0	144.3	166.8

Statement showing Index analysis of Income Statement items in years 2011 to 2013

Particulars	2011	2012	2013
Sales	100.0	126.0	137.8
Cost of goods sold	100.0	130.3	140.8
Gross Profit	100.0	115.1	130.3
Selling, general and administrative expenses	100.0	113.2	127.4
Profit before tax	100.0	119.7	137.2
Taxes	100.0	115.9	147.7
Profit after tax	100.0	122.2	130.2

Analysis –

Index analysis shows much the same picture. Cash declined faster than total asset and current assets, and receivables increased faster than these two bench marks.

Inventories fluctuated, but were about the same percentage wise to total assets in 2013 as they were in 2011.

Net fixed assets increased more sharply than total assets in 2012 and then fell back into line in 2013.

The sharp increase in bank loans in 2012 and 2013 and the sharp increase in long-term debts in 2012 are evident.

Equity increased less than total assets, so debt increased more percentage wise. With respect to profitability, net profits increased less than sales, for the reasons indicated earlier.

Q. 3. (a) Consider the following figures of Earth Ltd.

	2012	2013
Sales (₹)	**23,40,000**	**27,01,000**
Cost of goods sold (₹)	**18,00,000**	**24,42,000**
Units sold	**36,000**	**37,000**

Account for change in sale price and cost price.

(b) Write the differences between Univariate Approach and Multivariate Approach to Sickness Prediction.

[6+4]

Answer 3(a):

Statement showing changes

	Year		
	2012	**2013**	**Change**
1. Sales (₹)	23,40,000	27,01,000	3,61,000
2. Cost of goods sold (₹)	18,00,000	24,42,000	6,42,000
3. Gross Profit (1 - 2) (₹)	5,40,000	2,59,000	(2,81,000)
4. Units sold	36,000	37,000	1,000
5. Sales per unit (1 ÷4) (₹)	65	73	8
6. Cost per unit (2 ÷ 4) (₹)	50	66	16

Base year = 2012

1. Change in sales due to change in price = Change in price x base year quantity
   = ₹ 8 x 36,000 = ₹ 2,88,000
2. Change in sales due to change in quantity = Change in quantity x base year price
   = 1,000 x ₹ 65 = ₹ 65,000
3. Change in sales due to change in quantity – price factor = Change in price x change in quantity
   = ₹ 8 x 1,000 = ₹ 8,000
4. Change in cost of goods sold due to change in price factor = Change in cost per unit x base year quantity
   = ₹ 16 x 36,000 = ₹ 5,76,000
5. Change in cost of goods sold due to change in quantity factor = Change in quantity x base year cost per unit
   = 1,000 x ₹ 50 = ₹ 50,000
6. Change in cost of goods sold due to Change in quantity cost factor = Change in quantity x Change in cost per unit
   = 1,000 x ₹ 16 = ₹ 16,000

Statement accounting for change in Gross Profit

Factors	**Favourable Change (₹)**	**Unfavourable Change (₹)**
1. Price factor in sale	2,88,000	
2. Price factor in cost		5,76,000
3. Quantity factor in sale	65,000	
4. Quantity factor in cost		50,000

5. Quantity-price factor in sale	8,000	
6. Quantity-price factor in cost		16,000
Total	3,61,000	6,42,000
Net unfavourable change in gross profit	2,81,000	
	6,42,000	6,42,000

Answer 3(b):

Differences between Univariate Approach and Multivariate Approach to sickness prediction:

Points of Distinction	Univariate Approach	Multivariate Approach
1. Nature	Under this approach, accounting ratios are considered separately to assess their individual predictive power of corporate sickness.	Under this approach, multiple ratios are incorporated in the prediction model. Here the combined influences of several variables are considered and a composite ratio is found out to discriminate between failed and non-failed firms.
2. Precision of Prediction	Since the influence of single variable is considered, the prediction may not be correct in many cases.	The predictive power of this model is very high in the first two years before the year of bankruptcy. However, the predictive power of the model becomes unreliable, when earlier data are used.
3. Technique of Analysis	In univariate analysis dichotomous test Is mainly applied to determine the basis of predicting corporate sickness.	The multivariate analysis uses a highly advanced statistical technique called multiple discriminant analysis. This method considers the combined influence of several variables.
4. Method of Determination of Sickness Status	Under this approach a particular cut off point is found out to identify failed and non-failed firms. This cut off point varies depending upon the ratio considered in the study. So one cut off point may identify a firm as failed while the other cut off point may identify the same firm as non-failed.	Altman fixed two cut off points i. e, 1.81 and 2.99. Firms with cut off point above 2.99 are considered non-bankrupt and firms with cut off point below 1.81 are considered bankrupt. Firms with Z scores between 1.81 and 2.99 may or may not be bankrupt firms.

Q. 4. (a) The selected financial data for P, Q and R companies for the current year ended March 31st are as follows:

Particulars	P	Q	R
Variable expenses as a percentage of sales	**66.67**	**75**	**50**
Interest expenses (₹)	**200**	**300**	**1,000**
Degree of operating leverage (DOL)	**5**	**6**	**6**
Degree of financial leverage (DFL)	**3**	**4**	**2**
Income-tax rate	**0.30**	**0.30**	**0.30**

(i) Prepare income statements for P, Q and R companies.
(ii) Comment on the financial position and structure of these companies.

(b) A company's capital structure consists of:

Particulars	₹
Equity Shares of ₹ 100 each	**20,00,000**
Retained Earnings	**10,00,000**
9% Preference Shares	**12,00,000**
7% Debentures	**8,00,000**
Total	**50,00,000**

The company earns 12% on its capital. The income-tax rate is 50%. The company requires a sum of ₹ 25,00,000 to finance its expansion programme for which the following alternatives are available:
(i) Issue of 20,000 Equity Shares at a premium of ₹ 25 per share.
(ii) Issue of 10% Preference Shares; and
(iii) Issue of 8% Debentures.

It is estimated that the P/E ratio in the case of equity shares, preference shares and debentures financing would be 26.75, 21.25 and 19.625 respectively.

Which of the three financing alternatives would you recommend and why?

[(3+2)+5]

Answer 4(a):

(i) Income statement of companies P, Q and R for the current year, ended March 31st

Particulars	P	Q	R
Sales	₹4,500	₹9,600	₹24,000
Less: Variable costs	3,000	7,200	12,000
Less: Fixed costs (Sales – vc- EBIT)	1,200	2,000	10,000
EBIT	300	400	2,000
Less: interest	200	300	1,000
Earnings before taxes	100	100	1,000
Less: Taxes	30	30	300
EAT (Net income)	70	70	700

Working Notes:
The preparation of the income statement requires data for **(1)** sales revenue, **(2)** variable costs and **(3)** fixed costs.

Company P:	Company Q:	Company R:
DFL = 3, DFL = $\frac{EBIT}{EBIT-I}$ $3 = \frac{EBIT}{EBIT-₹200}$ EBIT = ₹300 DOL =	$4 = \frac{EBIT}{EBIT-₹300}$ EBIT = ₹400 $6 = \frac{S-0.75\,S}{₹400}$] S = ₹ 9,600 VC = 0.75 x ₹ 9,600 = ₹ 7,200	$2 = \frac{EBIT}{EBIT-₹1,000}$ EBIT = ₹2,000 $6 = \frac{S-0.50\,S}{₹2,000}$ S = ₹ 24,000 VC = 0.50 × ₹ 24,000

$\frac{\text{Sales} - \text{Variable costs(V)}}{\text{EBIT}}$ $5 = \frac{S - 0.667\ S}{₹300}$ Where S = sales = ₹4,500 VC = 0.667 x ₹4,500 = ₹3,000		= ₹ 12,000

(ii) The financial position of company R can be regarded better than other companies: **(1)** It has the least financial risk as it is has minimum degree of financial leverage. It is true that there will be a more magnified impact on EPS of P and Q due to change in EBIT, but, their EBIT level due to low sales is very low. **(2)** From the point of view of DCL, company R is better placed. The degree of combined leverage is maximum in company Q (24); for company P (15) and for company R it is 12. The total risk (business plus financial) of company R is the lowest. **(3)** The ability of the company R to meet interest liability is better. The EBIT/interest ratios for the three companies are:
R, 2.0 (₹ 2,000 ÷ ₹ 1,000)
P, 1.5 (₹ 300 ÷ ₹ 200)
Q, 1.33 (₹ 400 ÷ ₹300)

Answer 4(b):

Statement showing the Computation of EPS under Different-Financing Plans

	Present Capacity ₹	**Plan I** ₹	**Plan II** ₹	**Plan III** ₹
EBIT (12% on ₹ 50,00,000)	6,00,000	—	—	—
(12% on ₹ 75,00,000)	—	9,00,000	9,00,000	9,00,000
Less: Interest —				
Old (₹)	56,000	56,000	56,000	56,000
New (₹)	—	—	—	2,00,000
Profit before tax (₹)	5,44,000	8,44,000	8,44,000	6,44,000
Less : Tax @ 50% (₹)	2,72,000	4,22,000	4,22,000	3,22,000
Profit after tax (₹)	2,72,000	4,22,000	4,22,000	3,22,000
Less : Preference Dividend				
Old (₹)	1,08,000	1,08,000	1,08,000	1,08,000
New (₹)	—	—	2,50,000	—
Profit for Equity Shareholders (₹)	1,64,000	3,14,000	64,000	2,14,000
No. of Equity Shares	20,000	40,000	20,000	20,000
∴ EPS	$= \frac{₹1,64,000}{20,000}$ = ₹ 8.20	$= \frac{₹3,14,000}{40,000}$ = ₹ 7.85	$= \frac{₹64,000}{20,000}$ = ₹ 3.20	$= \frac{₹2,14,000}{20,000}$ = ₹ 10.70
$\frac{P}{E}$ Ratio (given)	—	26.75	21.25	19.625
MPS (EPS x $\frac{P}{E}$ Ratio) (₹)	—	209.99	68.00	209.99

Recommendation

The financing alternative which possesses the highest MPS (Market price per share) should be selected. But in this problem both Plan (I) and Plan (III) present the same MPS, so any one of the two may be selected or recommended. But from the taxation point of view, Debenture

financing is better, as, after tax, cost will be only 4% (i.e. 8% - 50% of 8%). Thus, debenture financing should be recommended.

Question 5.

From the following Profit and Loss Account of Bihan Ltd., prepare a Gross Value Added Statement. Show also the reconciliation between Gross Value Added and Profit before Taxation:

Profit and Loss Account (Extract) for the year ended 31st March, 2014

Particulars	Notes	₹ lakhs	₹ lakhs
Income			
Sales			**206.42**
Other income			**10.20**
			216.62
Expenditure			
Production and operational expenses	**1**	**166.57**	
Administration expenses	**2**	**6.12**	
Interest and other charges	**3**	**8.00**	
Depreciation		**5.69**	**186.38**
Profit before tax			**30.24**
Provision for tax			**3.00**
			27.24
Investment allowance reserve written back			**0.46**
Balance as per last Balance Sheet			**1.35**
			29.05
Transferred to:			
General reserve		**24.30**	
Proposed dividend		**3.00**	**27.30**
Surplus carried to Balance Sheet			**1.75**
			29.05

Notes:

(1)

Production and Operational Expenses	(₹ lakhs)
Increase in stock	**30.50**
Consumption of raw materials	**77.76**
Consumption of stores	**8.11**
Salaries, wages, bonus and other benefits	**12.80**
Cess and local taxes	**3.20**
Other manufacturing expenses	**34.20**
	166.57

(2) Administration expenses include inter alia audit fees of ₹ 1 lakh, salaries and commission to directors ₹ 2.20 lakhs and provision for doubtful debts ₹ 2.50 lakhs.

(3)

Interest and Other Charges	(₹ lakhs)
On fixed loans from financial institutions	**3.90**
On debentures	**1.80**
On working capital loans from bank	**2.30**
	8.00

[6+4]

Answer:

Value Added Statement of Bihan Ltd. for the year ended 31st March, 2014

Particulars	₹ lakhs	₹ lakhs	%
Sales		206.42	
Less: Cost of bought-in materials and services			
Production and operational expenses	150.57		
Administration expenses	3.92		
Interest on working capital loans	2.30	156.79	
Value added by manufacturing and trading activities		49.63	
Add: Other income		10.20	
Total Value Added		59.83	
Application of Value Added:			
To Employees			
Salaries, wages, bonus and other benefits		12.80	21.39
To Directors			
Salaries and commission		2.20	3.68
To Government			
Cess and local taxes	3.20		
Income-tax	3.00	6.20	10.36
To Providers of Capital			
Interest on debentures	1.80		
Interest on fixed loans	3.90		
Dividend	3.00	8.70	14.54
To Provide for Maintenance and Expansion			
Depreciation	5.69		
General reserve [₹ (24.30 - 0.46) lakhs]	23.84		
Retained profit [₹(1.75 - 1.35) lakhs]	0.40	29.93	50.03
		59.83	100.0

Reconciliation between Total Value Added and Profit before Taxation (₹ lakhs)

Profit before tax		30.24
Add back:		
Depreciation	5.69	
Salaries, wages, bonus and other benefits	12.80	
Directors' remuneration	2.20	
Cess and local taxes	3.20	
Interest on debentures	1.80	
Interest on fixed loans	3.90	29.59
Total Value Added		59.83

Section B

(Answer Question No. 6 and Question No. 7 which are compulsory and any two from the rest in this section)

Q. 6. The following is the extract from the Balance Sheets of X Ltd.:

Liabilities	31.03.2013 ₹ lakhs	31.03.2014 ₹ lakhs	Assets	31.03.2013 ₹ lakhs	31.03.2014 ₹ lakhs
Share capital	5000	5000	Fixed Assets	5500	6500
General reserve	4000	4250	10% investment	2500	2500
Profit & Loss A/c	600	900	Stock	2600	3000
18% term loan	1800	1650	Debtors	1700	1100
Sundry Creditors	350	450	Cash at bank	460	450
Provision for tax	110	130	Fictitious Assets	100	80
Proposed dividend	1000	1250			
Total	12860	13630	Total	12860	13630

Additional information:

(i) Replacement values of fixed assets were ₹11000 lakhs on 31.03.2013 and ₹12500 lakhs on 31.03.2014 respectively.

(ii) Rate of depreciation adopted on fixed assets was 5% p.a.

(iii) 50% of the stock is to be valued at 120% of its book value.

(iv) 50% of investments were trade investments.

(v) Debtors on 31st March, 2014 included foreign debtors of $ 350000 recorded in the books at ₹45 per U.S. Dallar. The closing exchange rate was $ 1 = ₹49.

(vi) Creditors on 31st march, 2014 included foreign creditors of $ 600000 recorded in the books of $ 1 = ₹43. The closing exchange rate was $ 1 = ₹49.

(vii) Profits for the year 2013-14 included ₹600 lakhs of government subsidy which was not likely to recur.

(viii) Future maintainable profits (pre-tax) are likely to be higher by 10%.

(ix) Tax rate during 2013-2014 was 50%, effective future tax rate will be 45%.

(x) Normal rate of return expected is 13%

One of the directors of the company Sudip fears that the company does not enjoy a good will in the prevalent market circumstances.

Critically examine this and establish whether X Co. has or has not any goodwill. If your answer were positive on the existence of goodwill, show the leverage effect it has on the company's result.

Industry average return was 10% on long term funds and 13% on equity funds.

[15]

Answer: 6.

Calculation of Future Capital Employed

Particulars	₹in lakhs	₹in lakhs
Profit made during the year:		
Increase in general reserve [4250 – 4000]	250	
Increase in Profit and loss A/c [900 – 600]	300	
Proposed dividend	1250	
Add: current year tax [1800 x $\frac{0.50}{0.50}$]		1800
		1800
Profit before tax		3600
Less: Additional depreciation required [12500 – 6500] x 5%		(300)
		(260)

Less: Loss on increased valuation of opening stock [2600 x 50% x 20%]		300 (125)
Add: Profit on increased valuation of closing stock [3000 x 50% x 20%]		14 (36)
Less: Income from non trade investment s [2500 x 50% x 10%]		(600)
Add: Profit on restatement of Debtors [350000 x (49-45)]		1250
Less: Loss on restatement of creditors [600000 x (49 – 43)]		20
Less: Govt. subsidy non-recurring)		
Add: R&D expenses written off (non-recurring)		
Add: Fictions assets written off (non-recurring) [100 – 80]		
Add: Future reduction in interest $\frac{1800+1650}{2}$ x 18% = 310.5		13.5
Future interest (1650 x 18%) = 297.0		3876.50
Difference = 13.5		387.65
Future maintainable profit (before tax)		
Add: Expected increase @ 10%		
		4264.15
Less: Tax @ 45% (workings)		(2053.87)
Future maintainable profit on equity capital		2210.28
Add: Interest on long term loan (after tax) [1650 x 18%]		297.00
Future maintainable profit on long term capital employed		2507.28

Workings:

Adjusted profit before tax	4264.15
Add: Additional depreciation written back (not tax deductible)	300
Taxable profit	4564.15

Tax on ₹4564.15 lakhs @ 40% = 2053.87

Computation of Capital Employed

	31-03-2013 ₹in lakhs	**31-03-2014 ₹in lakhs**
Fixed Assets	11000	12500
Trade investments	1250	1250
Stock [50% of 2600 + (50% of 2600 x 1.20)]	2860	
[50% of 3000 + (50% of 3000 x 1.20)]		3300
Debtors	1700	1114
Cash at Bank	460	450
Total Assets	17270	18614
Less: Liabilities		
Term loan from bank	(1800)	(1650)
Creditors	(350)	(486)
Provision for tax	(110)	(130)
Capital Employed (Equity Approach)	15010	16348
Add: Term loan from bank	1800	1650
Capital Employed (Long term Fund approach)	16810	17998

Average capital Employed (Equity Approach) = $\frac{15010+16348}{2}$ = 15679

Average capital employed (long term fund Approach) = $\frac{16810+17998}{2}$ = 17404

Valuation of Goodwill [Equity Fund Approach]

	₹in lakhs
Future maintainable profits	2210.28
Normal capital employed = $\frac{2210.28}{0.13}$	17002.15
Less: Actual capital employed	15679.00
Goodwill	1323.15

Valuation of Goodwill [Long Term Fund Approach]

	₹in lakhs
Future maintainable profits	2507.28
Normal capital employed = $\frac{2507.28}{0.10}$	25072.80
Less: Actual capital employed	17404.00
Goodwill	7668.80

Comment

As actual capital employed is less than normal capital employed, goodwill exists.

Adverse effect on goodwill = (7668.80 – 1323.15) = ₹6345.65 lakhs.

This means that the leverage ratio of this entity, as computed with reference to normal long-term capital employed, is lower than the industry standard.

Q. 7. (a) The following data relates to Sunrise Ltd. profit & loss data

	Year 2012 ₹ in lakhs	**Year 2013 ₹ in lakhs**
Turnover	**19900**	**23600**
Pre-tax accounting Profit	**4200**	**5300**
Taxation	**1260**	**1600**
Profit after tax	**2940**	**3700**
Dividends	**1000**	**1200**
Retained Earnings	**1940**	**2500**

Balance Sheet Data

	Year 2012 ₹ in lakhs	**Year 2013 ₹ in lakhs**
Fixed Assets	**7400**	**9600**
Net Current Assets	**8000**	**10000**
	15400	**19600**
Finance by shareholders funds	**11900**	**14400**
Medium and long term Bank loan	**3500**	**5200**
	15400	**19600**

Pre-tax accounting profit is taken after deducting the economic depreciation of the company's fixed Assets (also the depreciation used for tax purposes)

Additional Information

- **Economic depreciation was ₹1900 lakh in 2012 and ₹2100 lakh in 2013.**
- **Interest expenses were ₹260 lakh in 2012 and ₹360 lakh in 2013.**
- **Other non cash expenses were ₹640 lakh in 2012 and ₹720 lakh in 2013.**
- **The tax rate in 2012 and 2013 was 30%.**
- **Sunrise Ltd. has non-capitalized leases valued at ₹700 lakh in each year 2012 – 2013.**
- **The company's pre-tax cost of debt was estimated as 7% in 2012 and 8% in 2013.**
- **The company's cost of equity was estimated as 15% in 2012 and 17% in 2013.**
- **The target capital structure is 80% equity and 20% debt.**
- **Balance sheet capital employed at the end of 2011 was ₹13900 lakh.**

Estimate the economic value added for Sunrise Ltd. for 2012 and 2013.

(b) A company belongs to a risk class for which the appropriate capitalization rate is 10 per cent. It currently has outstanding 25000 shares selling at ₹100 each. The firm is contemplating the declaration of dividend of ₹5 per cent share at the end of the current financial year. The company expected to have a net income of ₹2.5 lakhs and has a proposal for making a new investment of ₹5 lakhs.

Show that under the Modigliani and Millar assumptions, the payment of dividend does not affect the value of the firm.

[7+8]

Answer: 7. (a)

EVA = NOPAT – (capital employed x cost of capital)

Computation of NOPAT

	Year 2012 ₹in lakhs	Year 2013 ₹in lakhs
Profit after tax	2940	3700
Add: Non Cash expenses	640	720
Interest after tax (1 – 0.30)	182	252
	3762	4672

Computation of capital employed

	Year 2012 ₹in lakhs	Year 2013 ₹in lakhs
Capital employed at end of 2011 + leases [13900 + 700]	14600	
Book value of shareholders fund + Bank loan + Leases [11900 + 3500 + 700]		16100

Computation of Weighted average

	Year 2012 ₹in lakhs	Year 2013 ₹in lakhs

Cost of capital: 0.80 x 0.15 + 0.20 x 0.07 (1 – 0.30) 0.80 x 0.17 + 0.20 x 0.08 (1 – 0.30)	12.98%	 14.72%

Computation of EVA

	Year 2012 ₹in lakhs	Year 2013 ₹in lakhs
[3762 – (14600 x 12.98%)] [4672 – (16100 x 14.72%)]	1866.92	 2302.08

The company has created significant value in both 2012 and 2013.

Answer: 7. (b)

As per MM Model

When dividends are paid

$$P_o = \frac{1}{1+K_e} x (D_1+P_1)$$

Or, $100 = \frac{1}{1+0.10} x (5+P_1)$

Or, $P_1 = 105$

New shares to be issued

$mP_1 = I – (E - nD_1)$

or, $m\ 105 = 5,00,000 – (2,50,000 – 1,25,000)$

$m = 3571$ shares approx

Therefore, current value of the firm

$$nP_o = \frac{1}{1+K_e}\{(n+m)\ P_1 – I + E\}$$

$$= \frac{1}{1+0.10}\{(25,000 + 3,571) \times 105 – 5,00,000 + 2,50,000\}$$

nP_o = ₹24,99,959 or ₹25,00,000 (approx)

When dividends are not paid

$$P_o = \frac{1}{1+K_e} x (D_1+P_1)$$

Or, $100 = \frac{1}{1+0.10} x (0+P_1)$

Or, P_1 = ₹110

New shares to be issued

$mP_1 = I – (E - nD_1)$

or, $m\ 110 = 5,00,000 – (2,50,000 – n \times 0)$

$m = 2273$ shares

Therefore, current value of the firm

$nP_o = \frac{1}{1+K_e}\{(n+m)\ P_1 - I + E\}$

$= \frac{1}{1+0.10}\{(25,000 + 2,273) \times 110 - 5,00,000 + 2,50,000\}$

nP_o = ₹25,00,027 or ₹25,00,000 (approx)

Comment:
Thus under this approach the payment of dividend or otherwise, does not affect the value of the firm.

Q. 8. (a) An equipment is leased for 3 years and its useful life is 5 years. Both the cost and the fair market value of the equipment are ₹6,00,000. The amount will be paid in 3 installments and a the termination of lease, lessor will get back the equipment. The unguaranteed residual value at the end of 3 year is ₹80,000. The (internal rate of return) IRR of the investment is 10%. The present value of annuity factor of Re. 1 due at the end of 3rd year at 10% IRR is 2.4868. the present value of Re. I due at the end of 3rd year at 10% rate of interest is 0.7513.

(i) State with reason whether the lease constitutes finance lease.
(ii) Calculate unearned finance income.

(b) Calculate the price of 3 month ABC futures, if ABC (FV ₹10) quotes ₹260 on NSE, and the 3 month futures prices quotes at ₹266, and the one month borrowing rate is given as 15% and the expected annual dividend yield is 25% p.a. payable before expiry.

(c) M/s. Gopi Industries is planning to issue a bond series on the following terms –

Face value ₹100

Terms of maturity 10 years

Yearly coupon rate

Years	Rate
1-4	8%
5-8	9%
9-10	13%

The current market rate of similar bonds is 14% per annum. The company proposes to price the issue in such a manner that is can yield 15% compounded rate of return to the investors. The company also proposes to redeem the bonds at 5% premium on maturity. You are required to determine the issue price of the bonds.

Year	1	2	3	4	5	6	7	8	9	10
P.V. factor of ₹1 @ 15%	0.8695	0.7561	0.6575	0.5717	0.4971	0.4323	0.3759	0.3269	0.2842	0.2471

[(2+2) +2+4]

Answer: 8. (a)

(i) Situations under which a lease can be classified as finance lease are –

(a) Transfer of ownership by the end of the lease term.

(b) Leassee being given the purchase option at lower price.

(c) Lease term is for the major part of the economic life of the asset.

(d) Lease is non-cancellable

(e) Present value of the MLP is substantially equal to FV of leased asset.

Since the present value of MLP is substantially equal to FV of leased asset, the lease appears to be finance lease.

(ii) P_v of MLP = FV - P_v of residual value = 6,00,000 – (80,000 x 0.7513) = ₹5,39,896.

Gross investment in lease = MLP + GRV + UGRV = (539896 / 2.4868 x 3 years) + 0 + 80,000
= 7,31,314

Unearned Finance Income (UFI) = GIL - P_v of GIL
Where, P_v of GIL = P_v of MLP + P_v of UGRV
= 539896 + (80000 X 0.7513)
= 6,00,000

Unearned Finance Income = 731314 – 600000
= ₹131314

Answer: 8. (b)

Future's Price = Sport + Cost of carry – Dividend
= 260 + 260 x 0.15 x 0.25 – 2.5
= ₹267.25

Note: Entire 25% dividend is payable before expiry, which is ₹2.50.

Analysis:
Thus we see that futures price by calculation is ₹267.25 and is quoting at ₹266 in the exchange.

Hence, fair value of futures more than the actual future price.

Futures undervalued in the market and it is advised to buy.

Answer: 8. (c)

The issue price of the bonds will be the sum of present value of interest payments during 10 years up to its maturity and present value of redemption value of bonds, discounted at the rate of planned yield.

Year	Cash outflow	P_{VIF} @ 15%	P_V
1	8	0.8695	6.956
2	8	0.7561	6.0488

3	8	0.6575	5.26
4	8	0.5717	4.5736
5	9	0.4971	4.4739
6	9	0.4323	3.8907
7	9	0.3759	3.3831
8	9	0.3269	2.9421
9	13	0.2842	3.6946
10	13 + 105 = 118	0.2471	29.1578
			70.3806

Therefore, bonds should be priced at issue price of Bonds ₹70.38.

Q. 9. (a) ABC Ltd. acquire 40% of XYZ Ltd's shares on April 2, 2013, the price paid was ₹ 2,80,000. XYZ Ltd's shareholder equity shares are as follows:

Equity Shares (Paid-up)	**1,00,000**
Share Premium	**3,00,000**
Retained Earning	**1,00,000**
	5,00,000

Further XYZ Ltd. reported a net income of ₹ 60,000 and paid dividends of ₹ 20,000. ABC Ltd. has subsidiary on 31.03.2011. Calculate the amount at which the investment in XYZ Ltd. should be shown in the consolidated Balance Sheet of ABC Ltd as on 31.03.2014.

(b) State with reference to accounting standard, how you will value the inventories in the following cases:

(i) In a production process, normal waste is 5% of input 10,000 MT of input were put in process resulting in a wastage of 600 M.T. cost per MT of input is ₹2000. The entire quantity of waste is on stock at the end of the year.

(ii) Per Kg. of finished goods consisted of :

Material Cost	**₹50 per Kg.**
Direct labour cost	**₹10 per Kg.**
Direct variable production overhead	**₹5 per Kg.**

Fixed production charges for the year on normal capacity of 50,000 Kgs. are ₹5,00,000. 1,000 Kgs of finished gods are on stock at the year end.

(c) A company has purchased plant and machinery in the year 2010-11 for ₹90 lakhs. A balance of ₹10 lakhs is still payable to the supplier for the same. The suppler waived off the balance amount during the financial year 2013-14. The company treated it as income and credited to profit and loss account during 2013-14. Whether accounting treatment of the company is correct. If not, state with reasons.

[4+(2+2)+2]

Answer: 9. (a)

As per AS-23 when the investor company prepares the consolidated Balance Sheet, the investment in associate i.e., XYZ Ltd. shall be carried by equity method and goodwill and capital reserve to be identified and disclosed.

Extract of consolidated Balance Sheet of ABC Ltd. as on 31.03.2014

Liabilities	₹	Assets	₹
		Investment in XYZ Ltd. Associates 2,16,000 Goodwill 80,000	2,96,000

Goodwill identified = (2,80,000 – 40% of 5,00,000) = ₹80,000

Carrying amount of investment on 31.03.2013 as per equity method.

= ₹ (2,80,000 + [40% of 60,000] – [40% of 20,000])

= ₹ (2,80,000 + 24,000 – 8,000)

= ₹ 2,96,000.

Answer: 9 (b)

i) As per para 13 of AS 2 (Revised), abnormal amounts of waste materials, labour or other production costs are excluded from cost of inventories and such costs are recognized as expenses in the period in which they are incurred.
In this case, normal waste is 500 MT and abnormal waste is 100 MT. The Cost of 500 MT. will be included in determining the cost of inventories (finished goods) at the year end. The cost of abnormal waste amounting to ₹2,00,000 (100MT x ₹2000) will be charged in the profit and loss statement.

ii) In accordance with paras 8 and 9 of AS 2 (Revised), the costs of conversion include a systematic allocation of fixed and variable production overheads that that are incurred in converting materials into finished goods. The allocation of fixed production overhead for the purpose of their inclusion in the costs of conversion is based on the normal capacity of the production facilities.

Thus, cost per Kg. of finished goods can be computed as follows:

Particulars	Amount (₹)
Material cost	50
Direct labour cost	10
Direct variable production overhead	5
Fixed production overhead = $\left(\frac{5,00,000}{50,000}\right)$	10
	75

Thus the value of 1000 Kgs. of finished goods on stock at the yearend will be
= (₹75 x 1000 Kgs.) = ₹75,000.

Answer: 9. (c)

As per para 9.1 of AS – 10 the changes subsequent to its acquisition or construction on account of exchange fluctuation, price adjustments, changes in duties or similar factors.

After considering the above the treatment done by the company is not correct. ₹10 lakhs should be deducted from the cost of fixed assets.

Q. 10. (a) X Ltd. expects that a plant has become useless which is appearing in the books at ₹40 lakhs gross value. The company charges SLM – depreciation on a period of 10 years estimated life and estimated scrap value of 3%. At the end of the 7th year the plant has been assessed as useless. Its estimated net realizable value is ₹12,40,000. Determine the loss/gain on retirement of the fixed assets.

(b) ABC Ltd. has substantial cash flow and until the surplus funds are utilized to meet the future capital expenditure, likely to happen after several months, are invested in a portfolio of short-term investments, details for which are given below:

Investment	No. of Shares	Beta	Market Price per share	Expected yield
A	8,000	1.16	4.29	19.50%
B	10,000	2.28	2.92	24.00%
C	11,200	0.90	2.17	17.50%
D	14,500	1.50	3.14	24.00%

The current Market Return is 20% and the Risk Free Rate is 12%
Required to:
(i) Calculate the Risk of ABC's short-term investment portfolio relative to that of the market;
(ii) Whether ABC should change the composition of its portfolio.

(d) An unquoted long term investment is carried in the books at a cost of ₹4 lakhs. The published accounts of the unlisted company received in May 2013 showed that the company was incurring cash losses with declining market share and the long term investment may not fetch more than ₹ 40,000. How would you deal with this in financial statements.

[3+(2+2)+3]

Answer: 10. (a)

	₹
Cost of the plant	40,00,000
Estimated realizable value (4000000 x 3%)	(1,20,000)
Depreciable amount	38,80,000

Depreciation per year = 3,88,000
Written down value at the end of 7th year = 40,00,000 – (3,88,000 x 7) = ₹12,84,000

As per para 14.2 of AS – 10, items of fixed assets that have been retired from active use and are held for disposal are stated at the lower of their net book value and net realizable value and are shown separately in the financial statements. Any expected loss is recognized immediately in the profit and loss statement. Accordingly, the loss of ₹(12,84,000 – 12,40,000) = ₹44,000 to be shown in the profit and loss account and asset of ₹12,40,000 to be shown in the balance sheet separately.

Answer: 10. (b)

(i)

Investment	No. of Shares	MPS	Value of Portfolio
A	8,000	4.29	34320
B	10,000	2.92	29200
C	11,200	2.17	24304
D	14,500	3.14	45530
			133354

$$\beta = \left[1.16x\frac{34320}{133354}\right] + \left[2.28x\frac{29200}{133354}\right] + \left[0.90x\frac{24304}{133354}\right] + \left[1.50x\frac{45530}{133354}\right] = 1.47$$

(ii)

Investment	$K_e = R_F + \beta (R_M - R_F)$	Expected Yield	Comment
A	= 12% + 1.16 (20% - 12%) = 21.28%	19.50%	Overpriced = Sell
B	= 12% + 2.28 (20% - 12%) = 30.24%	24%	Overpriced = Sell
C	= 12% + 0.90 (20% - 12%) = 19.20%	17.50%	Overpriced = Sell
D	= 12% + 1.50 (20% - 12%) = 24%	24%	Correctly Price = Buy/Hold

Answer: 10. (c)

Investments classified as long term investments should be carried in the financial statements at cost. However, provision for diminution shall be made to recognize a decline, other than temporary, in the value of the investments, such reduction being determined and made for each investment individually.

Para 17 of AS-13 Accounting for investments states that indicators of the value of an investment are obtained by reference to its market value, the investee's assets and results and the expected cash flows from the investment. On these bases, the facts of the given case clearly suggest that the provision for diminution should be made to reduce the carrying amount of long-term investment to ₹40000 in the financial statements for the year ended 31st March, 2014.