FINAL EXAMINATION

GROUP IV

(SYLLABUS 2012)

SUGGESTED ANSWERS TO QUESTIONS

JUNE 2014

Paper- 20 : FINANCIAL ANALYSIS & BUSINESS VALUATION

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

The figures in the margin on the right side indicate full marks.

Section A

Answer **Question No. 1** and **Question No. 2** which are compulsory carrying 15 marks each and **any two** from the rest in this Section.

1. The following financial data for five years has been extracted from the Annual Report 2012-13 of one of the world's largest generic pharmaceutical companies having a strong presence in over 170 countries. Though the company's mission is 'To be a leading global healthcare company which uses technology and innovation to meet everyday needs of all patients', yet it also wants to keep its shareholders happy by giving them a fair rate of return. For gauging return for shareholders, the company is using Return on Equity (ROE) as one of the metrics of performance evaluation. Because of intense competition, in recent years, its ROE is under pressure and to maintain the level of ROE, the company is changing its business model - in that, it is varying its margins, assets utilization and leverage.

(i) You are required to use DU PONT Analysis using the financial data given below and show how the ROE of the company is changing due to change in its margins, assets utilization and leverage over the period of five years. 12

(ii) You are also required to give your comments on the trend on these parameters. 3

(₹ in Crores)

Statement of Profit and Loss	2009	2010	2011	2012	2013
Total Revenue	5,315.82	5,713.24	6,422.73	7,125.80	8,431.55
Profit before Tax	901.31	1,324.99	1,151.39	1,421.46	2,011.86
Profit after Tax	776.81	1,081.49	960.39	1,123.96	1,507.11
Dividend	155.46	160.58	224.81	160.58	160.58
Tax on Dividend	26.42	26.67	36.72	26.05	27.29
Retained Earnings	594.93	894.24	698.86	937.32	1,319.24

Balance Sheet	2009	2010	2011	2012	2013
ASSETS:					
Fixed Assets	2,358.81	2,695.41	3,120.72	3,346.11	3,768.63
Investments (Current and Non-Current)	81.32	265.10	570.65	1,035.15	2,601.82
Other Net Assets (Current and Non-Current	3,015.01	3,137.80	3,574.51	3,413.67	3,746.08

Total	**5,455.14**	**6,098.31**	**7,265.88**	**7,794.93**	**10,116.53**

EQUITY AND LIABILITIES:					
Share Capital	**155.46**	**160.58**	**160.58**	**160.58**	**160.58**
Reserves and Surplus	**4195.29**	**5753.51**	**6452.37**	**7389.70**	**8708.94**
Net Worth	**4350.75**	**5914.09**	**6612.95**	**7550.28**	**8869.52**
Loan Funds (Current and Non-Current)	**940.24**	**5.07**	**440.48**	**12.20**	**965.81**
Deferred Tax	**164.15**	**179.15**	**212.45**	**232.45**	**281.20**
Total	**5455.14**	**6098.31**	**7265.88**	**7794.93**	**10116.53**

Answer:

1. Extended DuPont Analysis provides the drivers of ROE in terms of margins, assets utilization and leverage thereby provides important information in understanding business model of a company. Extended DuPont Analysis decomposes ROE into three components as given below:
   ROE = (PAT / Sales) x (Sales / Assets) x (Assets / Equity)

   The above equation shows that ROE is driven by Profit Margin (PAT / Sales), Assets Utilization or Assets Turnover (Sales / Assets) and how much of the assets are financed by equity and debt, i.e. a measure of leverage (Assets / Equity)

   Using the above decomposition, we obtain various decomposed components of ROE over a period of five years which are given below:

	2009	**2010**	**2011**	**2012**	**2013**
ROE	17.848%	18.287%	14.527%	14.878%	16.989%
PAT / SALES	14.613%	18.930%	14.953%	15.773%	17.875%
SALES TO ASSETS	0.974	0.937	0.884	0.914	0.833
ASSETS TO EQUITY (NET WORTH)	1.254	1.031	1.099	1.032	1.141

   The Company saw a sharp decline in ROE in year 2011 which was primarily due to reduction in Profit Margins (from 18.93% to 14.953%) as well as reduction in the assets utilization; which may hint that the company (or perhaps the industry) might be having a tough time in pushing sales; situation improved in 2012 and 2013 and the main driver was Profit Margin. The big increase in ROE in 2013 came primarily from Profit Margin and Leverage; had the company increased its assets utilization ROE would have increased further; seeing the trends it is clear that the biggest challenge before the company is to increase assets utilization.

2. Following are the financial data for last four years of a company:

				Amount ₹ in lakhs
Year	**2010**	**2011**	**2012**	**2013**
Equity Share (₹10 each)	**100**	**100**	**100**	**100**
Reserve	**100**	**100**	**100**	**100**
10% Debt	**100**	**120**	**180**	**200**
EBIT	**20**	**30**	**56**	**70**
P/E Ratio	**10**	**12**	**10**	**12**
Tax Rate	**30%**			

Find for all the years:

(a) NOP AT, ROCE, EPS, Market value per share, ROE, Earnings Yield, Market value to Book value ratio and comment on the profitability and growth expectation. 11

(b) Debt-Equity (D/E) ratio and make an analysis of financial risk over the years based on D/E ratio and DFL (Degree of Financial Leverage) and explain if you find any difference in the interpreted results. 4

Answer:

2. (a)

(Amount in lakhs / ₹ in lakhs)

Year	2010	2011	2012	2013
EBIT	20	30	56	70
Interest	10	12	18	20
EBT	10	18	38	50
DFL = EBIT/EBT	2	1.666667	1.473684	1.4
Equity Shareholders Funds	200	200	200	200
Debt Equity Ratio	0.5	0.6	0.9	1
EAT	7	12.6	26.6	35
No of Shares	10	10	10	10
EPS	0.7	1.26	2.66	3.5
Market Value per Share	7	15.12	26.6	42
NOPAT	14	21	39.2	49
CE	300	320	380	400
ROCE	4.666667	6.5625	10.31579	12.25
Book Value	20	20	20	20
Market Value to Book Value	0.35	0.756	1.33	2.1
Earn. Yield	10	8.333333	10	8.333333
ROE	3.5	6.3	13.3	17.5

Alternatively ROCE can also be calculated as follows:

ROCE (EBIT/ Capital employed)	6.66667	9.375	14.73684	17.5

(b) Financial risk is increasing over the years as indicated by D/E ratio; just the reverse is indicated by DFL. DFL recognizes the firm's increasing profit generating ability in reducing the riskiness of the increased debt.

Percentage increase year to year basis:

Year	2011	2012	2013
NOPAT	50	86.67	25
ROCE	40.63	57.19	18.75
ROE	80	111.11	31.58
EPS	80	111.11	31.58
MPS	116	75.93	57.90

(i) Earning Yield is 10 in the year 2010, however decreased to 8.333333 in the year 2011, again increased to 10 in the year 2012, and decreased to 8.333333 in the year 2013.

(ii) Market Value to Book Value ratio is 0.35 in the year 2010, however increased to 0.756 in the year 2011, and again increased to 1.33 and 2.1 in the year 2012 and 2013.

3. M. Ltd. is considering a new product line to supplement its range line. It is anticipated that the new product line will involve cash investment of ₹ 7,00,000 at time 0 and ₹ 10,00,000 in Yr 1. After tax cash inflows of ₹ 2,50,000 are expected in year 2, ₹ 3,00,000 in year 3, ₹ 3,50,000 in Yr 4, and ₹ 4,00,000 in each year thereafter through year 10. Though the product line might be viable after year 10, the company prefers to be conservative and end all calculation at that time.

(i) If the required rate of return is 15%, what is the NPV of the project and is it acceptable? 3

(ii) What is its IRR? 3

(iii) What would be the case if the required rate of return was 10%? 2

(iv) What is the project's Pay Back Period? 2

Years	P.V. Factor Year 1	P.V. Factor Year 2	P.V. Factor Year 3	P.V. Factor Year 4	PVIFA for 10 years
Discounting Factor @ 13%	**0.885**	**0.783**	**0.693**	**0.613**	**5.426**
Discounting Factor @ 14%	**0.877**	**0.769**	**0.675**	**0.592**	**5.215**
Discounting Factor @ 15%	**0.870**	**0.756**	**0.658**	**0.572**	**5.020**

Answer:

3. (i)

YEAR	CASH FLOW (₹)	PRESENT VALUE DISCOUNT FACTOR (15%)	PRESENT VALUE (₹)
0	(700000)	1.000	(700000)
1	(1000000)	0.870	(870000)
2	250000	0.756	189000
3	300000	0.658	197400
4	350000	0.572	200200
5-10 (Total of 6 Years)	400000	2.164*	865600**
		Net Present Value	₹(1,17,800)

Because the net present value is negative, the project is unacceptable.

(ii) The internal rate of return is 13.21%. if the trial and error method were used, we have the following:

YEAR	CASH FLOW (₹)	DISCOUNT FACTOR (14%)	PRESENT VALUE (14%) (₹)	DISCOUNT FACTOR (13%)	PRESENT VALUE (₹) (13%)
0	(7,00,000)	1.000	(7,00,000)	1.000	(7,00,000)
1	(10,00,000)	0.877	(8,77,000)	0.885	(8,85,000)
2	2,50,000	0.769	192,250	0.783	1,95,750
3	3,00,000	0.675	2,02,500	0.693	2,07,900
4	3,50,000	0.592	2,07,200	0.613	2,14,550
5-10	4,00,000	2.302*	9,20,800**	2.452*	9,80,800**
		Net Present Value =	₹ (54,250)		₹14,000

*PVIFA for 10 yrs minus PVIFA for 4 years.

**Total for years 5-10

To approximate the actual rate, we interpolate between 13 & 14 percent as follows

Discounting Factor (%)	NPV (₹)
13	14,000
IRR (X)	Zero
14	-54,250

By simple interpolation we get X - 13 / 14 —13 = 0 - 14,000 / -54,250 - 14,000

Or X(IRR) = 13.205 or 13.21%.
Because the internal rate of return is less than the required rate of return, the project would not be acceptable.

(iii) The project would be acceptable as then IRR (13.21%) will exceed the required rate of return (10%)

(iv) Payback period = 6 years (-₹ 7,00,000 - ₹ 10,00,000 + ₹ 2,50,000 + ₹ 3,00,000 + ₹ 3,50,000 + ₹ 4,00,000 + ₹ 4,00,000 = 0)

4. (a) Compute the Liquid Ratio from the following information for the year ended 31st March, 2014 and also interpret the result: 6

Particulars	₹
Land and Building	**55,000**
Plant and Machinery	**40,000**
Stock	**30,000**
Debtors	**42,000**
Bills receivable	**25,000**
Prepaid Expense	**5,000**
Cash at bank	**15,000**
Cash in hand	**10,000**
Creditors	**25,000**
Outstanding Salary	**5,000**
Bank Overdraft	**3,000**
Bills payable	**4,000**
Proposed Dividend	**6,000**
Long Term Liabilities	**46,000**
Provision for Bad debts	**2,000**

(b) Using Altman's Multiple Discriminant Function, calculate Z - score of Neel & Co. Ltd., where the five accounting ratios are as follows and comment about its financial position: 4
Working Capital to Total Assets = 0.250
Retained Earnings to Total Assets = 50%
EBIT to Total Assets =19%
Book Value of Equity to Book Value of Total Debt = 1.65
Sales to Total Assets = 3 times

Answer:

4. (a)

Compute the Liquid Assets and Liquid Liabilities

Liquid Assets	₹	₹
Debtors	42,000	
Less : Provision for Bad debts	2,000	40,000
Bills receivable		25,000
Cash at Bank		15,000
Cash in Hand		10,000
		90,000

Liquid Liability	₹	₹
Creditors		25,000
Outstanding Salary		5,000
Bills payable		4,000
Proposed Dividend		6,000
		40,000

Liquid ratio = Liquid Assets / Liquid Liabilities = ₹90,000 / ₹ 40,000 = 2.25 : 1

Interpretation and Significance:

It has already been stated that liquid ratio is, practically, the true test of liquidity. It measures the capacity of the firm to pay - off its liabilities as soon as they become mature for payment. Thus, a high liquid ratio indicates that the firm is quite able to pay - off its current obligations without difficulty, whereas, a low liquid ratio will create an opposite situation i.e. it is not possible for the firm to pay - off its current obligations, which indicates the liquidity position is not sound at all.

Although it is stated that a 1 : 1 ratio is considered as good but the same cannot safely be concluded since if percentage of debtors is more than other liquid assets, and if the same is not realized (if the debtors do not pay), it indicates that problem will arise to liquidate current obligations although the normal liquid ratio is maintained. Similarly, a low liquid ratio does not always mean a bad liquidity position since stocks are not absolutely non-liquid in character. Thus, a high liquid ratio does not always prove a satisfactory liquidity position if the firm has slow paying customers, and vice versa in the opposite case i.e. a low liquid ratio may yet indicate a sound liquidity position if the firm has fast – moving stocks.

(b) As the Book Value of Equity to Book Value of Total Debt is given in the problem in place of Market value of equity to Book Value of Total Debt, the value of Z - score is to be computed as per Altman's 1983 Model of Corporate Distress Prediction instead of Altman's 1968 Model of Corporate Distress Prediction that is otherwise followed.
As per Altman's Model (1983) of Corporate Distress Prediction,
$Z = 0.717X_1 + 0.847X_2 + 3.107X_3 + 0.420X_4 + 0.998X_5$
Here, the five variables are as follows:
X_1 = Working Capital to Total Assets = 0.250
X_2= Retained Earnings to Total Assets = 0.50
X_3= EBIT to Total Assets = 0.19
X_4 = Book Value of Equity Shares to Book Value of Total Debt = 1.65
X_5 = Sales to Total Assets = 3 times
Hence, Z - score =(0.717 x 0.25) + (0.847 x 0.50) + (3.107 x0.19) + (0.420 x1.65) + (0.998 x3)
= 0.17925 + 0.4235 + 0.59033 + 0.693 + 2.994 = 4.88
Note: As the calculated value of Z - score is much higher than 2.99, it can be strongly predicted that the company is a non - bankrupt company (i.e. non— failed company)

5. The following information is given regarding Shaan Ltd. Some key ratios are provided for the particular industry to which Shaan Ltd. belongs. You are required to calculate the relevant ratios for Shaan Ltd., compare them with that particular industry norms and give the comments on the performance of the company. 10
The following balances are available from the books of accounts of Shaan Ltd. as at 31st March, 2014:
Equity Share Capital ₹ 27,00,000, 12% debentures ₹ 5,00,000, Sundry Creditors ₹ 3,80,000, bills payable ₹ 3,20,000 and other current liabilities ₹ 2,00,000, Net fixed assets ₹ 17,00,000, cash ₹ 4,00,000, Sundry Debtors ₹ 7,50,000 and stock ₹ 12,50,000.
The sales of the company for the year ending 31.03.2014 amounted to ₹ 60,00,000 and the gross profit was ₹ 17,00,000.

Industry Norms	Ratio Considered
Current Ratio (CA/CL)	**2.4**
Sales/Debtors	**7.7**
Sates/Stock	**7.9**
Sales/Total assets	**2.39**
Gross Profit Ratio	**36%**

Answer:

5. (a) Calculation of Ratios:

(1) Current Ratio = $\frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{₹24,00,000}{₹9,00,000} = 2.67 : 1$

(2) Sales / Debtors = $\frac{\text{Sales}}{\text{Debtors}} = \frac{₹60,00,000}{₹7,50,000} = 8.00$

(3) Sales / Stock = $\frac{\text{Sales}}{\text{Stock}} = \frac{₹60,00,000}{₹12,50,000} = 4.80$

(4) Sales / Total Assets = $\frac{\text{Sales}}{\text{Total Assets}} = \frac{₹60,00,000}{₹41,00,000} = 1.46$

(5) Gross Profit Ratio = $\frac{\text{Gross Profit}}{\text{Sales}} \times 100 = \frac{₹17,00,000}{₹60,00,000} \times 100 = 28.33\%$

Comparison of Shaan Ltd's ratios with Industry Norms

Ratio	Shaan Ltd.	Industry	Comments
(1) Current Ratio	2.67	2.4	The current ratio of the company indicates better short - term solvency position as compared to the industry. But the composition of the current assets has to be analysed to ascertain any excess investments in current assets.
(2) Sales / Debtors	8.00	7.7	The company's average debtor's collection period is marginally less than the industry and it indicates better management of receivables.
(3) Sales / Stock	4.80	7.9	It indicates excess carrying of inventory as compared to the industry. The low turnover ratio may also be due to lower sales volume.
(4) Sales/ Total Assets	1.46	2.39	The company has either excess investments in fixed assets or lower sales performance.
(5) Gross Profit Ratio	28.33%	36%	The gross profit margin is much less than the industry average, it may be due to high cost of production, lower selling price or weak market penetration due to which company has to keep lower margins to achieve sales, etc.

Section B

Answer **Question No. 6** and **Question No. 7** which are compulsory carrying 15 marks each and **any two** from the rest in this Section.

6. (a) Bihari Ltd. is issuing 5% ₹ 25 at par preference shares that would be convertible after three years to equity shares at ₹ 27. If the current market price of equity shares is ₹ 13.25, what is the conversion value and conversion premium?
The convertibles are trading at ₹ 17.75 in the market. Assume expected return as 8%. 6

(b) Following is the information of two companies for the year ended 31st March, 2014:

Particulars	Company A	Company B
Equity shares of ₹ 10/- each	₹ 8,00,000	₹ 10,00,000
10% Pref. Shares of ₹ 10/- each	₹ 6,00,000	₹ 4,00,000
Profit after tax	₹ 3,00,000	₹ 3,00,000

Assume the market expectation is 18% and 80% of the profits are distributed.
Required—

(i) What is the rate you would pay for the equity shares of each company? 3
(a) If you are buying a small lot.
(b) If you are buying controlling interest shares.

(ii) If you plan to invest only in preference shares which company's preference shares would you prefer? 3

(iii) Would your rates be different for buying small lot, if the company 'A' retains 30% and company 'B' 10% of the profits. 3

Answer:

6. (a) Conversion ratio = $\frac{\text{Par value of Conversion security}}{\text{Conversion price}}$ = 25/27 = 0.9259

Conversion value = (Conversion ratio) x (Market value per share of the common stock)
= (0.9259) x (₹ 13.25) = ₹12.27

Now let us find the value as straight preferred stock = 1.25 / 0.08 = ₹ 15.63 (Preference dividend / expected return)

$$\text{Conversion premium (in absolute terms)} = \begin{bmatrix}\text{Market Price of}\\ \text{the convertible}\\ \text{preferred stock}\end{bmatrix} - \begin{bmatrix}\text{higher of the}\\ \text{security value and}\\ \text{conversion value}\end{bmatrix}$$

= ₹ 17.75 – ₹ 15.63 = ₹ 2.12

(b) (i) (a) Buying a small lot of equity shares: If the purpose of valuation is to provide data base to aid a decision of buying a small (non-controlling) position of the equity of the companies, dividend capitalization method is most appropriate. Under this method, value of equity share is given by:

$$\frac{\text{Dividend per share}}{\text{Market capitalisation rate}} \times 100$$

Company A : ₹ $\frac{2.4}{18}$ x 100 = ₹ 13.33

Company B : ₹ $\frac{2.08}{18}$ x 100 = ₹ 11.56

(b) Buying controlling Interest equity shares: If the purpose of valuation is to provide data base to aid a decision of buying controlling interest in the company, EPS capitalization method is most appropriate. Under this method, value of equity is given by:

$$\frac{\text{Earning per share (EPS)}}{\text{Market capitalisation rate}} \times 100$$

Company A : ₹ $\frac{3}{18}$ x 100 = ₹ 16.67

Company B : ₹ $\frac{2.6}{18}$ x 100 = ₹ 14.44

(ii) Preference Dividend coverage ratios of both companies are to be compared to

make such decision.
Preference dividend coverage ratio is given by:

$$\frac{\text{Profit after tax}}{\text{Preference Dividend}} \times 100$$

Company A : ₹ $\frac{3,00,000}{60,000}$ = 5 times or 500%

Company B : ₹ $\frac{3,00,000}{40,000}$ = 7.5 times or 750%

If we are planning to invest only in preference shares, we would prefer shares of B Company as there is more coverage for preference dividend.

(iii) Yes, the rates will be different for buying a small lot of equity shares, if the company 'A' retains 30% and company 'B' 10% of profits.
The new rates will be calculated as follows:

Company A : ₹ $\frac{2.1}{18} \times 100$ = ₹ 11.67

Company B : ₹ $\frac{2.34}{18} \times 100$ = ₹ 13.00

Working Notes:

1. Computation of earnings per share and dividend per share (companies distribute 80% of profits)

	Company A	Company B
Profit after tax	3,00,000	3,00,000
Less: Preference dividend	60,000	40,000
Earnings available to equity shareholders (A)	2,40,000	2,60,000
Number of Equity Shares (B)	80,000	1,00,000
Earnings per share (A/B)	3.0	2.60
Retained earnings 20%	48,000	52,000
Dividend declared 80% (C)	1,92,000	2,08,000
Dividend per share (C/B)	2.40	2.08

2. Computation of Dividend per share (Company A 30% and Company B 10% of profits)

	Company A	Company B
Earnings available to equity shareholders	₹2,40,000	₹2,60,000
Number of Equity Shares	80,000	1,00,000
Retained Earnings	₹72,000	₹26,000
Dividend Distributed	₹1,68,000	₹2,34,000
Dividend per share	₹2.10	₹2.34

7. (a) Consider two firms that operate independently and have the following financial characteristics:

(₹ in Millions)

	Firm A	**Firm B**
Revenues	**8,000**	**4,000**
Cost of goods sold	**6,000**	**2,400**
EBIT	**2,000**	**1,600**
Expected growth rate	**4%**	**6%**

Cost of capital	9%	10%

Both firms are in steady state with capital spending offset by depreciation. Both firms have an effective tax rate of 50% and are financed only by equity.

Scenario I

Assume that the combining of the two firms will create economies of scale that will reduce the cost of goods sold to 65%.

Scenario II

Assume that as a consequence of the merger the combined firm is expected to increase its future growth to 6% while cost of goods sold remains at 70% and does not come down to 65%.

Scenario I and Scenario II are mutually exclusive.

You are required to:

(i) Compute the value of both the firms as separate entities. 3

(ii) Compute the value of both the firms together if there were absolutely no synergy at all from the merger (Scenario III). 1

(iii) Compute the cost of capital and the expected growth rate for the combined entity. 2

(iv) Compute the value of synergy in Scenario I and Scenario II. 3

(b) From the following information and particulars of Salim Ltd. for the year ended 31.03.2014, calculate—

(1) Book Value per share, (2) Earnings per share, (3) Dividend yield, (4) Earning yield, (5) P/E Ratio and (6) P/B Ratio. 6

The information which is available from the Books of Accounts of Salim Ltd. is as follows:

(All in ₹ lakhs)

Sales - 18.26, Cost of goods sold - 10.25, Administrative expenses - 0.46, selling and distribution expenses - 1.47, Depreciation - 1.05, Interest on debt - 1.13, Tax provision - 1.08, Proposed dividend - 0.90, Equity share capital (consisting of 7,000 equity shares of ₹ 100 each) 7.00, Reserve & Surplus - 1.15, 8% Debentures - 9.0, 9% Public deposits - 3.4, Trade creditors - 3.28, Outstanding liabilities for expenses 0.23, and Fixed assets (less accumulated depreciation of 4.6) 15.6. Monthly average market price per share during month of March, 2014 was ₹ 247. Industry averages: P/E ratio 10, P/B 1.6, Dividend yield 8%.

Answer:

7. (a) (i) In the absence of any information regarding P/E or pay –out ratio, the following model may be used for valuation of the firm:

$$\frac{PAT(1+g)}{Ke-g}$$

$$\text{Firm A Value} = \frac{1000(1.04)}{0.09-0.04} = ₹\ 20{,}800 \text{ million}$$

$$\text{Firm B Value} = \frac{800(1.06)}{0.10-0.06} = ₹\ 21{,}200 \text{ million}$$

(ii) Value of both firm without synergy = 20,800 + 21,200 = 42,000 million

(iii) Weighted cost of Capital for the combined entity

$$9\% \times \frac{20{,}800}{42{,}000} + 10\% \times \frac{21{,}200}{42{,}000} = 9.504\%$$

Expected growth rate for the combined entity

$$4\% \times \frac{20,800}{42,000} + 6\% \times \frac{21,200}{42,000} = 5.01\%$$

(iv) Value of Synergy

Scenario I

Revenues ₹(8,000 + 4,000)	₹12,000 million
COGS (65%)	₹ 7,800 million
EBIT	₹4,200 million
PAT	₹2,100 million
Cost of Capital	9.504%
g	5.01%

$$\text{Value} = \frac{2,100(1.0501)}{(0.09504 - 0.0501)} = ₹49,070.09 \text{ million}$$

Value of synergy = ₹(49,070.09 – 42,000)million = ₹ 7,070.09 million

Scenario II

Revenues	₹12,000 million
COGS (70%)	₹8,400 million
EBIT	₹3,600 million
PAT	₹1,800 million
Cost of Capital	9.504%
g	6% (5% for combination without synergy)

$$\text{Value} = \frac{1,800(1.06)}{(0.09504 - 0.06)} = ₹ 54,452.06 \text{ million}$$

Synergy Value =₹(54,452.06 – 42,000)million = ₹ 12,452.06 million

(b)

Income Statement of Salim Ltd
for the year ended 31.03.2014 (All in ₹ lakhs)

Sales		18.26
Less: Cost of Goods Sold		10.25
Gross Margin		8.01
Less: Administrative Expenses	0.46	
Selling and Distribution Expenses	1.47	
Depreciation	1.05	
Interest on debt	1.13	4.11
Profit before Tax		3.9
Less: Tax Provision		1.08
Net Profit		2.82

Computation of the ratios of Salim Ltd:

(i) $$\text{Book value per share} = \frac{\text{Share holders Fund}}{\text{No. of Shares}}$$

$$= \frac{\text{Equity Share Capital} + \text{Reserve \& Surplus}}{\text{No. of Shares}} = \frac{₹8.15 \text{lakhs}}{7,000} = ₹116.43$$

(ii) $$\text{Earnings per share} = \frac{\text{Profit after Tax}}{\text{Total No. of Shares}} = \frac{₹ 2.82 \text{lakhs}}{7,000} = ₹ 40.29$$

(iii) $$\text{Dividend Yield} = \frac{\text{Dividend Per Share}}{\text{Market Price per share}} = \frac{₹ 12.86}{₹ 247} = 5.21\%$$

(iv) Earning Yield = $\frac{\text{Earning Per Share}}{\text{Market Price per share}} = \frac{₹\ 40.29}{₹\ 247} = 16.31\%$

(v) Price – earnings Ratio = $\frac{\text{Market Price per share}}{\text{Earning Per Share}} = \frac{₹\ 247}{₹\ 40.29} = 6.13$ or 6 times

(vi) Price –Book Value ratio = $\frac{\text{Market Price per share}}{\text{Book Value Per Share}} = \frac{₹\ 247}{₹ 116.43} = 2.12$

8. (a) What are the types of companies where management may find difficulties in using Discounted Cash Flow Technique for Valuation? 4

(b) The following information is available pertaining to Smart Televisions Ltd. for the financial year ending on 31.03.2014.

Particulars	Amount (₹ in Crores)
Sales	**250**
Profit after tax	**40**
Book value	**100**

The valuer appointed by the company believes that 50% weightage should be given to the earnings in valuation process. He also believes that equal weightage may be given to sales and book value. He has identified three firms viz., Alpha Ltd., Beta Ltd., and Gamma Ltd., which are comparable to the operations of Smart Televisions Ltd.

Particulars	Alpha Ltd. (₹ in Crores)	Beta Ltd. (₹ in Crores)	Gamma Ltd. (₹ in Crores)
Sales	**190**	**210**	**270**
Profit after tax	**30**	**44**	**50**
Book value	**96**	**110**	**128**
Market value	**230**	**290**	**440**

Compute the value of Smart Televisions Ltd. using the comparable firms approach. 6

Answer:

8. (a) Types of companies where we may find difficulties in using discounted cash flow Valuation are:

- Private firm, where the owner is planning to sell the firm. It is difficult to find out the extent of success of the private firm, due to the owner's special skills and contacts.
- A biotechnology firm, with no current products or sales, but with several promising product patents in the pipeline. Difficulty may be in estimating near term cash flows.
- A cyclical firm, during recession. The subsequent impact could be adverse/ worsening debt/equity ratios and ROI may also be affected which may create problems.
- A troubled firm, which is in the process of restructuring, where it is selling some of its assets and changing its financial mix. Difficulties are faced in using historical data for earnings growth and cash flows of the firm.
- A firm which owns a lot of valuable land which is currently unutilized. Difficulties are that unutilized assets do not produce cash flows.

(b) Valuation multiples for the comparable firms can be calculated as follows:

Particulars	Alpha Ltd. ₹ Crores	Beta Ltd ₹ Crores	Gamma Ltd. ₹ Crores	Average
Price / Sales Ratio	1.21	1.38	1.63	1.41
Price / Earnings Ratio	7.67	6.59	8.80	7.69
Price / Book value Ratio	2.40	2.64	3.44	2.83

Applying the multiples calculated as above, the value of Smart Televisions Ltd. can be calculated as follows:

Particular	Average Multiple	Parameter	Value ₹ Crores
Price / Sales Ratio	1.41	250	352.50
Price / Earnings Ratio	7.69	40	307.60
Price / Book value Ratio	2.83	100	283.00

By applying the weightage to the P/S ratio, P/E ratio and P/BV ratio we get:
[(352.50 x 1)+(307.60 x 2)+(283.00 x 1)]/(1+2+1)=312.675, i.e. ₹ 312.675 crores is the value.

Working Notes:

$$\text{Price/Sales Ratio} = \frac{\text{MarketValue}}{\text{Sales}}$$

$$\text{Price/Earnings Ratio} = \frac{\text{MarketValue}}{\text{Profit after tax}}$$

$$\text{Price/Book value ratio} = \frac{\text{MarketValue}}{\text{BookValue}}$$

9. Following information is available in respect of XYZ Ltd. which is expected to grow at a higher rate for four years after which growth rate will stabilize at a lower level:

Base year information	₹ in crores
Revenues	**2,000**
EBIT	**300**
Capital expenditure	**280**
Depreciation	**200**

Information for high growth and stable growth period is as follows:

	High Growth	Stable Growth
Growth in Revenue & EBIT	**20%**	**10%**
Growth in capital expenditure and depreciation	**20%**	**Capital expenditure is offset by depreciation**
Risk free rate	**10%**	**9%**
Equity beta	**1.15**	**1**
Market risk premium	**6%**	**5%**
Pre-tax cost of debt	**13%**	**12.86%**
Debt equity ratio	**1 : 1**	**2:3**

For all time, working capital is 25% of revenue and corporate tax rate is 30%.

What is the value of the firm? Use rate of discounting @ 13%. 10

Year	1	2	3	4
P. V. Factor @ 13%	**0.885**	**0.783**	**0.693**	**0.613**

Answer:

9. **High Growth Phase**:
k_e = 0.10+ 1.15x0.06 = 0.169 or 16.9%
k_d = 0.13x (1-0.3) = 0.091 or 9.1%

Cost of Capital = 0.5 x 0.169 + 0.5 x 0.091 = 0.13 or 13%

Stable Growth Phase:

k_e = 0.09 + 1.0 x 0.05 = 0.14 or 14%
k_d = 0.1286 x (1 - 0.3) = 0.09 or 9%

Cost of Capital = 0.6 x 0.14 + 0.4 x 0.09 = 0.12 or 12%

Determination of forecasted free Cash Flow of the Firm (FCFF)

(₹ in Crores)

	Yr.1	Yr.2	Yr.3	Yr.4	Terminal Year
Revenue	2,400	2,880	3,456	4,147.20	4,561.92
EBIT	360	432	518.40	622.08	684.29
NOPAT = EBIT*(I-t)	252	302.40	362.88	435.46	479.00
Capital Expenditure less Depreciation	96	115.20	138.24	165.89	-
Increase in Working Capital	100.00	120.00	144.00	172.80	103.68
Free Cash Flow (FCF)	56.00	67.20	80.64	96.77	375.32

Present Value (PV) of FCFF during the explicit forecast period is:

FCFF (₹ in Crores)	PVF @ 13%	PV (₹ in Crores)
56.00	0.885	49.56
67.20	0.783	52.62
80.64	0.693	55.88
96.77	0.613	59.32
		₹217.38

PV of the terminal, value is: $\frac{375.32}{0.12-0.10} \times \frac{1}{(1.13)^4}$ = ₹ 18,766 Crores x 0.613 = ₹ 11,504 Crores

The value of the firm is: ₹ 217.38 Crores + ₹ 11,504 Crores = 11,721 Crores

10. Following is the information collected for a company, provided to you:

BALANCE SHEET OF XYZ LTD AS AT 31st MARCH .....

(₹ in Crores)

Particular	**2013**
EQUITY AND LIABILITIES:	
SHAREHOLDER'S FUNDS	
Share capital	**36.37**
Reserves and Surplus	**2,225.66**
	2,262.03
NON-CURRENT LIABILITIES	
Long-term Borrowings	**6,322.76**
Deferred tax liabilities (Net)	**39.39**
Other long-term liabilities	**7.09**
Long-term provisions	**355.03**
	6,724.27
CURRENT LIABILITIES	
Trade payables	**1,797.88**
Other current liabilities	**12.24**
Short-term provisions	**19.00**
	1,829.11
TOTAL	**10,815.41**
ASSETS	

NON-CURRENT ASSETS	
FIXED ASSETS:	**4,535.68**
Tangible assets	**898.83**
Capital work-in-progress	**550.00**
Intangible assets	**5,984.51**
	1,664.30
Non-current investments	**891.97**
Long-term loans and advances	**3.03**
Other non-current assets	**2,559.30**
CURRENT ASSETS	**142.50**
Current investments	**1,389.92**
Inventories	**585.77**
Trade receivables	**38.41**
Cash and bank balances	**115.00**
Short-term loans and advances	**2,271.60**
	10,815.41
TOTAL	

STATEMENT OF PROFIT AND LOSS OF XYZ LTD. FOR THE YEAR ENDING ON 31st MARCH ….

(₹ in Crores)

Particulars	**2013**
Revenue from operations	**295.00**
Less: Excise Duty	**26.39**
	268.61
Other Operating Income	**0.30**
Other Income	**0.13**
TOTAL Revenue	**269.04**
EXPENSES	
Raw materials consumed	**132.79**
Power & Fuel Cost	**21.37**
Changes in inventories of finished goods, work-in-progress, and stock-in-trade	**(1.63)** **5.97**
Employee benefits expense	**20.77**
Depreciation and amortization expense	**32.19**
Interest cost	**34.23**
Other expenses	**245.69**
PROFIT/(LOSS) BEFORE TAX AND EXTRA-ORDINARY ITEMS	**23.35**
Less: Extra-Ordinary items	**0.64**
PROFIT/(LOSS) BEFORE TAX	**22.71**
Tax Expenses	
Tax paid @ 32.50%	**7.38**
Deferred Tax	**1.37**
	8.75
PROFIT/(LOSS) AFTER TAX	**13.96**

If the Weighted Average Cost of Capital (WACC) is 15% then you are required to calculate EVA for the year 2012-13. 10

Answer:

10.

EVA = NOPAT – Capital Employed x Cost of Capital

Calculation of NOPAT (₹ in crores)

Profit /(Loss) Before Tax and Extra – ordinary items	₹ 23.35
Adjustments for ……..	
Add: Interest Cost	₹ 32.19
Less: Non –Operating Income	(₹ 0.13)
Operating Profit Before Tax	₹ 55.41
Less: Income Tax @ 32.50%	₹ 18.01
Net Operating Profit After Tax (NOPAT)	₹ 37.40

Calculation of Capital Employed : (₹ in crores)

Share Capital	₹ 36.37
Reserves and Surplus	₹ 2,225.66
Long – Term Borrowings	₹ 6,322.76
Other long term liabilities	₹ 7.09
Long term provisions	₹ 355.03
Capital Employed	₹ 8946.91
Net Operating Profit After Tax (NOPAT)	₹ 37.40
Less: The cost of Capital Employed (8,946.91 x 15%)	₹ 1,342.04
EVA	₹ (1,304.64)