

FINAL EXAMINATION-GROUP IV
(SYLLABUS 2008)
SUGGESTED ANSWERS TO QUESTIONS
JUNE -2011

PAPER - 18 : BUSINESS VALUATION MANAGEMENT

Answer Question No. 1 which is compulsory carrying 25 marks and any five from the rest.

Question:

1x 5 =5

1. (a) State whether the following statements are true or false:

- (i) Organizational Capital structure is a primary component of intellectual capital.
- (ii) A Brand is nothing but a glorified product name, hence it has no value.
- (iii) Existence of strong form of market efficiency requires a well developed strong exchange network.
- (iv) What matters in the valuation of a business is timings of profit and not the timings of cash flows?
- (v) Under DCF mode of asset valuation, we need to estimate the cash flows during the life of the asset.

(b) Fill in the blanks by using the words/phrases giving in the brackets:

- (i) _____ serves as a measure of a firm's external performance. (Market value added/EVA)
- (ii) Under _____ approach, value is determined by comparing the subject company or asset with other companies and assets in the same industry or the same size, based on some common economic variables. (Relative Valuation/Contingent Claim Valuation)
- (iii) In DCF valuation, the value of an asset is present value of _____ cash flows on the asset. (actual/expected)
- (iv) Premium paid by a target company to buy back its stock from a potential acquirer is called _____. (Green mail/White Knight)
- (v) _____ is a method used to value intangibles in which the value of an intangibles is equal to all future royalties that would have to be paid for the right to use the asset if it were not acquired. (Discounted Cash Flow method /Relative Royalty method/Relief from royalty method)
- (vi) If any fixed asset is retired from active use and held for disposal, it should be valued at the lower of net book value and _____. (realisable value/net realisable value)

If prices are rising, FIFO method of inventory valuation gives a _____ value of ending inventory. (better/bad)

- (viii) Two stage dividend discount model is based on _____. (High & Low growth/High & stable growth)
- (ix) Rate of return in preference shares is generally _____ because of greater safety. (Higher/Lower)
- (x) Patents are normally written off over their legal term of validity or over their working life whichever is _____. (shorter/greater) 1x10=10
- (c) In each of the questions given below one out of the four options is correct. Indicate the correct answer:
- (i) An anti takeover defense that creates securities that provide their holders with special rights in the event of a takeover is called
- (A) White Knight
- (B) Poison Put
- (C) Poison Pill
- (D) Bear Hug
- (ii) The following approach states that value of a firm is unaffected by its dividend policy
- (A) CAPM approach
- (B) Modigliani-Miller approach
- (C) Walter's Valuation model
- (D) None of the above
- (iii) If the company has a P/E Ratio of 12 and a ROE of 13% then its Market to Book Value Ratio will be
- (A) 1.56
- (B) 9.34
- (C) 1.09
- (D) None of the above
- (iv) Which one of the following is not a valid assumption of the Modigliani and Miller Model of Dividend policy?
- (A) There are no stock floatation or transaction cost
- (B) Stocks are divisible
- (C) There are no arbitrage opportunities in the market
- (D) There is asymmetric information between the managers and investors

- (v) If the Current Yield of a bond is more than its yield to maturity, then a bond is trading at -
- (A) Par
 - (B) At discount
 - (C) At premium
 - (D) Nothing can be said about the prices of bond as information is not complete
- 2x5=10

Answer to Question No.1 (a) :

- (i) TRUE
- (ii) FALSE
- (iii) TRUE
- (iv) FALSE
- (v) TRUE

Answer to Question No.1 (b) :

- (i) Market Value Added(MVA)
- (ii) Relative Valuation
- (iii) Expected
- (iv) Green mail
- (v) Relief from Royalty Method
- (vi) Net realizable value
- (vii) Better
- (viii) High & stable growth
- (ix) Lower
- (x) Shorter

Answer to Question No.1 (c):

- (i) → (C) Polson Pill
- (ii) → (B) Modigliani-Miller approach
- (iii) → (A) 1.56
- (iv) → (D) There is asymmetric between the managers and investors.
- (v) → (A) At Premium.

uses of horizontal and vertical mergers.

(b) Discuss the major aspects, assumptions and decision rules of the discounted cash flow model. 10

Answer to Question No.2 (a):

The cause of mergers of two firms in the same industry (horizontal/vertical mergers)

Horizontal Mergers-

- (i) Economies of scale.
- (ii) Increased monopoly and bargaining power.
- (iii) Complementary nature of products & services.
- (iv) Management opportunity (i.e. weed out poor management).
- (v) Acquisition of new products and brands.

Vertical mergers -

- (i) Value chain management.
- (ii) Technological and other economies (through avoiding duplication).
- (iii) Tax benefits.
- (iv) Better control on the supply side.

Answer to Question No.2 (b):

Major aspects of DCF (Discounted Cash Flow) Model are -

- (i) It weights the time value of money explicitly while evaluating the costs and benefit of a project.
- (ii) Focus is on relevant cash inflows and outflows during the entire life of the project as against income as computed in the accrual accounting sense.
- (iii) Two main variations of DCF
 - (a) NPV - Net Present Value is the total of the present value of cash flows (Discounted cash flows) discounted at given rate (generally the cost of capital/ desired rate of return)
 - (b) IRR - the IRR has been defined "the maximum rate of interest that could be paid for the capital employed over the life of an investment without loss on the project". It is the yield on investment.

Assumptions of DCF model are -

- (i) Assumes a world of certainty
- (ii) The original amount of investment can be looked upon as being either borrowed or loaned at some specified rate of return.

Decision rules of DCF Model are —

- (i) If NPV is greater than 0, accept the project. If NPV is <0, reject. If NPV =0, the project may be accepted specially when non-financial considerations are strong enough.
- (ii) Rank the projects according to their NPVs, and select the projects at or above the cut off rate of return.
- (iii) Select the project If $IRR > \text{cost of capital / desired rate of return}$.

Question:

3. (a) M/s Radha Industries is planning to issue a Bonds series on the following terms-

Face value Rs. 100

Terms of maturity 10 years

Yearly Coupon Rate

Years	Rate
1-4	9%
5-8	10%
9-10	14%

The current market rate of similar bonds is 15% per annum. The company proposes to price the issue in such a manner that it can yield 16% 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:

(b) When will Economic Value Added of Company increase?

Year	1	2	3	4	5	6	7	8	9	10
P.V. factor of Re. 1 @ 16%	0.862	0.743	0.641	0.552	0.476	0.410	0.354	0.305	0.263	0.227

Answer to Question No.3 (a):

M/s Radha Industries Bond Issue Pricing

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

Year	Cash outflow	PVIF@ 16%	PV
1	9	.862	7.758
2	9	.743	6.687
3	9	.641	5.769
4	9	.552	4.968
5	10	.476	4.76
6	10	.410	4.10
7	10	.354	3.54
8	10	.305	3.05
9	14	.263	3.682
10	14	.227	3.178
11	105	.227	23.835

Bonds should be priced at
Issue price of Bonds = Rs. 71.33

Rs. 71.327

Answer to Question No.3 (b):

Economic Value Added (EVA) of a company will increase if:

- (a) Operating profits can be made to grow without employing more capital, i.e. greater efficiency.
- (b) Additional capital is invested in projects that return more than the cost of obtaining new capital i.e. in projects with profitable growth.
- (c) Capital is curtailed in activities that do not cover the cost of capital i.e. liquidate unproductive capital.
- (d) Growth is maintained by retained profit so long as its return will exceed WACC.
- (e) Better financing policy is adopted with reduced cost of capital.

Question:

5 x 3=15

4. Write Short Note on *any three*:

- (i) Characteristic of Brand;
- (ii) Valuation of preference shares;
- (iii) Fair Market Value of Intangible assets;
- (iv) McKinsey Model of maximizing the value of a firm;
- (v) Walter's Valuation Model.

Answer to Question No.4(i):

Characteristics of Brand: A Brand is an intangible asset. Some see it as a name or a symbol or a logo. It's associated tangible and emotional attributes is intended to identify the goods/ services of one seller in order to differentiate them from those of competitors.

A Brand designates a product, as being different from competitors' product by signalling certain key values specific to a particular brand. It is the associations, which consumers make with the brand that establish an emotional a rational pact between the supplier and the customer.

A Brand is the medium through which consumers identify their experiences with the product offerings of the company. The name of the company is often forgotten but the brand remains in the mind of the consumers.

Answer to Question No.4(ii):

Valuation of Preference Shares: In a going concern, preference shares are valued on yield basis.

The formula is: $\frac{\text{Preference dividend rate}}{\text{Market expectation rate}} \times 100$

With fluctuations in the normal rate of return in respect of preference shares, the value of preference shares of a company will fluctuate inversely. The yield-based valuation of preference shares hold good if

- (i) the company has paid preference dividends regularly and is expected to pay in future years as well and
- (ii) the total asset backing is equal to 4 to 5 times the preference capital.

If dividends on 'cumulative preference shares' are in arrear but there is the possibility of their payment, the present value of such arrears should be taken into account while valuing the preference shares.

Additional right as and where attached to preference shares to get additional share of profits or the right to get the shares converted into equity shares at a certain rate will probably increase the market value of the existing preference shares.

Answer to Question No.4(iii):

Fair Market Value of Intangible assets: Any intangible asset acquired is valued on the basis of the fair value of the asset. Intangible assets include:

- (a) computer software
- (b) patents
- (c) copyrights
- (d) mining rights
- (e) quotas
- (f) marketing rights, etc.

Three important criteria are used to identify an intangible asset. They are: identifiability, control and existence of future economic benefits.

Using the quoted market price in an active market could derive the fair market values of intangibles.

The appropriate market price is the current bid price. In the absence of such a price, the price quoted in a transaction for similar intangible asset can provide a basis for deriving fair value.

Otherwise, the amount, which the business unit would have paid in arm's length transaction between knowledgeable and willing parties, is taken as the fair market value.

However, finally it must be admitted that if the fair value of the intangible asset can not be measured reliably, that asset is not recognized as separate intangible but included in the goodwill.

Answer to Question No.4(iv):

McKinsey Model of maximizing the value of a firm:

According to McKinsey Model, the key steps in maximizing the value of a firm are as follows-

- (a) Identification of value maximization as the supreme goal
- (b) Identification of the value drivers,
- (c) Development of strategy,
- (d) Setting of targets,
- (e) Deciding upon the action plan (budgets),
- (f) Setting up the performance measurements system / Incentive system,
- (g) Implementation

Answer to Question No.4(v):**Walter's Valuation Model:**

Prof. Walter's theory is that in the long-run the share prices reflect only the present value of expected dividends. Retentions influence stock price only through their effect on future dividends. In his view the investment policy of a firm cannot be separated from its dividend policy. The firm would have an optimum dividend policy which be determined by the relationship or r (its internal rate of return) and k (its cost of capital).

Question:

5. (a) Google Ltd. wants to acquire Froogle Ltd. and has offered a swap ratio of 1:2, 0.5 shares of Google Ltd. for every one share of Froogle Ltd. Following information is provided:

	Google Ltd.	Froogle Ltd
Profit After Tax	Rs. 1800000	Rs. 360000
Equity Share Outstanding	600000	180000
EPS	Rs. 3	Rs. 2
P/E Ratio	10 times	7 times
Market price per share	Rs. 30	Rs. 14

Require:

- (i) The number of equity share to be issued by Google Ltd. for acquisition of Froogle Ltd.
 - (ii) What is the EPS of Google Ltd. after acquisition?
 - (iii) What is the expected market price per share of Google Ltd. after the acquisition, assuming its P/E multiple Remains unchanged?
 - (iv) Determine the market value of the merged firm.
- (b) Explain the various methods of payment in case of mergers and amalgamations.

Answer to Question No.5 (a):

- (i) The number of shares to be Issued by Google Ltd.
 $1,80,000 \times 0.5 = 90,000$ shares
- (ii) EPS of Google Ltd. After acquisition:
 Total earnings $(18,00,000 + 3,60,000) = \text{Rs. } 21,60,000$
 No. of shares $(600,000 + 90,000) = 6,90,000$
 $\text{EPS} = \frac{21,60,000}{6,90,000} = \text{Rs. } 3.13$
- (iii) New market price of Google Ltd. (P/E remaining unchanged)
 Present P/E Ratio of Google Ltd. 10 times

Expected EPS after merger	Rs. 3.13
Expected market price $(3.13 \times 10) =$	Rs. 31.30
(iv) Market value of merged firm	
Total No. of shares	6, 90,000
Expected market price	Rs. 31.30
Total value $(6, 90,000 \times 31.30)$	Rs. 2, 15, 97,000.

Answer to Question No.5(b):

Methods of payment in Mergers and Amalgamation:

- (i) **Cash:** - Where one company purchases the shares or assets of another for cash the shareholders of the latter company cease to have any interest in the combined business. The disadvantage is that they may be liable to capital gains tax.
- (ii) **Loan Stock:** - In this case the shareholders of the selling company exchange their equity investment for a fixed interest investment in the other company. The advantage is that any liability to capital gains tax will be deferred until the disposal of the loan stock. In addition, interest on the loan stock is deductible in the hands of the company for the tax purpose.
- (iii) **Ordinary Shares:** - Here the shareholder merely exchanges his shares in one company for shares in another company. The advantage is that the shareholders of the selling company continue to have an interest in the combined business and will not be subject to capital gains tax on the exchange. From the point of view of the combined companies a share exchange does not affect their liquidity.
- (iv) **Convertible Loan Stock:** - The shareholders in one company exchange their shares for convertible loan stock in the other company. The selling shareholder exchanges an equity investment for a fixed interest security which is convertible into an equity investment at some time in the future at a given price, if he so desires.

Question:

6. (a) ABC Limited provides you with following figures:

	Amount in Rs.
Profit before interest and tax	50,00,000
Less : Interest on debentures @ 12%	600000
Profit Before Tax	44,00,000
Income Tax @ 40%	17,60,000
Profit After Tax	2640000
Number of equity share (Rs. 10 each) (Numbers)	400000
Ruling Price in the market (Rs.) per share	66

The company has undistributed reserves of Rs. 6000000. The company needs Rs 12000000 expansion. This amount will earn the same rate as Return on Capital Employed on existing Capital. In view of current boom in the capital markets company management has decided to raise 100% of the total financing

requirements externally. You are informed that a debt equity ratio $\{ \text{Debt} / \text{Debt} + \text{Equity} \}$ higher than 35% will push PE ratio down to 8 and raise the interest rate on additional amount borrowed to 14% due to the increased financial risk profile of the company. You are required to ascertain the probable price of the share:

- (i) If additional funds are raised as debt; and
 - (ii) If the amount is raised by issuing equity shares assuming that new shares will be issued at Rs. 60 per share and Price Earning ratio will remain unchanged: 10
- (b) Assume that you have been given the task of estimating the value of Goodwill of Sunshine Ltd. based on the method of Capitalization of Excess Earning Power. For that purpose, the necessary information is being collected for the said company and a typical firm of the same industry as given below:

Profit and Loss Account for the year ending on 31.03.2011 (Rs. In Lakhs)

Particulars	Sunshine Ltd.	Typical Company of the Industry
Sales	625.00	438.68
Less: Cost of Goods Sold	497.00	373.80
Gross Profit	128.00	64.88
Depreciation	64.80	45.60
Profit Before Interest and Tax	63.20	19.28
Interest	7.80	7.00
Profit Before Tax	55.40	12.28
Tax @ 40%	22.16	4.91
Profit After Tax	33.24	7.37

Additional Information:

- The appropriate discount rate is 10% and
 - The estimated life for which goodwill is to be calculated is 10 years.
 - The present value of Annuity of Re. 1 every year, at 10% discount rate for 10 years is Rs. 6.145.
- Assuming that the estimated excess earnings will remain constant throughout the time period for which goodwill is to be estimated, you are required to determine the value of Goodwill of Sunshine Ltd. using the method of capitalization of excess earning power. 5

Answer to Question No.6(a):

Estimated price of shares of ABC Ltd.

Capital Employed;
Paid-up Capital (4, 00,000 × Rs. 10)
Retained Earnings
12% debentures (6, 00,000/12%)
Total Capital Employed

Rs. 40, 00,000.00
Rs. 60, 00,000.00
Rs. 50, 00,000.00
Rs. 1, 50, 00,000.00

Profit before interest and tax (PBIT)	Rs. 50, 00,000.00
Return on Capital Employed	33.33%
EPS at present (Rs. 26, 40,000 ÷ 4, 00,000)	Rs. 6.60
Market Price	Rs. 66.00
P/E Ratio (Market price ÷ EPS)	10
After the expansion programme, the capital employed will be	Rs. 2, 70, 00,000.00
Therefore, the PBIT on it will be	Rs. 90, 00,000.00
If the Expansion is financed totally by debt, the capital structure will be-	
Paid Capital (4, 00,000 × Rs. 10)	Rs. 40, 00,000.00
Retained Earnings	Rs. 60, 00,000.00
12% Debentures (6, 00,000/12%)	Rs. 50, 00,000.00
Borrowed Amount	<u>Rs. 1, 20, 00,000.00</u>
Total Capital Employed	<u>Rs. 2, 70, 00,000.00</u>

Therefore, the New Debt/Equity Ratio will be (Rs. 1.7 Crore ÷ Rs. 2.7 Crore) 62.96%
Which is more than 35%, hence the cost of borrowing will be 14%.

CASE: DEBT FINANCING

	Amount in Rs.
Profit before interest and tax [33.33% of Rs. 2, 70, 00,000]	Rs. 90, 00,000.00
Less: Interest on debentures @12%	Rs. 6, 00,000.00
Less: Interest on Borrowed Amount @14%	Rs. 16, 80,000.00
Profit Before Tax	Rs. 67, 20,000.00
Income Tax @ 40%	Rs. 26, 88,000.00
Profit After tax	Rs. 40, 32,000.00
Number of Equity Share Rs. 10 each (Number)	4, 00,000
EPS (Rs.)	Rs. 10.08

P/E Ratio

8

Therefore, in case of debt financing the market price will be

Rs. 80.64

CASE: EQUITY FINANCING

The expansion of Rs. 1, 20, 00,000 is met by issue of equity shares at Rs. 60/- per share. Additional equity shares issued 2, 00,000 (number). Total share capital will become 6, 00,000 shares of Rs.10/- each.

	Amount in Rs.
Profit Before Interest and tax (33.33% of Rs. 2, 70, 00,000)	Rs. 90, 00,000.00
Less: Interest on debentures @12%	Rs. 6, 00,000.00
Profit Before Tax	Rs. 84, 00,000.00
Income Tax @ 40%	Rs. 33, 60,000.00

Profit After tax	Rs. 50, 40,000.00
Number of Equity Share After New Issue	6, 00,000
EPS (Rs.)	Rs. 8.40
Since Debt Equity Ratio will be $(Rs. 50, 00,000 / Rs. 2, 70, 00,000) = 18.52\%$. i.e. less than 35%, PE Ratio will be remain 10.	
P/E Ratio	10.00
Therefore, in case of equity financing, the market price will be	Rs. 84.00

Answer to Question No.6(b):

(Rs. In lakhs)

Profit After Tax	Rs. 33.24
Sunshine Ltd.	Rs. 7.37
Typical Company of the Industry	Rs. 25.87
Excess Earnings	10%
Discount rate	10
Time Period (In years)	6.145
PV of Annuity at 10% Discount Rate for 10 years	
Therefore, the Amount of Goodwith is (25.87×6.145)	Rs. 158.97

Question:

7. (a) Briefly explain various popular approaches to intellectual capital measurement. 5
- (b) VASUDA Ltd. is a major player in the Textile industry of the country. The Industry is expected to maintain high growth for a period of 5 years after which it is expected to drop down. Currently the company is distributing 40% of its profit as dividend to the shareholders.
- The dividend payout ratio of the company is expected to remain at the current level for a period of next 5 years after which it is expected to increase to 55%.
- The net profit margin of the company is currently 8% and is expected to remain at the same level for next 5 years, after which it is expected to decrease to 5.7%.
- Currently the company is able to generate sales of Rs. 2.50 for every 1 (one) rupee of assets employed and it is expected to remain the same for the next 5 years and after that the company is expected to generate sales of Rs. 3.50 for every 1 (one) rupee of assets employed.
- 50% of the assets of the company are financed with equity capital, and it is expected to remain same in future.
- At present the risk free rate of return is 7% and market risk premium is 15.50%. The beta of the company is currently 1.2.
- Current net worth of the company is Rs. 250 lakh and number of shares outstanding is 2 lakh.

Note: The market is in equilibrium.

You are required to compute:

- (i.) Price per share of VASUDA Ltd. using Dividend discount model (DDM)
- (ii.) Price to book value ratio of the share of VASUDA Ltd.

P.V. FACTORS ARE AS UNDER :

10

Year	1	2	3	4	5	6	7	8	9	10
@15.50%	0.8658	0.7496	0.6490	0.5619	0.4865	0.4212	0.3649	0.3158	0.2734	0.2367
@22.50%	0.8163	0.6664	0.5440	0.4441	0.3625	0.2959	0.2416	0.1972	0.1610	0.1314
@25.60%	0.7962	0.6339	0.5047	0.4018	0.3199	0.2547	0.2028	0.1615	0.1286	0.1024

Answer to Question No.7(a):

There are five popular approaches to intellectual Capital measurement.

- (i) **EVA (Economic Value Added)** as a measure was developed in 1980's by New York Consultancy Firm, Stern Stewart & Co. In Simple terms

$$\text{EVA} = \text{Net operating profit after taxes} - (\text{Capital} \times \text{Cost of Capital})$$

- (ii) **Human Resource Accounting (HRA):**

HRA is a set of accounting methods that seek to settle and describe the management of a Company's Staff. It focuses on employees education, competence and remuneration.

- (iii) **Intangible Assets Monitor (IAM):**

This has been developed by Karl-Erik Sveiby. The IAM is based on the fundamental premise of people being an organization's only profit generator.

According to Sveiby, people are only true agents of any business, all other assets whether tangible products or intangible relations are result of human actions and depend ultimately on people for their continued existence.

- (iv) **The Skandia Navigator:**

The Skandia Navigator is perhaps the best known business model developed to identify the intangible assets that are key to company's performance. The Navigator is designed to provide a balanced picture of financial and Intellectual Capital. The Navigator frame work, as expected has its top end a series of measures relating to financial focus. But it also has 'below the line' measures of intellectual capital which involve four areas and two dimensions. These are customer focus, process focus renewal and development focus and human focus acting as binding force of customers, process renewal and development and finance.

- (v) **Balanced Scorecard (BSC):**

Balanced scorecard developed by Prof. Robert Kaplan of Harvard Business School is an organizational frame work for implementing and managing a strategy at all levels of an enterprise by linking objectives, initiatives and measures to an organization's vision and strategy. The BSC translates business's vision and strategy into objectives and measures across four balanced

perspectives – financial performance, customers, internal business processes, organizational growth, learning and innovation.

- (vi) The performance prism is second generation performance measurement and management approach. It recognizes the importance of companies taking a holistic approach to stakeholder management in today's culture of involvement.

Answer to Question No.7(b):

VASUDA LTD		
Particulars	Next 5 years	After 5 years
Pay-out ratio	40%	55%
Net Profit margin (a)	8%	5.7%
Assets turnover ratio (b)	2.50 times	3.50 times
NW/ TA (c)	50%	50%
ROE [(a × b)/c]	40%	39.9% = 40%
Growth rate : (1-Pay-out ratio) × ROE	24%	18%

CALCULATION OF PRICE PER SHARE

Year	Growth Rate	DPR (%)	EPS (Rs)	DPS
0	24	40	50	-
1	24	40	62	24.80
2	24	40	76.88	30.752
3	24	40	95.33	38.132
4	24	40	118.21	47.284
5	24	40	146.58	58.632
6	18	55	172.96	95.128

CALCULATION OF CURRENT EPS OF VASUDA LTD

$$ROE = PAT / NW$$

$$0.40 = PAT / 250 \text{ Lakh}$$

$$PAT = 250 \times 0.40 = \text{Rs } 100 \text{ Lakh. Number shares} = 2 \text{ lakh.}$$

$$EPS = 100 / 2 = \text{Rs } 50.$$

Calculation of Cost of Equity :

$$K_e = R_f + \beta (R_m - R_f) = 7 + 1.20 \times 15.50 = 25.60$$

Terminal value at the end of 5th year :

$$\frac{95.128}{0.256 - 0.18} = \text{Rs. } 1251.68$$

Value of Share at time 'O' :

$$24.80 \times 0.7962 + 30.752 \times 0.6339 + 38.132 \times 0.5047 + 47.284 \times 0.4018 + 58.632 \times 0.3199 + 1251.68 \times 0.3199 = \underline{\text{Rs } 496.65}$$

$$(ii) \quad \text{Book value per share} = \frac{250}{2} = \text{Rs } 125$$

$$\text{Hence, price to Book Value Ratio (P/Bv)} = 496.65 / 125 = 3.97$$

Question:

8. (a) DKB Consulting Ltd. is a firm that specializes in offering management consulting services to software companies. DKB Consulting Ltd. reported operating income (EBIT) Rs. 204 lakh and net income Rs. 90 lakh in the most recent years. However, the firm's expenses include the cost of recruiting new consultants and cost of training which amount to Rs. 40 lakh. A consultant who joins DKB Consulting Ltd. stays with the firm on an average for 4 years.

Recruitment and training expenses are amortizable over 4 years immediately following the year in which they are incurred. Over the post 4 years the expenses are:

Year	Training, Recruitment Expenses (Rs. in lakh)
Current (0)	40
Year (-1)	32
Year (-2)	30
Year (-3)	24
Year (-4)	20

Assuming a linear amortization schedule (over 4 years)

You are required to estimate:

- i. The value of human capital asset and the amount of training and recruitment expenses amortization for this year.
 - ii. The adjustment to operating income. 6
- (b) NABINA UDYOG LTD. a venture capital fund, has specialized in providing bridge finance to young technocrats in biotechnology sector. NABINA UDYOG has received an investment proposal from AKRIT BIOTECH LTD. a Bio-tech firm, to finance its recent project with equity investment of Rs. 15 crore. AKRIT BIOTECH LTD. is an existing profit making organization with a dividend track record of 3 years. The current EPS of the company is Rs. 5. The expected growth in EPS for the next year is as follows:

Growth in (EPS)	Probability
0	0.20
25	0.30
35	0.40
40	0.10

NABINA UDYOG reckons that the P/E ratio for this industry will be as follows:

P/E Ratio	Probability
8	0.30
10	0.40
12	0.30

NABINA UDYOG finances every project for 1 year. The company (NABINA UDYOG) invests only in those projects where probability of getting target return of 35% is at least 75%. NABINA UDYOG is expected to dispose of its investment at industry P/E ratio.

Required:

What should be the price at which NABINA UDYOG LTD. would make the investment?

9

Answer to Question No.8(a):

DKB Consulting Ltd.

Year	Training and Recruitment expenses	Unamortized Portion (Rs in Lakh)	Amortization this year (Rs in Lakh)
Current (0)	40	40 (100%)	-
Year (-1)	32	24 (75%)	8.0
Year (-2)	30	15 (50%)	7.5
Year (-3)	24	6 (25%)	6.0
Year (-4)	20	0	5.0
		85	26.5

- (i) The value of human capital assets as at end of current year is Rs. 85 Lakh and amount of training and recruitment expenses amortization by debit to P & L A/c this year is Rs 26.50 Lakh,
- (ii) Adjusted Operating Income :
 = Operating income + Training and recruitment expenses - amortization of expenses this year.
 = Rs 204 Lakh + Rs 40 Lakh - Rs 26.5 lakh = Rs 217.5 Lakh

Answer to Question No.8(b):

NABINA UDYOG LTD.

EPS Rs Rs.	Growth in EPS	Probability	P/E Ratio	Probability	Estimated Price	Joint EPS Probability	Cumulative Probability
5	0	0.20	8	0.30	40	0.06	0.06
5	25	0.30	8	0.30	50	0.09	0.15
5	35	0.40	8	0.30	54	0.12	0.27
5	40	0.10	8	0.30	56	0.03	0.30
5	0	0.20	10	0.40	50	0.08	0.38
5	25	0.30	10	0.40	62.5	0.12	0.50
5	35	0.40	10	0.40	67.5	0.16	0.66
5	40	0.10	10	0.40	70	0.04	0.70
5	0	0.20	12	0.30	60	0.06	0.76
5	25	0.30	12	0.30	75	0.09	0.85
5	35	0.40	12	0.30	81	0.12	0.97
5	40	0.10	12	0.30	84	0.03	1.00

Estimated Price (arranged in ascending order) Rs.	Joint Probability	Cumulative probability
40	0.06	0.06
50	0.09	0.15
50	0.08	0.23
54	0.12	0.35
56	0.03	0.38
60	0.06	0.44
62.5	0.12	0.56
67.5	0.16	0.72
70	0.04	0.76
75	0.09	0.85
81	0.12	0.97
84	0.03	1.00
	1.00	

From the table it is seen that the probability of the divestment price being Rs 50 or less is 0.23. Hence the probability of divestment price being Rs 54 and above is 0.77 which is more than the specified limit of 0.75. Hence the minimum divestment price can be taken Rs 54.

The company should even a target return of 35%.

Hence the purchase price (P) should be

$$(54 - P) / P = 35\% \text{ i.e. } 0.35 \quad 54 - P = 0.35P \quad P = 54 / 1.35 = 40$$

The purchase price should be Rs. 40/- per share.

