
Answer to PTP_Final_Syllabus 2008_Jun2014_Set 2

Paper-18: BUSINESS VALUATION MANAGEMENT

Time Allowed: 3 Hours

Full Marks: 100

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

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

Working Notes should form part of the answer.

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

1. (a) State whether the following statements are true or false: [1x5=5]
- (i) Market value per share is expected to be lower than the book value per share in case of profitable and growing firms.
 - (ii) Firms tend to be more profitable when there is higher real growth in the underlying market than when there is lower real growth.
 - (iii) A lower discount rate would be applied to the cash flows of the government bond.
 - (iv) Variable dividend feature makes the computation of share value difficult.
 - (v) If there are no anticipated excess earnings over normal earnings, then the goodwill of the business on the basis of super profit method will be zero.
- (b) Fill in the blanks by using the words/phrases given in the brackets: [1x6=6]
- (i) The Assets Monitor of management tool for organizations that wish to track and value their assets (tangible/intangible).
 - (ii) The cash flows associated with common stock are to evaluate due to the uncertainty and variability associated with them (easy/ difficult).
 - (iii) When a corporation's shares are owned by individuals who are associated with the firm's managements, we say that the firm is “closely held” (few/many).
 - (iv) Post-merger control and the are two of the most important issues in agreeing on the terms of a merger (negotiated price/calculated price).
 - (v) A theory that explains why the total value from the combinations resulted from a merger is a greater than the sum of the values of the component companies operating independently is known as theory (synergy /hubris /agency).
 - (vi) A is essentially a container for a customer's complete experience with the offer and the company (goodwill/ brand).
- (c) In each of the questions given below one out of the four options is correct. Indicate the correct answer: [2x7=14]

Answer to PTP_Final_Syllabus 2008_Jun2014_Set 2

- (i) Last year, Blanda Brothers had positive net cash flow, yet cash on the balance sheet decreased. Which of the following could explain the company's financial performance?
- (a) The company issued new common stock.
 - (b) The company issued new long-term debt.
 - (c) The company sold off some of its assets.
 - (d) The company purchased a lot of new fixed assets.
- (ii) Cowboy Curtiss' Cowboy Hat Company recently completed a merger. When valuing the combined firm after the merger, which of the following is an example of the type of common mistake that can occur?
- (a) The use of market values in valuing either the new firm.
 - (b) The inclusion of cash flows that is incremental to the decision.
 - (c) The use of Curtiss' discount rate when valuing the cash flows of the entire company.
 - (d) The inclusion of all relevant transactions cost associated with the acquisition.
- (iii) Haskell Motors' common equity on the balance sheet totals \$700 million, and the company has 35 million shares of common stock outstanding. Haskell has significant growth opportunities. Its assets book value is ₹800 million, but its market value is estimated to be ₹910 million. Over time, Haskell has issued outstanding debt that has a book value of ₹100 million and a market value of ₹75 million. Which of the following statements is most correct?
- (a) Haskell's book value per share is ₹20.
 - (b) Haskell's market value per share is probably less than ₹20.
 - (c) Haskell's market value per share is probably greater than ₹20.
 - (d) Statements a and c are correct.
- (iv) Rudy's, Inc. and Blackstone, Inc. are all-equity firms. Rudy's has 1,500 shares outstanding at a market price of ₹22 a share. Blackstone has 2,500 shares outstanding at a price of ₹38 a share. Blackstone is acquiring Rudy's for ₹36,000 in cash. What is the merger premium per share?
- (a) ₹2.00
 - (b) ₹4.25
 - (c) ₹6.50
 - (d) ₹8.00
- (v) Hayes Corporation has ₹300 million of common equity on its balance sheet and 6 million shares of common stock outstanding. The company's Market Value Added (MVA) is ₹162 million. What is the company's stock price?
- (a) ₹ 23
 - (b) ₹ 32
 - (c) ₹ 50
 - (d) ₹ 77
- (vi) Turner, Inc. has ₹4.2 million in net working capital. The firm has fixed assets with a book value of ₹48.6 million and a market value of ₹53.4 million. Martin & Sons is buying Turner, Inc. for ₹60 million in cash. The acquisition will be recorded using the purchase accounting method.

Answer to PTP_Final_Syllabus 2008_Jun2014_Set 2

What is the amount of goodwill that Martin & Sons will record on its balance sheet as a result of this acquisition?

- (a) ₹0
- (b) ₹2.4 million
- (c) ₹6.6 million
- (d) ₹7.2 million

(vii) Casey Motors recently reported the following information:

- Net Income = ₹600,000.
- Tax rate = 40%.
- Interest expense = ₹200,000.
- Total investor-supplied operating capital employed = ₹9 million.
- After-tax cost of capital = 10%.

What is the company's EVA?

- (a) -₹300,000
- (b) -₹180,000
- (c) ₹200,000
- (d) ₹400,000

Answer

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

- (i) False
- (ii) True
- (iii) True
- (iv) True
- (v) True

1. (b) Fill in the blanks by using words / phrases given in the brackets:

- (i) Intangible
- (ii) Difficult
- (iii) Few
- (iv) Negotiated Price
- (v) Synergy
- (vi) Brand

1. (c) In each of the questions given below one out of the four options is correct. Indicate the correct answer -

- (i) (d) The company purchased a lot of new fixed assets.
- (ii) (c) The use of Curtiss' discount rate when valuing the cash flows of the entire company
- (iii) (d) Statements a and c are correct

Answer to PTP_Final_Syllabus 2008_Jun2014_Set 2

- (iv) (a) ₹2.00
 Merger premium per share = $(₹36,000 \div 1,500) - ₹22 = ₹2$
- (v) (d) ₹ 77
 Stock Price = $₹(300+162) \div 6 = ₹77$
- (vi) (b) ₹2.4 million
 Goodwill = $₹60m - (₹4.2m + ₹53.4m) = ₹2.4m$
- (vii) (b) - ₹1,80,000
 EVA = Net Operating Profit After Tax - (Capital Invested x WACC)
 NOPAT = EBIT x (1 - Tax Rate)
 EBIT = $(6,00,000 / .6 + 200,000) = 12,00,000$
 EVA = $12,00,000 \times (1 - 0.4) - (90,00,000 \times 0.10) = - ₹ 1,80,000$

2. The Balance Sheet of Sizzler Coat Ltd as at 31st March is given below-

Liabilities	₹	₹	Assets	₹	₹
Share Capital:			Fixed Assets:		
5,000 Equity Shares of ₹100		5,00,000	Land & Buildings at Cost		3,20,000
3,000 12% Preference Shares of ₹100		3,00,000	Plant & Machinery	9,40,000	
			(-) Acc. Depreciation	4,80,000	4,60,000
Reserves & Surplus:					
General Reserve		3,00,000	Investments:		
Profit & Loss A/c			6% Govt. Securities – at Cost		1,60,000
- Opening Balance (beginning)	1,20,000		Current Assets:		
--- Current Year Profit	4,80,000		Book Debts		3,80,000
	6,00,000		Stock in Trade		4,50,000
--- Provision for Tax	(2,40,000)	3,60,000	Cash and Bank Balances		80,000
			Preliminary Expenses		60,000
Current Liabilities & provisions:					
Trade Creditors		2,10,000			
Provision for Taxation		2,40,000			

Answer to PTP_Final_Syllabus 2008_Jun2014_Set 2

	19,10,000		19,10,000
--	-----------	--	-----------

The face value of the Government Securities is ₹2,00,000. The current Year profit reported in the Balance Sheet includes income from such Government Securities. Stock in Trade reported in Balance Sheet at 90% of Market Value.

The shares of the Company are not quoted on the Stock Exchange. A provision exists in the Articles of Association of the Company that in cases where any existing shareholder desires to transfer his holdings to another person, it should be done at a fair market value to be fixed by the Statutory Auditor of the Company. One of the shareholders desiring to transfer his holdings to X, an outsider, refers the matter of determination of the fair market value of shares to you, as the Statutory Auditor.

Indicate how you will proceed to determine such a value, based on the following additional information:

- (i) The Company's prospects in the near future appear good.
- (ii) Land value is understated by ₹4,00,000. Buildings have suffered a further depreciation of ₹2,00,000.
- (iii) Market Value of Plant and Machinery is ₹5,40,000.
- (iv) Companies doing similar business as that of Sizzler Coat Ltd show a market return of 12% on Capital Employed.
- (v) Profits over the prior 3 years period have been increasing at the rate of ₹50,000 per annum.
- (vi) It has always been the Company's practice to value stock at market prices. [15]

Answer:

(i) Computation of Future Maintainable Profits

Particulars	₹
Profit as per Profit & Loss Account	4,80,000
Less: Investment Income (₹2,00,000 x 6%)	(12,000)
Net Adjusted Profit Before Tax	4,68,000
Less: Tax Provision at 50% (See Note)	(2,34,000)
Adjusted Profit after Tax	2,34,000

Note:

- **Tax Rate** = Tax Provision as per books ÷ Profit as per books = ₹2,40,000 ÷ ₹4,80,000 = 50%.
- It is assumed that 90% of Market Value is lower than cost of stock. Since the Company has been valuing its stock at market prices, it is assumed that no further adjustment is considered necessary in this case.

We are informed that the profits (assumed as PBT) of the last 3 years have been increasing at ₹50,000 per annum.

Presuming the trend of ₹50,000 increase in PBT to continue, profit after tax will increase by ₹25,000 [₹50,000 – 50%], and the expected profit of the next three years and their average will be –

Future Year	Expected PAT	Weights	Weight x PAT
Year 1	2,34,000 + 25,000 = 2,59,000	3	₹7,77,000

Answer to PTP_Final_Syllabus 2008_Jun2014_Set 2

Year 2	2,59,000 + 25,000 = 2,84,000	2	₹5,68,000
Year 3	2,84,000 + 25,000 = 3,09,000	1	₹3,09,000
	Total	6	₹16,54,000
Weighted Average Profits = ₹16,54,000 ÷ 6			₹2,75,667
Less: Preference Dividend (₹3,00,000 x 12%)			(₹36,000)
Equity Earnings			₹2,39,667

(ii) Computation of Proxy Trading Capital Employed (based on Closing Capital Employed)

Particulars	₹	
Land & Buildings- Book Value	3,20,000	
Add: Increase in Value of Land	4,00,000	
Less: Decrease in Value of Building	(2,00,000)	5,20,000
Plant & Machinery		5,40,000
Book Debts		3,80,000
Stock in Trade (at Market Value) i.e. ₹4,50,000 x 100/90		5,00,000
Cash and Bank Balances		80,000
Total Assets		20,20,000
Less: External Liabilities		
Trade Creditors	2,10,000	
Provision for Taxation	2,40,000	(4,50,000)
Less: Preference Capital		(3,00,000)
Capital Employed as at 31st March (year-end)		12,70,000

Note: Stock is taken at Realizable Value i.e. Market Value. In the B/S, it has been taken at 90% only.

(iii) Computation of Goodwill

Particulars	₹
a. Capitalized Value of Future Maintainable Profits i.e ₹2,39,667 ÷ 12%	19,97,225
b. Capital Employed on Balance Sheet Date	12,70,000
c. Excess attributed to Goodwill (a-b)	7,27,225

(iv) Computation of value per Share on Net Assets Basis

Particulars	₹
-------------	---

Answer to PTP_Final_Syllabus 2008_Jun2014_Set 2

a. Capital Employed on Balance Sheet date	12,70,000
b. Goodwill as calculated above	7,27,225
c. Non- Trade Investments at Cost	2,00,000
d. Net Assets available to Equity Shareholders (a+b+c)	21,97,225
e. Number of Equity Shares	5,000 Shares
f. Value per Equity Share based on Net Assets (d ÷ e)	₹439.45

Assuming Equity Shares are valued at Par if yielding 12% Return on Total Capital Employed, value per share is —

Particulars	₹
Future Maintainable Profit for Equity Shareholders (as computed above)	2,39,667
Add: Non- trade Income (after Tax) (2,00,000 x 6% x 50%)	6,000
Total Equity Earnings	2,45,667
Total Value Attributable to Equity Shareholders (computed above)	21,97,225
Actual Yield on Equity Capital Employed (245667 ÷ 2197225)	11.18%
Value per Share = Par Value x Actual Yield ÷ Expected Yield = ₹100 x 11.18% ÷ 12%	₹93.17

Summary of Value per Share under different methods

Particulars	₹
a. Value per Share under Net Assets method	439.45
b. Value per Share under Yield method	93.17
c. Fair Value per Share = (₹439.45 + ₹93.17) ÷ 2	266.31

3. (a) While evaluating a capital project, a company is considering an option to buy a business from a third party at the cost of ₹ 50 crores. It is expected that in next one year, the value of such business will increase to ₹ 60 crores with probability of 70% or decline to ₹ 45 crores with probability of 30%. The company may enter into an agreement with a party to sell the said business at ₹48 crores after one year if the company so desires. Assuming that this real option is like a European Call, with the strike price of the underlying real asset is ₹ 48 crores and the risk free interest rate is 9% p.a. Determine the value of this real option.

- (b) Coca – Coal's Balance sheet for December 2013 is modified and summarized below (in millions of dollars):

	\$		\$
Cash and Near cash	1,648	Accounts Payable	3,141
Marketable Securities	159	Short- term Borrowings	4,462
Accounts receivable	1,666	Other Short – term	1,037
Other current Assets	2,017	Liabilities	8,640

Answer to PTP_Final_Syllabus 2008_Jun2014_Set 2

Current Assets	5,490	Current Liabilities	687
Long-term Investments	1,863	Long-term Liabilities	1,415
Depreciable Fixed Assets	5,486	Other Long-term Liabilities	2,102
Non-depreciable Fixed Assets	199	Non-current Liabilities	3,060
Assets	2,016	Share Capital (Paid-in)	5,343
Accumulated Depreciation	5,532	Retained Earnings	8,403
Net Fixed Assets	8,123	Shareholders Equity	19,145
Other Assets	19,145	Total Liabilities & Equity	
Total Assets			

Required:

Coca-Cola's most valuable asset is its brand name. Where in the balance sheet do you see its value? Is there any way to adjust the balance sheet to reflect the value of this asset?

- (c) An investor wants to buy a bullet bond of the automotive sector. He has two choices: either invests in a US corporate bond denominated in euros or in a French corporate bond with same maturity and coupon. Are the two bonds comparable?
- (d) X Ltd. Purchased 1,10,000 MT for ₹ 100 each. MT of raw material and introduced in the production process to get 85,000 MT as output. Normal wastage is 5%. In the process, company incurred the following expenses:

Direct labour	₹10,00,000
Direct Variable overhead	₹1,00,000
Direct Fixed overhead (including interest ₹36,785)	₹1,00,000

Of the above 80,000 MT was sold during the year and remaining 5000 MT remained in closing stock. Due to fall in demand in market, the selling price for the finished goods on the closing day was estimated to be ₹ 145 per MT. Calculate the value of closing stock.

[5+3+3+4]

Answer:

- (a) To solve this problem, one can use any approach of the following three:

- No Arbitrage Method
- Hedging Portfolio Method
- Risk Neutral Probability Method

Here, answer is given using Risk Neutral Probability Method:

Let p be the risk neutral probability that the value of the business will increase to ₹ 60 crores and $1-p$ will be the risk neutral probability that value of the business will be ₹ 45 crores if it declines.

Then, $50 = [60p + 45(1-p)] / 1.09$ and solving for p we get $p = 0.6333$ and $1-p = 0.3667$. Using these risk neutral probabilities we get the valuation of the OPTION as –

Value of the Real Option = $\{(60-48) \times 0.6333 + 0 \times 0.3667\} / 1.09 = ₹ 6.97$ crores

- (b) Coca-Cola's brand name value does not appear in its balance sheet. Of course, there is an item called non-depreciable fixed assets, but it is too small to represent the brand-name value; it's probably land. One way to adjust the balance sheet to reflect the value of this asset (brand-name) is for Coca-cola to set up a separate subsidiary that would buy the right to the brand name. The brand-name value would then show up as an asset

Answer to PTP_Final_Syllabus 2008_Jun2014_Set 2

for the subsidiary, which would then be reflected in the Coca-cola's balance sheet as well, even if the financial statements were consolidated.

(c) The answer is no.

First, the coupon and yield frequency of the US corporate bond is semiannual, while it is annual for the French corporate bond. To compare the yields on the two instruments, you have to convert either the semiannual yield of the US bond into an equivalently annual yield or the annual yield of the French bond into an equivalently semiannual yield.

Second, the two bonds do not necessarily have the same rating, that is, the same credit risk.

Third, they do not necessarily have the same liquidity.

(d) **Computation of Cost of Closing stock**

Cost of purchase (1,10,000 × 100)	₹110,00,000
Direct labour	₹10,00,000
Variable overhead	₹1,00,000
Fixed overhead [(₹1,00,000-36,785) × 85,000]/1,04,500	₹51,419
Cost of production	1,21,51,419
Cost of Closing stock (1,21,51,419/85,000)	₹143 (approx)
Net Realisable value	₹145

Since cost of production is less than net realisable value, closing stock will be valued at ₹ 143. Therefore closing stock is ₹ 5,000 × 143 = ₹7,15,000.

4 (a) **Why do many mergers fail?**

(b) **Why do Companies want to measure intellectual capital?**

(c) **Discuss Synergy with reference to merger.**

[3+6+6]

Answer:

(a) **Major reasons why mergers fail:**

- (i) Lack of fit due to difference in management styles or corporate structures.
- (ii) Lack of commercial fit.
- (iii) Paying too much.
- (iv) Cheap purchase turning out to be costly in terms of resources required to turn around the acquired company.
- (v) Lack of company goals.
- (vi) Failure to integrate effectively.

Answer to PTP_Final_Syllabus 2008_Jun2014_Set 2

(b) There a number of reasons why firms want to measure IC and the predominant reason have been for strategic or internal management purposes. Specifically the reasons include:

- (i) Alignment of IC resources with strategic vision. To support the implementation of a specific strategy via a general upgrading of the work with the companies' human resources (support and maintain a strategy concerning the composition of staff as regards seniority professional qualifications and age. Through the description of the staff profile measuring discussion and adjustment become possible).
- (ii) To support or maintain various parties awareness of the company.
- (iii) To help bridge the Present and the past (stimulates the decentralized development of the need for constant development and attention towards change).
- (iv) To influence stock prices by making several competencies visible to current and potential customers.
- (v) To make the company appear to the employees as a name providing an identity for the employees and visualizing the company in the public. Knowledge of employees and customers will stimulate the development of a set of policies to increase customer satisfaction and customer loyalty.
- (vi) Assessing effectiveness of a firm's IC utilization- Allocate resources between various business units. Extract full value from acquisition and joint ventures.
- (vii) Determine the most effective management incentive structures.

(c) **Synergy:** Synergy results from complementary activities. For example one firm may have a substantial amount of financial resources while the other has profitable investment opportunities. Likewise one firm may have a strong research and development team whereas the other may have a very efficiently organized production department. Similarly one firm may have well established brands of its products but lacks marketing organization and another firm may have a very strong marketing organization. The merged business unit in all these cases will be more efficient that the individual firms. And hence the combined value of the merged firm is likely to be greater than the sum of the individual entities (units). Symbolically; Combined value = Stand alone value of acquiring firm V_a + Stand alone value of acquired target firm V_t + Value of synergy ΔV_{at} .

Normally the value of synergy is positive and this constitutes the rationale for the merger. In valuing synergy costs attached with acquisitions should also be taken into account. These costs primarily consist of costs of integration and payment made for the acquisition of the target firm in excess of its value V_t . therefore the net gain from the merger is equak to the difference between the value of synergy and costs.

Net gain = Value of synergy ΔV_{at} costs.

5. (a) "Jaggi & Lau suggested that a proper valuation of human resource is not possible unless the contribution of individuals as a group is taken into consideration." Comment.

(b) You are given following information about Sandeep Ltd.:

- (i) Beta for the year 2012 – 13 1.05
- (ii) Risk free Rate 12%
- (iii) Long Range Market rate (based on BSE Sensex) 15.14%%
- (iv) Extracts from the liabilities side of balance sheet as at 31st March, 2013

	₹
--	---

Answer to PTP_Final_Syllabus 2008_Jun2014_Set 2

Equity	29,160
Reserves and surplus	<u>43,740</u>
Shareholder's fund	72,900
Loan funds	<u>8,100</u>
Total funds (long – term)	81,000

(v) Profit after tax	₹20,394.16 lakhs
(vi) Interest deducted from profit	₹487.00 lakhs
(viii) Effective tax rate (i.e. (Provision for Tax/PBT) x 100)	24.45%

Calculate Economic Value Added of Sandeep Ltd. as on 31st March 2013.

- (c) 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. [7+5+3]

Answer:

- (a) Jaggi and Lau suggested a model for valuation of human resources. According to them, proper valuation of human resources is not possible unless the contributions of individuals as a group are taken into consideration. They referred group to homogeneous employees whether working in the same department or division of the organization or not. They believed that an individual's expected service tenure in an organization is difficult to predict, but on a group basis, it is relatively easy to estimate the percentage of people in a group likely to leave the organization in future. Accordingly, they developed a model which attempts to calculate the present value of all existing employees in each rank. Such present value is measured with the help of the following steps:
- (i) Ascertain the number of employees in each rank.
 - (ii) Estimate the probability that an employee will be in his rank within the organization on terminated/promoted in the next period. This probability will be estimated for a specified time-period.
 - (iii) Ascertain the economic value of an employee in a specified rank during each time period.
 - (iv) The present value of existing employees in each rank is obtained by multiplying the above three factors and applying an appropriate discount rate.

Merit:

Jaggi and Lau model approached the valuation of human resources on the basis of grouping of employees. Under this method, calculations get simplified and the chances of errors get reduced.

Demerit:

- (i) This model ignores individual skills of the employees. The varied skills of the employees are not recognized in the valuation process under Jaggi and Lau model.
- (ii) The performance of a group may be seriously affected in the event of exit of a single individual.

- (b) We know that $EVA = NOPAT - \text{Cost of capital Employed}$

Where EVA = Economic value Added
NOPAT = Net Operating Profit after Tax

Required calculations are as follows:

(i) NOPAT

Profit After Tax	₹20,394.16 lakhs
------------------	------------------

Answer to PTP_Final_Syllabus 2008_Jun2014_Set 2

Add: Interest Net of tax [₹487 lakhs (1 – 0.2445)]	₹367.93 lakhs
NOPAT	₹20,726.09 lakhs

(ii) Cost of Equity:

$$\begin{aligned} \text{Cost of Equity} &= \text{Risk free Rate} + \beta [\text{Market rate} - \text{Risk Free Return}] \\ &= 12\% + 10.5 \times (15.14\% - 12.00\%) \\ &= 12\% + 3.30\% = 15.30\% \end{aligned}$$

(iii) Cost of Debt

$$\text{Cost debt} = \frac{\text{Interest on Loan Funds (1-Tax Rate)}}{\text{Loan funds}} \times 100$$

$$\text{Cost of Debt} = \frac{487 \times (1-0.2445)}{8100} \times 100 = 4.54\%$$

(iv) Weighted Average Cost of capital (WACC)

	Amount (₹ in lakhs)	Weight	Cost	WACC%
Equity	72,900	0.90	15.30	13.77
Debt	8,100	0.10	4.54	0.45
	81,000	1.00		14.22

(v) Cost of capital Employed = ₹81,000 x 14.22% = ₹11,518.20 lakhs

(vi) EVA = NOPAT – Cost of Capital Employed

$$= ₹20,726.09 \text{ lakhs} - ₹11,518.20 \text{ lakhs} = ₹9,207.89 \text{ lakhs}$$

(c) Future's Price = Spot + Cost of carry – Dividend

$$\begin{aligned} &= 260 + 260 \times 0.15 \times 0.25 - 2.5 \\ &= ₹267.25 \end{aligned}$$

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.

6. (a) During the financial year 2012-2013, ITC Ltd. had the following transactions:

(i) On 1st April 2012, ITC Ltd. purchased new asset of Fine Ltd. for ₹ 7,20,000. The fair value of Fine Ltd.'s identifiable net assets was ₹ 3,44,000. ITC Ltd. is of the view that due to popularity of Fine Ltd.'s products, the life of resulting goodwill is unlimited.

(ii) On May 2012, ITC Ltd., purchased a franchise to operate boating service from the State Government for ₹1,20,000 and at an annual fee of 1% of boating revenues. The franchise expires after 5 years. Boating revenues were ₹ 40,000 during financial year 2012-2013. ITC Ltd. projects future revenue of ₹80,000 in 2013-2014 and ₹1,20,000 per annum for 3 years thereafter.

(iii) On 5th July 2012, ITC Ltd. was granted a patent that had been applied for by Fine Ltd. During 2012-13, ITC Ltd. incurred legal costs of ₹1,02,000 to register the patent and an additional ₹ 1,70,000 to successfully prosecute a patent infringement suit against a competitor. ITC Ltd. expects the patents economic life to be 10 years. ITC Ltd. follows an accounting policy to amortize all intangibles on straight line basis over the

Answer to PTP_Final_Syllabus 2008_Jun2014_Set 2

maximum period permitted by accounting standard taking a full year amortization in the year of acquisition.

Prepare:

- A. A schedule showing the intangible section in ITC Ltd. balance sheet at 31st March 2013.
- B. A schedule showing the related expenses that would appear in the Statement of Profit and Loss of ITC Ltd. for 2012-2013.
- (b) The managing director of a Company decides that his Company will not pay any dividends till he survives. His current life expectancy is 20 years. After that time it is expected that the Company could pay dividends of ₹30 per share indefinitely. At present, the firm could afford to pay ₹5 per share forever. The required rate of return of this Company's shareholders is 10 per cent. What is the current value of the share?
- (c) Why do you value swaps? [(3+7)+3+2]

Answer: (a)

ITC Ltd.
Balance Sheet (Extract)
(Section relating to intangible asset)
As on 31st March 2013

A.

	Note No.	₹
Assets		
(1) Non- current asset		
Intangible assets	1	6,79,200

B. **Statement of Profit and Loss (Extract)**

For the year ended 31st March 2013

	Note No.	₹
Revenue from Operations		40,000
Total revenue		?
Expenses:		
Amortization	2	88,800
Other expenses	3	400
Total Expenses		?

Notes to Accounts (Extract)

	₹	₹
1. Intangible assets:		
Goodwill (Refer to note 1)	3,38,400	
Franchise (Refer to Note 2)	96,000	
Patents	2,44,800	6,79,200
2. Amortization expenses:		
Goodwill	37,600	
Franchise	24,000	
Legal cost	27,200	88,800
3. Other expenses:		
Franchise for 1% of 40,000		400

Answer to PTP_Final_Syllabus 2008_Jun2014_Set 2

Working Notes:

		₹
(1)	Cash Paid	7,20,000
	Less: Fair value of net assets	(3,44,000)
	Goodwill	3,76,000
	Less: Amortization (over 10 years as per SLM)	(37,600)
	Balance to be shown in the balance sheet	3,38,400
(2)	Franchise	1,20,000
	Less: Amortisation (over five years)	(24,000)
	Balance to be shown in the balance sheet	96,000
(3)	Legal costs (₹1,02,000 + ₹1,70,000)	2,72,000
	Less: Amortisation (over ten years as per SLM)	(27,200)
	Balance to be shown in the balance sheet	2,44,800

(4) As per para 63 of AS 26, 'Intangible Assets' there is a rebuttable presumption that useful life of a intangible asset will not exceed ten years. If life is taken for more than 10 years, then company will have to disclose the significant reasons for the assumption. Here, ITC Ltd. has simply stated that life is unlimited by saying that Fine Ltd.'s products are popular. However, this cannot be constituted as significant reason. Therefore, this assumption has not been taken into consideration.

(b) The value of the shares at the end of 20 years is: $P_{20} = \frac{30}{0.10} = 300$

The value today will be: $P_0 = \frac{300}{(1.1)^{20}} = 300 (0.1486) = ₹44.58$

If the company could pay dividends of ₹5 per share forever from the beginning, the price would be:

$$O_0 = \frac{5}{0.10} = ₹50$$

Thus the cost to each shareholder is the loss arising out of the difference between two prices: ₹ (50 – 44.58) = ₹5.42 per shares.

(c) Pricing of the swap is an important issue for two reasons. Banks function as warehouse of swaps and are ready to offer swap to the desired customers. For this they are ready to quote swap rates for paying and receiving fixed rate interest for receiving / paying benchmark variable rate. The other reason for valuing the swap is for the purpose of cancellation of an existing swap. On economic ground, a firm may like to cancel the obligations or part thereof by paying or receiving the value of the swap at that point of time.

7. (a) **What is Price-Book Value Ratio? What are the two measurement issues that you have to confront in computing this multiple? How return on equity and cost of equity can influence this ratio?**

(b) **Your client is holding the following securities:**

Particulars of securities	Equity share	Cost (₹)	Dividends (₹)	Market Price (₹)	Beta
---------------------------	--------------	----------	---------------	------------------	------

Answer to PTP_Final_Syllabus 2008_Jun2014_Set 2

Co. Alpha	10,000	1000	10200	0.8
Co. Beta	12,000	1000	12500	0.7
Co. Gama	18,000	1000	24000	0.5
Govt. Bonds	36,000	5400	34300	1.0

Assuming a risk free rate of 14%, calculate

(i) Expected rate of return in each, using the Capital Asset Pricing Model (CAPM)

(ii) Average return of the portfolio. [9+(4+2)]

Answer:

(a) The price/book (p/b) ratio, sometimes called the market-to-book ratio, links the stock/share price of a company with the book or accounting value of shareholders' equity per share. It reflects how many times book value investors are ready to pay for a share.

So if the share price is ₹ 10 and shareholders' equity is ₹ 5, investors are ready to pay two times the book value. In an efficient market, the share price should reflect a firm's future value creation potential whereas the accounting or book value of equity reflects the accumulation of past share issues and past retained profits/earnings, i.e. not yet distributed in dividends.

A higher p/b ratio should reflect greater expected future gains because of perceived growth opportunities and/or some competitive advantages and/or lesser risk but at the same time it indicates that the share price is relatively more expensive.

During periods where markets are out of equilibrium, for example during a bubble, high p/b ratios may also reflect over-optimism and over-pricing. Conversely, a lower p/b ratio can reflect either poorer future opportunities or potentially a bargain if the market is over-pessimistic or if one believes the market is not taking into account potential restructuring or a takeover that would improve future prospects.

Example

A p/b greater than one means the market value of the company is greater than its book value, this difference is sometimes called the market value added or market goodwill. It is because accounting poorly reflects the internally generated intangible assets of new economy firms, they generally have higher p/b ratios than the more traditional 'bricks and mortar' type firms that have more tangible assets sitting on their balance sheet.

The p/b ratio, like other pricing ratios such as the price/earnings, price/sales or price/cash flows, is often used in valuing firms or takeover targets by finding the p/b ratio of a set of comparable companies and applying it to the target's current or forecasted book value. Sometimes, investors look at the inverse of the ratio, the book/price or book-to-market ratio

The formula for the price to book value ratio is (Price per share)/ (book value of equity per share) Investors find this ratio useful for two reasons:

- (i) The book value provides a relatively stable, intuitive measure of value that can be compared to the market price. For investors who instinctively mistrusts cash flow estimates of value the book value is a much simpler benchmark for comparison.
- (ii) Given reasonably consistently accounting standards across firms, price-book value ratio can be compared across similar firms for signs of under- or over-valuation.

Answer to PTP_Final_Syllabus 2008_Jun2014_Set 2

There are two measurement issues that one has to confront in computing this multiple these are:

It being an accounting measure, the book value gets updated infrequently.

Since the price-book value ratio is a function of the return on equity, a difficult situation arises with the valuation of options outstanding, if any.

The price book value ratio is also influenced by the cost of equity, higher cost of equity leads lower price book value ratio. An analyst has to take care of it.

(b)

(i) Computation of Expected Return on Market Port folio $E(R_m)$: -

Investment	Cost (₹)	Dividends (₹)	Capital Gains (₹)
Co. Alpha	10,000	1,000	200
Co. Beta	12,000	1,000	500
Co. Gama	18,000	1,000	6,000
Govt. Bonds	36,000	5,400	(1,700)
	76,000	8,400	5,000

$$E(R_m) = \frac{(8400 + 5000)}{76000} \times 100 = 17.63\%$$

Calculation of expected rate of return on Individual security:

Co. Alpha	$14\% + 0.8 (17.63\% - 14\%) =$	16.90%
Co. Beta	$14\% + 0.7 (17.63\% - 14\%) =$	16.54%
Co. Gama	$14\% + 0.5 (17.63\% - 14\%) =$	15.82%
Govt. Bonds	$14\% + 1.0 (17.63\% - 14\%) =$	17.63%

(ii) Calculation of the Average return of the Portfolio:

$$= \frac{16.90\% + 16.54\% + 15.82\% + 17.63\%}{4} = 16.72\%$$

8. Following are the financial statement for A Ltd. and B Ltd. for the current financial year. Both the firm operate in the same industry:

Balance Sheet		(₹)	
Particulars	A Ltd.	B. Ltd.	
Total Current assets	14,00,000	10,00,000	
Total Fixed assets (net)	10,00,000	5,00,000	
	24,00,000	15,00,000	
Equity capital (of ₹ 100 each)	10,00,000	8,00,000	
Retained earnings	2,00,000		
14% Long-term debt	5,00,000	3,00,000	
Total Current liabilities	7,00,000	4,00,000	

Answer to PTP_Final_Syllabus 2008_Jun2014_Set 2

	24,00,000	15,00,000
--	-----------	-----------

Income-Statements

(₹)

Particulars	A Ltd.	B. Ltd.
Net sales	34,50,000	17,00,000
Cost of goods sold	27,60,000	13,60,000
Gross profit	6,90,000	3,40,000
Operating expenses	2,00,000	1,00,000
Interest	70,000	42,000
Earnings before taxes	4,20,000	1,98,000
Taxes (50%)	2,10,000	99,000
Earnings after taxes (EAT)	2,10,000	99,000

Additional Information

	A Ltd.	B Ltd.
Number of equity shares	1,00,000	80,000
Dividend payment ratio (D/P)	40%	60%
Market price per share (MPS)	₹ 40	₹ 15

Assume that the two firms are in the process of negotiating a merger through an exchange of equity shares. You have been asked to assist in establishing equitable exchange terms, and are required to –

- (i) Decompose the share prices of both the companies into EPS and P/E components, and also segregate their EPS figures into return on equity (ROE) and book value/intrinsic value per share (BVPS) components.
- (ii) Estimate future EPS growth rates for each firm.
- (iii) Based on expected operating synergies, A Ltd. estimates that the intrinsic value of B's equity share would be ₹ 20 per share on its acquisition. You are required to develop a range of justifiable equity share exchange ratios that can be offered by A Ltd. to B Ltd's shareholders. Based on your analysis in parts (i) and (ii) would you expect the negotiated terms to be closer to the upper, or the lower exchange ratio limits? Why?
- (iv) Calculate the post-merger EPS based on an exchange ratio of 0.4:1 being offered by A Ltd. Indicate the immediate EPS accretion or dilution, if any that will occur for each group of shareholders.
- (v) Based on a 0.4:1 exchange ratio, and assuming that A's pre-merger P/E ratio will continue after the merger, estimates the post-merger market price. Show the resulting accretion or dilution in pre-merger market prices. [4+2+3+3+3]

Answer:

(i) Determination of EPS, P/E ratio, ROE and BVPC of A Ltd. and B Ltd.

Particulars		A Ltd.	B Ltd.
Earning After Tax	(EAT)	₹ 2,10,000	₹ 99,000

Answer to PTP_Final_Syllabus 2008_Jun2014_Set 2

No. of Shares		100,000	80,000
EPS	(EAT/N)	₹ 2.10	₹ 1.2375
Market price per share	(MPS)	₹ 40	₹ 15
P/E ratio = (MPS/EPS)		19.05	12.12
Equity funds	(EF)	12,00,000	8,00,000
BVPC	(EF/N)	₹ 12	₹ 10
ROE = (EAT/EF) × 100		17.5%	12.375%

(ii) Estimates of Growth rates in EPS for each Firm	A Ltd.	B Ltd.
Retention ratio (1-D/P ratio)	0.6	0.4
Growth rate (ROE × Retention ratio)	10.5%	4.95%

(iii) Justifiable equity share exchange ratio

(a) Marketprice based = $\frac{MPS_B}{MPS_A} = \frac{₹ 15}{₹ 40} = 0.375 : 1$ (lower limit)

(b) Intrinsic value based = $\frac{₹ 20}{₹ 40} = 0.5 : 1$ (upper limit)

Since A Ltd. has a higher EPS, ROE, P/E ratio, and even higher EPS growth expectations, the negotiated terms would be expected to be closer to the lower limit, based on the existing share prices.

(iv) Calculation of Post-merger EPS and other effects

Particulars		A Ltd.	B Ltd.	Combined
EAT (i)	(₹)	2,10,000	99,000	3,09,000
Shares outstanding (ii)		1,00,000	80,000	1,32,000*
EPS (i)/(ii)	(₹)	2.10	1.2375	2.341
EPS Accretion (Dilution)	(₹)	0.241	(0.301)**	—

Working Notes: 1

* Shares outstanding (combined) = 1,00,000 shares + (0.40 × 80,000) = 1,32,000 Shares
 ** EPS claim per old share = ₹ 2.34 × 0.40 = ₹ 0.936
 EPS dilution of B Ltd. = ₹ 1.2375 – ₹ 0.936 = ₹ 0.3015

(v) Estimate of Post-merger Market Price and other effects

Particulars		A Ltd.	B Ltd.	Combined
EPS (i)	(₹)	2.10	1.2375	2.341
P/E Ratio		19.05	12.12	19.05
MPS (ii)	(₹)	40	15	44.60

Answer to PTP_Final_Syllabus 2008_Jun2014_Set 2

MPS Accretion (Dilution)	(i) × (ii)	(₹)	4.60	2.84***	
--------------------------	------------	-----	------	---------	--

Working Notes: 2			₹
MPS claim per old share		(₹ 44.60 × 0.4)	17.84
Less : MPS per old share			15.00
MPS accretion of B Ltd.			2.84***