REVISIONARY TEST PAPER

DECEMBER 2010

GROUP IV

DIRECTORATE OF STUDIES

THE INSTITUTE OF COST AND WORKS ACCOUNTANTS OF INDIA

12, SUDDER STREET, KOLKATA-700 016

GROUP - IV

Paper-18 : BUSINESS VALUATION MANAGEMENT

FINAL EXAMINATION

(REVISED SYLLABUS - 2008)

GROUP - IV

Paper-18 : BUSINESS VALUATION MANAGEMENT

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

(i) The return estimated from Capital Asset Pricing Model provides the weighted average cost of capital of a company.

(ii) Value gap is the difference between the synergy value and purchase price.

(iii) An ESOP can be used to improve worker productivity and to prevent hostile takeovers.

(iv) Companies, which are not expected to pay dividends, equity shares are not valued for them.

(v) In a synergic merger, the post merger value exceeds the sum of the separate companies pre-merger values.

(vi) Industrial groups are inherently less conservative than investors in allocating resources.

(vii) Stock dividends and stock splits may increase the stock price but not the value of the business.

(viii) Intrinsic value and market price of equity shares are always equal.

(ix) For calculating the value of an equity share by yield method, it is not essential to know capital employed.

(x) Depreciation generated funds are an additional source of capital and in fact, represent the largest single source of funds for some time.

(xi) The constant growth model takes into consideration the capital gains earned on a stock.

(xii) One way to increase EVA is to maintain the same operating income with less capital.

(xiii) Corporate brands and Service brands are often perceived to be interchangeable.

(xiv) Diversification is an important stratetic alternative to growth.

(xv) The value of a firm's equity is equal to the value of the firm less the value of non-equity claims.

Answer 1. (a)

(i) False
(ii) False
(iii) True
(iv) True
(v) True
(vi) False
(vii) True
(viii) False
(ix) True
(x) True
(xi) True

(xii) True

(xiii) True

(xiv) True

(xv) True

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

(i) In a debt for equity swap, a firm replacing equity with debt _____ , its leverage ratio. [increases/decreases].

(ii) DCF analysis requires the revenue and expenses of _____ , [past / future]

(iii) Estimated fair value of an asset is based on the _____ [current / discounted / future] value of operating cash flows.

(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) The _____ Assets Monitor is a management tool for organizations that wish to track and value their _____ assets. [tangible / intangible].

(vi) _____ is a research the purpose of which in mergers and acquisitions is to support valuation process, arm the negotiator, test the accuracy of representations and warranties contained in the merger agreement, fulfill disclosure requirements and inform the planners of post-merger integration. [Due Diligence / Certification].

(vii) Dividend yield is the dividend per share as a % of the _____ (book / market) value of operating cash flows.

(viii) A theory that explains why the total value from the combination resulted from a merger is greater than the sum of the values of the component companies operating independently is known as _____ Theory. [Synergy / Hubris / Agency].

(ix) In defending against a hostile takeover, the strategy that involves the target firm creating securities that give their holders certain rights that become effective when a takeover is attempted is called the _____ strategy. [Shark repellant / Greenmail / Poison pill].

(x) Key to income based approach of valuation is _____ [Capitalisation rate / Internal rate of Return].

Answer 1. (b)

(i) Increases

(ii) Future

(iii) Discounted

(iv) Negotiated price

(v) Intangible

(vi) Due diligence

(vii) Market value

(viii) Synergy

(ix) Poison pill

(x) Capitalisation rate

Q. 2. (a) Why do many mergers fail?

(b) Why do companies want to measure Intellectual Capital?

(c) What factors are considered for selection of a target in a business strategy?

Answer 2. (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 purchases turning out to be costly in terms of resources required to turn around the acquired company,

(v) Lack of community of goals,

(vi) Failure to integrate effectively.

Answer 2. (b)

The pre-dominant reason for valuation of intellectual capital (IC) has been for strategic or internal management purposes. The reasons are specifically :

(i) Alignment of IC resources with strategic vision,

(ii) To support or maintain various parties awareness of the company,

(iii) To help bridge between the present and the past,

(iv) Determine the most effective management structure,

(v) To influence stock prices by making several competencies visible to current and potential customers.

Answer 2. (c)

Factors to be considered for selecting a target :

(i) The target fits well with the acquisition objective,

(ii) The target has growth potential but faces some solvable managerial problems,

(iii) The market value of the target is lower than the acquirer's,

(iv) The target does not have too many ongoing litigations with substantial financial impact,

(v) The target's market-to-book value ratio is less than one.

Q. 3. Following are the information of two companies for the year ended 31.03.2006 :

Particulars	*Sun Pharma Ltd.*	*Novartis Ltd.*
Equity Shares of Rs 10 each	**800,000**	**10,00,000**
10% Pref Shares of Rs 10 each	**600,000**	**400,000**
Profit after tax	**300,000**	**300,000**

Assume the Market expectation is 18% and 80% of the profits are distributed.

(i) What is the rate you would pay to the Equity Shares of each company?

(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 share would you prefer?

(iii) Would your rates be different for buying small lot, if Sun Pharma Ltd retains 30% and Novartis Ltd 10% of the profits?

Answer 3. (a)

(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 :

Dividend per share / Market capitalization rate x 100

Sun Pharma Ltd. ; Rs. 2.4 / 18 × 100 = Rs. 13.33

Novartis Ltd.; Rs. 2.08 / 18 × 100 = Rs. 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 :

Earning per share (EPS) / Market capitalisation rate × 100

Sun Pharma Ltd.; Rs. 3 / 18 × 100 = Rs. 16.67

Novartis Ltd.; Rs. 2.6 /18 × 100 = Rs. 14.44

(ii) Preference dividend coverage ratio of both companies are to be compared to make such decision.

Preference dividend coverage ratio is given by :

Profit after tax / Preference dividend × 100

Sun Pharma Ltd.; Rs. 3,00,000 / Rs. 60,000 = 5 times

Novartis Ltd.; Rs. 3,00,000 / Rs. 40,000 = 7.5 times.

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

(iii) Yes, the rate will be different for buying a small lot of equity shares, if the Sun Pharma Ltd. Retains 30% and Novartis Ltd 10% of profits.

The new rates will be calculated as follows:

Sun Pharma Ltd.; Rs. 2.1 / 18 × 100 = Rs. 11.67

Novartis Ltd.; Rs. 2.34 / 18 × 100 = Rs. 13.00

Working Notes :

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

	Sun Pharma Ltd.	**Novartis Ltd.**
Profit before tax	300,000	300,000
Less: Preference dividend	60,000	40,000
Earnings available to equity shareholders (A)	240,000	260,000
Number of equity shares (B)	80,000	100,000
Earning per share (A/B)	3.0	2.60
Retained earnings 20%	48,000	52,000
Dividend declared 80% (C)	192,000	208,000
Dividend per share (C/B)	2.40	2.08

2. Computation of dividend per share (Sun Pharma retains 30% and Novartis 10% of profits)

Earnings available for Equity Shareholders	240,000	260,000
Number of Equity Shares	80,000	100,000
Retained earnings	72,000	26,000
Dividend distribution	168,000	234,000
Dividend per share	2.10	2.34

Q. 4. Write Short Notes On :

(i) Expansion and Diversification
(ii) Fair Market Value of intangible assets
(iii) Synergy
(iv) Calculated Intangible Value (CIV)
(v) Valuation of unlisted companies
(vi) Causes of Verticle Mergers

Answer 4. (i)

Expansion and Diversification :

Before a company diversifies, the possibility of expanding in the existing product line should be considered as it may help in gaining a bigger market share for the present business of the company. In terms of implementation, expanding the existing activities of the company is generally much easier than starting a new activity as the managers are familiar with the existing business.

Both the alternatives should be carefully weighted against their returns; tangible as well as intangible. The return on investment should be compared for the two alternatives keeping in view the prevailing fiscal policies, taxation, depreciation, incentives for new investments etc.

If the existing product is likely to have a steady and significant growth in its market size and there is larger, unfulfilled gap between supply and demand, the company should consider further capacity expansion for its existing product(s), unless there are other strategic reasons against sole dependence on the product. Expansion may be more desirable because of advantages of familiarity with the technology and equipment required, higher marginal productivity of labour and capital and the availability of the existing infrastructure. Often, manufacturing processes and adding balancing equipments.

While considering expansion, a company must also consider the image that customers carry with regard to its product lines. If the brand image is low, the company should be careful in expanding further and must check whether enough customers exist for its products. Diversification into product lines that will improve the brand image would be a option in such case. The possibility of the customers using the product more frequently or in higher quantities should also be explored.

Answer 4. (ii)

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;

- Computer software
- Patents
- Copyrights
- Quotas
- Mining rights
- 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, 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 cannot be measured reliably, that asset is not recognized as separate intangible but included in the goodwill.

Answer 4. (iii)

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 than the individual firms. And, hence, the combined value of the merged firms is likely to be greater than the sum of the individual entities (units). Symbolically;

$$\text{Combined value} = \frac{\text{Stand alone value of acquiring firm, } V_a + \text{Stand alone value of acquired target firm, } V_t + \text{Value of synergy, } \Delta V_{at}}{}$$

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 equal to the difference between the value of synergy and costs.

Net gain = Value of synergy, ΔV_{at} – Costs.

Answer 4. (iv)

Calculated Intangible Value (CIV) :

"Calculated Intangible Value" is a method of valuing a company's intangible values. Developed by NCI Research, CIV allows us to place a monetary value on intangible assets. This method allows us to calculate the fair value of the intangible assets. CIV computes the value of intangible assets by comparing the firm's performance with an average competitor that has similar tangible assets. An advantage of the CIV approach is that it allows firm-to-firm comparisons using audited financial data and as such, CIV can be used as a tool for benchmarking.

Answer 4. (v)

Valuation of unlisted companies :

For companies which are not quoted and are closely held, we cannot calculate the P/E ratio as the market price of the shares of such a company is not available. Hence, a representative P/E ratio of a group of comparable quoted companies can be taken after suitable adjustment. Generally, a discount is applied for valuation to the P/E ratio of comparable listed company so found out.

The other factors that may be taken into consideration while making earnings approach to valuation of an unlisted company are :

(a) *Company analysis* — shareholding pattern, voting powers, rights and obligations of shareholders in addition to other relevant factors.

(b) *Industry analysis* — whether it is a high or low growth industry, nature of industry and influence on it of seasonal, volatile or cyclical business fluctuations, major competitors and their market share, etc.

Answer 4. (vi)

Causes of Vertical Mergers :

In a vertical merger, one firm acquires either a customer or a supplier. Because horizontal mergers pose a direct threat to competition, they have been regulated more aggressively by the federal government than vertical mergers. Firms vertically integrate for many reasons. Some of the most common are to reduce uncertainty over the availability or quality of supplies or the demand for output, to take advantage of available economies of integration, to protect against monopolistic practices of either suppliers or buyers with which the firm must otherwise deal, and to reduce transactions costs such as sales taxes and marketing expenses. Through a vertical merger, the acquiring firm may lower its cost of production and distribution and make more productive use of its resources. Vertical integration by merger does not reduce the total number of economic entities operating at one level of the market, but it may change patterns of industry behavior. Suppliers may lose a market for their goods, retail outlets may be deprived of supplies, and competitors may find that both supplies and outlets are blocked. Vertical mergers may also be anticompetitive because their entrenched market power may discourage new businesses from entering the market.

Some benefits of vertical mergers can be seen on the :

(a) Vaue chain management,

(b) Technological & other economies,

(c) Tax benefits,

(d) Lesser investment in working capital,

(e) Better control on the supply side.

Q. 5. Current equilibrium price per share (MPS) and expected earning per share (EPS) of five companies in the same industry are given below. The cost of equity for the industry can be taken as 20%. Identify the company having maximum potential for growth.

COMPANY	*MPS*	*EPS*
A LTD.	**75.00**	**12.00**
B LTD.	**63.00**	**9.45**
C LTD	**65.00**	**7.80**
D LTD.	**70.00**	**11.90**
E LTD	**80.00**	**8.80**

Answer 5.

COMPANY	MPS (Rs) (a)	EPS / Ke (b) (b)	PVGO [c = (a-b)]	PVGO per Re of MPS (c / a)
A Ltd.	75.00	60.00	15.00	0.20
B Ltd.	63.00	47.25	15.75	0.25
C Ltd.	65.00	39.00	26.00	0.40
D Ltd.	70.00	59.50	10.50	0.15
E Ltd.	80.00	44.00	36.00	0.45

It is seen from the above analysis that E Ltd. has maximum potential for growth.

Q. 6. K Ltd. processes raw material M to make product A. Contribution per unit of A is Rs. 32. Each unit of A requires two units of M. The company can process maximum 20,000 units of M to produce 10,000 units of A. Demand for product is unlimited at present selling price but annual production is restricted to 6,000 units due to restricted supply of raw materials. B Ltd is the only supplier of the raw material.

K Ltd. wishes to acquire controlling interest in B Ltd. to ensure supply of raw material M. B Ltd. Makes two products M and N using same production facilities. Machine hour required for each unit of M and N are 4 and 5 respectively. Total machine hour available in a year is 75,000. Contribution per unit of M is Rs. 8 and that per unit of N is Rs. 15. Demand for N is restricted to 5,400 units.

Share capital of B Ltd. Consists of 50,000 ordinary shares of Rs 10 each. Tax rate is 40%and cost of capital is 10%.

Determine (i) maximum price A Ltd. Can offer for 51% interest in B Ltd; (ii) Likely change in value of B Ltd. if the acquisition is successful.

Answer 6.

	PRODUCT M	PRODUCT N
Contribution per unit	8.00	15.00
Machine hours required per unit	4	5
Contribution per machine hour	2.00	3.00

Since availability of machine hour is restricted and N gives higher contribution per machine hour, presumably, B Ltd. prefers to produce N to satisfy the entire demand of 5,400 units. This takes 27,000 (5,400 units x 5 machine hours per unit) machine hours, leaving 48,000 machine hours for production of M. The available machine hour permits B Ltd. to produce 12,000 units of M (48,000 machine hours / 4 machine hours per unit), which it supplies to K Ltd.

If the acquisition is successful, K Ltd. will require B Ltd. to use whole of 75,000 hours for production of M. This means, B Ltd. will lose Re 1 per hour (Rs. 3.00 – Rs. 2.00) for each of 27,000 hours currently used for production of N.

If acquisition is successful, the PAT of B Ltd. is expected to fall by Rs 16,200 annually [Rs. 27,000 (1-0.40)]. Since cost of capital is 10%, value of B Ltd. is expected to fall by Rs 1,62,000 (Rs. 16,200 / 0.10) after acquisition. In 75,000 machine hours, B Ltd. will make 18,750 units of M allowing K Ltd. to produce 9,375 units of A. If acquisition is successful, K Ltd. can expect to produce and sell 9,375 units of A instead of current 6,000 units.The additional contribution expected from additional sale of 3,375 units is Rs. 1,08,000 (3375 units × Rs. 32 per unit).

If acquisition is successful, K Ltd can expect its PAT to increase by Rs. 64,800 annually [Rs. 1,08,000 (1-0.40)]. Since cost of capital is 10%, value of K Ltd. is expected to rise by Rs. 6,48,000 [Rs. 16,200 / 0.10) after acquisition. The maximum consideration, that K Ltd. can offer for controlling interest in B Ltd. is Rs. 6,48,000. B Ltd. has 50,000 shares outstanding, 51% interest in this share capital consists of 25,500 shares. Maximum price per share = Rs. 25.41 (Rs. 6,48,000 / 25,500)

Q. 7. Explain the various methods of payment in case of mergers and amalgamations.

Answer 7.

Methods of payment in Mergers and Amalgamations :

(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 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 if he so desires.

Q. 8. Explain the concept of Human Resource Accounting (HRA) and outline the basic models for HRA.

Answer 8.

Human Resource Accounting (HRA) is a set of accounting methods that seek to settle and describe the management of a company's staff. It focuses on the employees' education, competence and the remuneration. HRA promotes the description of investments in staff, thus enabling the design of HR management systems to follow and evaluate the consequences of various HR management Principles. There are four basic HRA models :

(a) The anticipated financial value of the individual to the company. This value is dependent on two factors; the person's productivity and his / her satisfaction of being an employee in the company.

(b) The financial value of the group-describing the connection between motivation and organization on one hand and financial results on the other. This model does not measure value but concepts like motivation and welfare. Under this model, measurement of employee satisfaction is given great importance.

(c) Staff replacement costs describing the financial situation in connection with recruitment, reduction and redeployment of employees. This model focuses on replacement costs related the expenses connected with staff acquisition, training and separation. Acquisition covers expenses for recruitment, advertising etc. Training covers education, on-the job training etc. Separation costs covers lost production when a person leaves a job. This model can be used to describe the development of costs in connection with replacements. In many firms, such replacement costs are included in accounts as an expression of staff value to the company.

(d) HR accounting and balancing as complete accounts for HR area. This model concentrates on cost-control, capitalization of the historic expenses for HR. One effect of such a system is the visualization of inexpedient HR management routines.

The basic aims of HRA are very many.

First, HRA improves the management of HR from an organizational perspective through increasing the transparency of HR costs, investments and outcomes in traditional financial statements.

Second, HRA attempts to improve the bases for investors and company valuation.

Unfortunately, for several reasons, the accuracy of HRA is often called into suspicion.

Q. 9. (a) Explain the Cost based approach of Brand Valuation.

(b) Mr. Verma bought 100 shares of RIL Ltd. at Rs. 100 per share. He held the shares for 3 years and sold at Rs. 160 per share. The company paid Rs. 2.50 dividend per share in each of the three years. What total return did Verma earn from his investment?

Answer 9. (a)

Under the cost based approach method for 'Brand Valuation', the actual amount spent to build a brand is analyzed. This approach is a valuation technique that estimate value based on the cost incurred to create the item.

It is difficult to isolate and quantify all historic expenditures incurred in building the brand but it is often possible to identify external marketing costs including media and promotion spending. The next step is to adjust these expenditures for inflation. This approach is often a highly conservative estimate of the brand value because the cost approach does not factor all costs incurred in building the brand.

Labour costs and other overheads may not be identifiable with any brand creation or maintenance. However, it is possible to value a brand on the basis of what it actually costs to create or what it might theoretically cost to re-create. Difficulty in valuing as per cost incurred is that many a times when creating a brand, a large part of long-term investments cannot be traced from advertisement expenditure. It lies on steps like Quality Control, accumulated know-how, specific expertise, involvement of personnel etc.

Answer 9. (b)

Average investment = (Rs. 100 + Rs. 160) / 2 = Rs 130

Average annual income = Rs. 22.50 (Rs. 60 capital gain over 3 years plus Rs. 2.50 in dividends).

= Rs. 22.50 / Rs. 130 = .173

= 17.3%

So, total return to Mr Verma is 17.3%

Q. 10. What are the different approaches to valuation of target companies? Explain in detail.

Answer 10.

There are primarily four approaches to Enterprise / Equity Valuation which can be applied for Valuation of target companies. These are as under :

(i) Asset based valuation approach

(ii) Relative valuation approach

(iii) Capitalization of earning approach

(iv) Cash flow based valuation approach

(i) **Asset based valuation approach —** This approach assumes that the value of a company is the sum total of the value of its individual assets. Based on this, there are primarily three methods of valuing a company :

(a) Book value method

(b) Reinstatement value method

(c) Liquidation value method

Since the underlying concepts of value are not so relevant in determining the 'intrinsic value' of a target company, these methods are also irrelevant.

(ii) **Relative Valuation Method —** This approach involves valuing a company by comparing it with the valuation of other companies in the same industry. This comparison is done using two approaches :

(a) Comparison with industry averages

(b) Comparison with comparable companies

The various multiples that are frequently used are:

A. Price / Earnings per share

B. Price / Book Value

C. Price / Sale

D. Price / Replacement Costs of Assets

Relative valuation is not a sound approach for making an investment decision, let alone for valuing a target company from the acquisition purpose. However, relative valuation is very popular approach, right from the retail investors' to the fund managers and corporate bigwigs. The reason being that, this approach is easy to understand, apply and discuss.

(iii) **Capitalization of Earnings Approach** — In this approach, a company is valued, based on the multiple of its accounting earnings. Often, investors or even fund managers project the earnings of a company for the next two years, besides the estimates for the current year. These earnings are then multiplied by the projected P / E Ratio. Though the ratio used here viz; P/E, is estimated based on comparable companies or industry average. In capitalization of earnings, P/E is estimated based on the cost of equity, estimated growth rates in sales, earnings and cash flows, estimated payout ratios etc.

This approach is not always the best approach to find out the intrinsic value of company. However, it is again a very popular approach in the investment community and can be used as a supplementary approach to valuation based on cash flow discounting.

(iv) **Cash Flow Based Valuation Approach** — There are two basic valuation models under this approach;

(A) Dividend Discount Model

(b) Enterprise DCF Model

Both the methods are based on the income approach, where the value is determined by calculating the net present value of the stream of benefits generated by the business or the asset. Thus the DCF approach equals the enterprise value to all future cash flows discounted to the present using the appropriate cost of capital.

Q. 11. (a) Briefly explain the various steps in the valuation of a Brand

(b) Consider firm A has a pre-merger value of Rs 320 lakh and firm B has a pre-merger value of Rs 90 lakh. It is estimated that the merger would yield cost savings with a present value of Rs 40 lakh. For acquisition of firm C. Firm A will be required to make payment of Rs 100 lakh (consisting of issue of shares worth Rs 80 lakh and cash of Rs 20 lakh). Besides, it is to incur acquisition costs of Rs 5 lakh. Determine the value of gain, costs and net gain from merger.

Answer 11. (a)

Steps in valuation of a Brand are :

(i) Market segmentation

(ii) Financial analysis

(iii) Demand analysis

(iv) Competitive benchmarking

(v) Brand value calculation

Answer 11. (b)

Gain = Value of synergy (in terms of present value of cost savings), V_{at} = 40 Lakh

Costs= Value of cash and shares paid + Other acquisition costs – Pre-merger value of firm t
= Rs. 100 Lakh + Rs. 5 Lakh – Rs. 90 Lakh
= Rs. 15 Lakh

Net gain= ∆Vat- Costs = Rs. 40 Lakh – Rs. 15 Lakh
= Rs. 25 Lakh

In practice, the value of synergy, in well thought out mergers, is likely to be of higher value than the costs involved, yielding net gain.

Q. 12. (a) Firm A acquires Firm B. As of date Firm B has accumulated losses of Rs 1,000 Lakh. Firm A is well managed company with a good profit record. The projected profits before taxes, of Firm A, for the next three years are given in the table :

Year	*Amount (Rs.)*
1	**350**
2	**500**
3	**700**

Assuming corporate tax rate of 35 per cent and discount rate of 12 per cent,
Determine the present value of tax gains likely to accrue on account of merger to A.

(b) Are Real options and Managerial options the same?

Answer 12. (a)

Present Value (PV) of Tax Shield :

(Rs. Lakh)

Particulars	**Year-I**	**Year-II**	**Year-III**
PBT (a)	Rs. 350	Rs. 500	Rs. 700
Less : Adjustment against loss of Firm B/Reduction in taxable income (b)	Rs. 350	Rs. 500	Rs. 150*
Reduction in tax payments [(b) × 0.35]	Rs. 122.5	Rs. 175	Rs. 52.5
Multiple by PV factor at 12%	0.893	0.797	0.712
Total PV of tax shield is Rs. 286.24 Lakh [(c) × PV Factor]	109.39	139.47	37.38

(Rs. 1,000 Lakh accumulated loss of Firm B – Rs. 350 Lakh and Rs. 500 Lakh adjusted in years. 1 and 2 respectively).

Firm A gains Rs. 286.24 Lakh in terms of tax savings on acquisition of Firm B.

Answer 12. (b)

Real options occur when managers can influence the size and risk of a project's cash flows by taking different actions during the life of the project.They are referred to as real options as they deal with real and as opposed to the financial asset.

They are also called managerial options because they give opportunities to managers to respond to changing market conditions.

Q. 13. Following is the condensed income statement of a firm for the current year :

	(Rs. Lakh)
Sales revenue	**500**
Less- Operating costs	**300**
Less-Interest costs	**12**
Earnings before taxes	**188**
Less- Taxes (0.40)	**75.2**
Earnings after taxes	**112.8**

The firm's existing capital consists of Rs. 150 Lakh equity funds, having 15 percent cost and of Rs. 100 Lakh, 12 percent debt. Determine the EVA during the year.

Answer 13.

(i) Determination of Net Operating Profit After Taxes

	(Rs. Lakh)
Sales revenue	500
Less- Operating costs	300
Operating profit (EBIT)	200
Less- Taxes (0.40)	80
Net operating profit after taxes (NOPAT)	120

(ii) Determination of WACC

Equity (Rs. 150 Lakh × 15%)	Rs. 22.5 Lakh
12% Debt (Rs. 100 Lakh × 7.2 %)*	7.2
Total cost	29.7
WACC (29.7 Lakh / Rs. 250 Lakh)	11.88%

*Cost of debt = 12% (1- 0.4 tax rate) = 7.2 per cent

(iii) Determination of EVA

EVA = NOPAT* – (Total capital × WACC)

= Rs. 120 lakh – (Rs. 250 lakh × 11.88%)

= Rs. 120 lakh – Rs. 29.7 lakh

= Rs. 90.3 lakh

During the current year, the firm has added an economic value of Rs. 90.3 lakh to the existing wealth of the equity shareholders. Essentially, the EVA approach is modified accounting approach to determine profits earned after meeting all financial costs of all the providers of capital. Its major advantage is that, this approach reflects the true profit position of the firm.

Q. 14. (a) Describe the advantages and disadvantages associated with holding companies.
What is Pyramiding and what are its consequences?
(b) It is common to compare firms on their price to EBITDA ratios.
What are the merits and demerits of using this measure?

Answer 14. (a)

The advantages of the holding company arrangement are :

- The leverage effect resulting from being able to control large amounts of assets with relatively small rupee investments,
- The risk protection resulting from the diversification of risk,
- Legal benefits resulting in reduced taxes and the autonomy of subsidiaries; and
- The lack of negotiation required to gain control of a subsidiary.

The disadvantages of the holding company arrangement are :

- Increased risk from the leverage obtained by a holding company (losses as well as gains are magnified),
- Double taxation, which results because a portion of the holding company's income from a subsidiary whose earnings have already been taxed before paying dividends that are taxed at the parent level,
- The difficulty in analyzing holding companies due to their complexity, which may depress price-earning multiples,
- High administrative costs from managing the diverse entities in a holding company.

Pyramiding of holding companies occurs when one holding company controls other holding companies. This arrangement causes even greater magnification of earnings or losses.

Answer 14. (b)

Merits :

The price-to-EBITDA ratio has the same merits as the Price-to-EBITDA ratio. But, by adding back depreciation and amortization to EBIT, it rids the calculation of an accounting measurement that can vary over firms and for a given firm, is sometimes seen as suspect. It thus can make firms more comparable.

Problems :

This multiple suffers from the same problems as the Price-to-EBIT ratio. In addition, it ignores the fact that depreciation and amortization are real costs. Factories depreciate (lose value) and this is a cost of operations, just as labour costs are. Copyrights and Patents expire. Goodwill on a purchase of another firm is a cost of the purchase that has to be amortized against the benefits (income) from the purchase, just as depreciation amortizes the cost of physical assets acquired. The accounting measures of these economic costs may be doubtful, but costs they are.

So, adding back depreciation and amortization may reduce comparability.

Q. 15. What drives M & A activity? What are its key facilitators in India? What are its benefits?

Answer 15.

The important drives of Mergers and Acquisitions include economics of scale, complementary resources, utilization of surplus funds, tax shields, strategic benefits, and managerial effectiveness.

The Organization for Economic Cooperation and Development (OECD) in its report on 'Mergers and Competition Policy' has listed the following twelve most cited motives :

Category	Motives
A. Economies of Scale-related reasons	1. Obtain Real Economies of scale
B. Market share reasons	2. Acquire capacity at reduced prices
	3. Increase market power.
C. Financial synergy-related reasons	4. Expand production without price reduction.
	5. Build an empire
D. Diversification of risk-related reasons	6. Rationalize production
	7. Obtain tax advantages.

Key facilitators of M & A activity in India : M & A activities are expected to witness a sharp rise in both number and size of transactions. Some of the key facilitators for M & A are :

- Conducive regulatory framework through increased deregulation
  - i. MRTP/FERA dilution
  - ii. Industry delicensing
  - iii. Enaction of take over code: Buy back regulations.
- Integration with the global economy
  - i. Gradual shift to free trade, currency convertibility, IPR regime etc.
- Disinvestment/Privatisation of PSUs.
- Financial and liquidity reasons
- Paper to paper transactions viz. share swaps.
- Low market valuations compared to book value replacement value.

Mergers in India are to abide by the Companies Act, Listing agreements (Stock exchanges), and SEBI code – the basic objective being to ensure a fair play between the related concerns and a good deal for the economy.

Benefits of M & A :

Benefits of M & A can be considered int wo parts : The visible benefits and the invisible benefits. They are given below:

The easily visible benefits :

- Increased market share
- Acess to distribution Networks
- Acquisition of and access to needed brand product
- Increase in manufacturing capacity
- Enhanced product range
- Increased profitability
- Tax benefits
- Leveraging capacity

Invisible benefits :

- Improved Organization skills
- Acquisition of Market knowledge
- Better Supplier chain

— Improvement of process skills
— Enhancement of R & D Capacity
— Acquisition to people assets and their knowledge base.

Q. 16. The following data is given to you regarding a company having a share in branded portion as well as unbranded portion :

Branded revenue	**Rs. 500 per unit**
Unbranded revenue	**Rs. 120 per unit**
Branded cost	**Rs. 350 per unit**
Unbranded cost	**Rs. 100 per unit**
Research & Development	**Rs. 20 lakhs**
Branded products	**1 lakh units**
Unbranded products	**40,000 units**
Tax rate is 39.55%	
Capitalization factor 18%	
Calculate the brand value	

Answer 16.

The net revenue from the branded product = (Revenue – Cost) × Quantity sold
= (Rs. 500 – Rs. 350) × 100,000
= Rs. 150,00,000

The net revenue from the unbranded product = (Rs. 120 – Rs. 100) × 40,000
= Rs. 800,000

PAT (Profit After Tax) for branded product
= (150,00,000 – 800,000 – R&D Expenditure) × (1-0.3955)
= (142,000-20,00,000) × (1-0.3955)
= 122,00,000 × 0.6045
= Rs. 73,74,900

Brand Value = Returns/capitalization rate
= Rs. 73,74,900 / 0.18
= Rs. 4,09,71,666.

Q. 17. The following abridged Balance Sheet as at 31st March, 2005 pertains to Florence Ltd.

In lakhs

Labilities	*Rs.*	*Assets*	*Rs.*
Share Capital :		**Goodwill, at cost**	**420**
180 lakh Equity Shares of Rs. 10 each, fully paid up	**1,800**	**Other Fixed Assets**	**11,166**
		Current Assets	**2,910**
90 lakh Equity shares of Rs. 10 each, Rs. 8 paid up			
150 lakh Equity shares of rs. 5 each, fully paid-up	**750**	**Loans and Advances**	**933**
		Miscellaneous Expenditure	**171**
Reserves and Surplus	**5,628**		
Secured Loans	**4,500**		
Current Liabilities	**1,242**		
Provisions	**960**		
	15,600		**15,600**

You are required to calculate the following for each one of the three catagories of equity

Shares appearing in the above mentioned Balance Sheet :

(i) Intrinsic value on the basis of book values of Assets and Liabilities including goodwill;

(ii) Value per share on the basis of dividend yield.

Normal rate of dividend in the concerned industry is 15%, where as Glorious Ltd has been paying 20% dividend for the last four years and is expected to maintain it in the next few years; and

(iii) Value per share on the basis of EPS.

For the year ended 31st March, 2005 the company has earned Rs. 1,371 lakh as profit after tax, which can be considered to be normal for the company. Average EPS for a fully paid share of Rs. 10 of a Company in the same industry is Rs. 2.

Answer 17.

(i) Intrinsic value on the basis of book values

	Rs. in lakhs	*Rs. in lakhs*
Goodwill		420
Other Fixed Assets		11,166
Current Assets		2,910
Loans and Advances		933
		15,429
Less: Secured loans	4,500	
Current liabilities	1,242	
Provisions	960	6,702
		8,727
Add: National call on 90 lakhs equity shares @ Rs. 2 per share		180
		8,907

Equivalent number of equity shares of Rs. 10 each.	
Fully paid Shares of Rs. 10 each	180
Partly-paid shares after national call	90
Fully paid shares of Rs. 5 each, [Rs.150 lakhs*Rs.5/Rs. 10]	75
	345

Value per equivalent share of Rs. 10 each = Rs. 8,907 lakhs/ 345 lakhs = Rs. 25.82

Hence, intrinsic values of each equity share are as follows :

Value of fully paid share of Rs. 10 = Rs. 25.82 per equity share.

Value of share or Rs. 10, Rs. 8 paid-up = Rs. 25.82- Rs. 2 = Rs. 23.82 per equity share.

Value of fully paid share of Rs. 5 = Rs. 25.82/2 = Rs. 12.91 per equity share.

(ii) Valuation on dividend yield basis :

Value of fully paid share of Rs. 10 = 20/15* Rs.10 = Rs. 13.33

Value of share of Rs. 10, Rs. 8 paid-up =20/15* Rs.8 = Rs. 10.67

Value of fully paid share of Rs. 5 = 20/15*5 = Rs.6.67

(iii) Valuation on the basis of EPS :

Profit after tax = Rs. 1,371 lakhs

Total share capital = Rs. (1,800+720+750) lakhs = Rs. 3,270 lakhs

Earning per rupee of share capital = Rs. 1,371 lakhs/ 3,270 lakhs = Re. 0.419

Earning per fully paid share of Rs. 10 = Re. 0.419 * 10 = Rs. 4.19

Earning per share or Rs. 10 each, Rs. 8 paid-up = Re. 0.419*8 = Rs. 3.35

Earning per share of Rs. 5, fully paid-up = Re. 0.419*5 = Rs. 2.10

Value of fully paid of Rs. 10 = Rs. 4.19/2*10 = Rs. 20.95

Value of fully paid share or Rs. 8 paid-up = Rs. 3.35/2*10 = Rs. 16.75

Value of fully paid share or Rs. 5 = Rs. 2.10/2*10 = Rs.10.50

Q. 18. From the following data, compute the 'Net Assets Value' of each category of equity shares of HCC Ltd :

Shareholders funds

10,000 'A' Equity shares of Rs. 100 each, fully paid

10,000 'B' Equity shares of Rs. 100 each, Rs. 80 paid

10,000 'C' Equity shares of Rs. 100 each, Rs. 50 paid

Retained Earnings Rs. 9,00,000

Answer 18.

(i) Computation of Net assets

Worth of net assets is equal to shareholders' fund, i.e.

		Rs.
Paid up value of 'A' equity shares	10,000 × Rs. 100	10,00,000
Paid up value of 'B' equity shares	10,000 × Rs. 80	8,00,000
Paid up value of 'C' equity shares	10,000 × Rs. 50	5,00,000
Retained earnings		9,00,000
Net assets		**32,00,000**

(ii) Net asset value or equity share or Rs. 100 paid up.

National calls or Rs. 20 and Rs. 50 per share on 'B' and 'C' equity shares respectively will make all the 30,000 equity shares fully paid up at Rs. 100 each. In that case,

	Rs.
Net assets	32,00,000
Add : National calls (10,000 × Rs. 20+10,000 × Rs. 50)	7,00,000
	39,00,000

Value of each equity share or Rs.100 fully paid up= Rs.39,00,000/30,000=Rs.1.30

(ii) Net asset values of each category of equity shares

	Rs.
Value of 'A' equity shares or Rs. 100 fully paid up	130
Value of 'B' equity shares of Rs. 100 each, out of which Rs.80 paid up (130-20)	110
Value of 'C' Equity shares of Rs. 100 each, out of which Rs. 50 paid up (130-50)	

Q. 19. Explain what is Tobin's Q. What are the circumstances when it is more useful?

Answer 19.

Tobin's Q is a ratio comparing the value of the stocks of a company listed in the financial market with the value of a company's equity book value. James Tobin developed this ratio.

Traditionally Tobin's Q was used as a method for predicting investment behavior. Tobin's Q compares the market value of a company with the replacement cost of its assets. It uses the ratio (the Q) to predict the investment decisions of the firm, independent of macro-economic conditions such as interest rates. The replacement cost of fixed assets can be calculated as the reported value of a company's fixed assets plus the accumulated depreciation and adjusted for inflation.

As with market-to-book value ratios, Tobin's Qis most revealing when like companies are compared over a period of several years. Use of both Tobin's Q and the market-to-book ratio are best suited to making comparisons of the value of intangible assets of firms within the same industry, serving the same market, that have similar types of hard assets.

When both the "Q" and the market-to-book ratio of a company are falling over time, it is a good indicator that the intangible assets of the firm are depreciating. This may provide a signal to investors that a

particular company is not managing its intangible assets effectively and may cause them to adjust their investment portfolios towards companies with climbing or stable "Q" s.

An advantage of Tobin' Q over the market-to-book ratios is that the Tobin's Q approach neutralizes the effects of different depreciation policies.

Tobin's Q can be an useful measure of intellectual capital because it can reflect the value markets place on assets, which are not typically reported in the conventional Balance Sheet.

By making intra-industry comparisons between a firm's primary competitors, these indicators can act as performance benchmarks that can be used to improve the internal management or corporate strategy of the firm

The information provided by these ratios facilitates internal benchmarking; enabling the organization to track its progress in the area that it has defined as being integral to its success.

Q. 20. Technofab Ltd., is considering the purchase of a new machine for its immediate expansion programme. There are three possible machines at the same cost, which are suitable for the purpose. The details of these are given with estimated cost and sale values :

Items	*Machine A (Rs.)*	*Machine B (Rs.)*	*Machine C (Rs.)*
Capital cost	**3,00,000**	**3,00,000**	**3,00,000**
Sales (at standard prices)	**5,00,000**	**4,00,000**	**4,50,000**
Net cost of production			
Direct Material	**40,000**	**50,000**	**48,000**
Direct Labour	**50,000**	**30,000**	**36,000**
Factory Overheads	**60,000**	**50,000**	**58,000**
Selling & Distribution costs	**10,000**	**10,000**	**10,000**
Administration costs	**20,000**	**10,000**	**15,000**

The economic life of machine 1 is 2 years, while it is 3 years for other two macines, after which the scrap value will be Rs. 40,000, Rs. 25,000 and Rs. 30,000 respectively. Sales are expected to be at the rates shown for each year during the lifetime of machines. The cost relates to the annual expenditure resulting from each machine. Average tax rate is 45% Payables and Receivables are settled promptly. Return on capital is to be on an uniform basis of 8% p.a.

You are required to value the proposals and show which machine would be the most profitable investments on the basis of net cash flows.

(State the assumptions, if any, you had made in arriving at the answer)

Answer 20.

Statement showing Valuation of the Proposals :

Items	Machine A (Rs.)	Machine B (Rs.)	Machine C (Rs.)
Capital cost	3,00,000	3,00,000	3,00,000
Sales	5,00,000	4,00,000	4,50,000
Cost of production	150,000	1,30,000	1,42,000
Administration cost	20,000	10,000	15,000
Selling & Distribution cost	10,000	10,000	10,000
Total cost	1,80,000	1,50,000	167,000
PBDI(Sales – Cost)	3,20,000	2,50,000	283,000
Depreciation: Cost less Scrap value / life	1,30,000	91,667	90,000
Interest on Borrowings	24,000	24,000	24,000
PBT	1,66,000	1,34,333	1,69,000
Taxation@45%	74,700	60,451	76,050
PAT	91,300	73,882	92,950
Add- Depreciation + Interest	1,54,000	1,15,667	1,14,000
Net Cash Flow	2,45,300	1,89,549	2,06,950
No. of years for cost recovery	1.21 years	1.58 years	1.45 years

Conclusion : Hence investment in Machine A will be the most profitable, on the basis of net Cash flows.

The following are the assumptions made while arriving at the answer :

- Factory overheads do not include depreciation,
- Interest will have to be paid on borrowings for machine purchased during the life of the machine,
- No borrowings have been made for working capital.

Q. 21. Sanju holds 12,000 equity shares of HCC Ltd., the nominal and paid-up share capital of which consists of :

(i) 40,000 equity shares of Re 1 each, and

(ii) 10,000, 8% Preference shares (non-participating) of Re 1 each

It is ascertained that :

(i) The normal annual profit of such a company is Rs. 12,000

(ii) The normal rate of transfer to general reserve is 10%

(iii) The normal return by way of dividend on the paid up value of equity share capital for the type of business carried on by the company is 15%.

Prepare a share valuation report for Sanju showing value of his shareholding in HCC Ltd based on the above parameters.

Answer 21.

Calculation of Net Distributable Profit

Particulars	Amount (Rs.)
Annual Profit (after tax)	12,000
Less- Transfer to General Reserve	1,200
Balance	10,800
Less-Preference Dividend	800
Net Distributable Profit	10,000

Return on equity share capital = Rs. 10,000 / Rs. 40,000 = 25%

Normal return on equity share capital for the type of business carried on by the company = 15%

Value per share =0.25 / 0.15 × Re 1 = Rs. 1.6667

Value of Sanju's holding = 12,000 shares × Rs. 1.6667 = Rs. 20,000

Q. 22. (a) Companies X, Y and Z are in the same industry. Company X has a 5 per cent growth rate, pays @ Rs. 2.00 dividend and sells for Rs. 25 per share. Company Y pays a Rs. 4.00 dividend, has an 8 per cent growth rate, and is not publicly traded. Company Z sells for Rs. 60, pays a Rs. 6 dividend, and has a 2 per cent growth rate. What is the value of the stock of Company Y?

(b) Explain how it is possible for sales growth to decrease the value of a profitable company.

Answer 22. (a)

CR_X = Rs. 2 / Rs. 25 + .05 = 13 %

CR_Z = Rs. 6 / Rs. 60 + 0.02 = 12%

CR_{AVG} = 12.5%

Value of Y = Rs. 4 / (12.5% – 8%)

= Rs. 89.

[As we know, $D_1 / P_0 + g$]

Answer 22. (b)

A company can be profitable and yet have an Return on Invested Capital (ROIC) that is less than the Weighted Average Cost of Capital (WACC), if the company has large capital requirements. If, ROIC is less than the WACC, then the company is not earning enough on its capital to satisfy investors. Growth adds even more capital that is not satisfying investors, hence, growth decreases value.

It is thus clear that merely being a profit earning company is not enough. If the profit earnings give a rate of return on Investable Capital / Funds that is less than the WACC deployed. This will erode shareholder value and result in a decrease in value even of a profitable company. Capital structure and WACC in reference to the rate of return, thus becomes a very significant factor in valuation.

Q. 23. Why might discounted cash flow valuation be difficult to do for the following types of firms viz; (a) Private firms, (b) Firms with patent or product options (c) Cyclical firms during recession (d) Firms in trouble (e) Firms in process of restructuring (f) Firms with unutilized assets.

Answer 23.

Private Firms : The biggest problem in using discounted cash flow valuation models to value private firms is the measurement of risk (to use in estimating discount rates), since most risk return models require that

risk parameters be estimated from historical prices of the asset being anslyzed. Since securities in private firms are not traded, this is not possible. One solution is to look at the riskiness of comparable firms that are publicly traded. The other is to relate the measure of risk to accounting variables, which are available for the private firm.

(a) **Firms with Patents or Product options :** Firms often have unutilized patents or licenses that do not produce any current cash flows and are not expected to produce cash flows in the near future, but nevertheless are valuable. If this is the case, the value obtained from discounting expected cash flows to the firm will understate the true value of the firm. Again, the problem can be overcome, in this case by valuing these assets in the open market or by using option pricing models, and then adding the value obtained from discounted cash flow valuation.

(c) **Cyclical Firms during recession :** The earnings and cash flows of cyclical items tend to follow the economy using during economic booms and falling during recessions. If discounted cash flow valuation is used on these firms, expected future cash flows are usually smoothed out, unless the analyst wants to undertake the onerous task of predicting the timing and duration of economic recession and recoveries. In the depths of a recession many cyclical firms look like troubled firms, with negative earnings and cash flows. Estimating future cash flows then becomes entangled with analyst predictions about when the economy will turn and how strong the upturn will be, with more optimistic analysts arriving at higher estimates of value. This is unavoidable, but the economic biases of the analysts have to be taken into account before using these valuations.

(d) **Firms in trouble :** A distressed firm generally has negative earnngs and cash flows and expects to lose money for some time in the future. For these firms, estimating future cash flows is difficult to do, since there is a strong probability of bankruptcy. For firms that are expect to fail, discounted cash flow valuation does not work very well, since the method values the firm as a going concern providing positive cash flows to its investors. Even for firms that are expected to survive, cash flows will have to be estimated until they turn positive, since obtaining a present value of negative cash flows will yield a negative value for equity or for the firm.

(e) **Firms in the Process of Restructuring :** Firms in the process of restructuring often sell some of their assets, acquire other assets, and change their capital structure and dividend policy. Some of them also change their ownership structure (going from publicity traded to private status and vice versa) and management compensation schemes. Each of these changes makes estimating future cash flows more difficult and affects the riskness of the firm. Using historical data for such firms can give a misleading picture of the firm's value. However, these firms can be valued, even in the light of the major changes in investment and financing policy, if future cash flows reflect the expected effects of these changes and the discount rate is adjusted to reflect the new business and financial risk in the firm.

(f) **Firms with Unutilized Assets :** Discounted cash flow valuation reflects the value of all assets that an unutilized (and hence do not produce any cash flows), the value of these assets will not be reflected in the value obtained from discounting expected future cash flows. The same caveat applies, in lesser degree, to underutilized assets, since their value will be understated in discounted cash flow valuation. While this is a problem, it is not insurmountable. The value of these assets can always be obtained externally and added to the value obtained from discounted cash flow valuation. Alternatively, the assets can be valued as though they are used optimally.

Q. 24. (a) Following is the consolidated income statement of Supreme Industries Ltd. for the current year :

(Rs. in Lakh)

Sales revenue		**500.00**
***Less* : Operating costs**	**300**	
Interest costs	**12**	
Earnings before taxes (EBT)		**188.00**
***Less* : Taxes (0.40)**		**75.20**
Earnings after taxes (EAT)		**112.80**

(b) What do you mean by Human Resource Accounting (HRA)? What are the basic aims of HRA?

Answer 24. (a)

(i) **Determination of Net Operating Profit After Taxes :**

(Rs. in Lakh)

Sales revenue	500
Less : Operating costs	300
Operating Profit (EBIT)	200
Less : Taxes (0.40)	80
Net operating profit after taxes (NOPAT)	120

(ii) **Determination of WACC :**

Equity (Rs. 150 lakh × 15%)	Rs. 22.5 lakhs
12% Debt (Rs. 100 lakh × 7.2%)*	7.2
Total cost	29.7
WACC (29.7 lakh / Rs. 250 lakh)	11.88%

* Cost of debt = 12% (1 – 0.4 tax rate) = 7.2 per cent

(iii) **Determination of EVA :**

EVA = NOPAT* - (Total capital × WACC)

= Rs. 120 lakh – (Rs. 250 lakh × 11.88%)

= Rs. 120 lakh – Rs. 29.7 lakh = Rs. 90.3 lakh

During the current year, the firm has added an economic value of Rs. 90.3 lakh to the existing wealth of the equity shareholders. Essentially, the EVA approach is a modified accounting approach to determine profits earned after meeting all financial costs of all the providers of capital. Its major advantage is that this approach reflects the true profit position of the firm.

Answer 24. (b)

Human Resource Accounting (HRA) is a set of accounting methods that seek to settle and describe the management of a company's staf. It focuses on the employees' education, competence and remuneration. HRA promotes the description of investments in staff, thus enabling the design of HR management systems to follow and evaluate the consequences of various HR management Principles.

The basic aims of HRA are very many;

First, HRA improves the management of HR from an organizational perspective-through increasing the transparency of HR costs, investments and outcomes in traditional financial statement.

Second, HRA attempts to improve the bases for investors and company valuation.

Unfortunately, for several reasons, the accuracy of HRA is often called into suspicion.

Q. 25. What are the possible causes of Horizontal and Vertical Mergers? What factors are considered for selecting a target in a business acquisition strategy?

Answer 25.

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

Horizontal Mergers :

- Economies of scale,
- Increase monopoly and bargaining power,
- Product & services complementaries,
- Management opportunity (i.e. weed out poor management), Acquisition of new products and brands.

Vertical Mergers :

- Value chain management,
- Technological and other economies (thorugh avoiding duplication),
- Tax benefits,
- Better control on the supply side.

Factors to be considered for selecting a target in a business acquisition strategy :

(i) The target fits well with the acquisition objective;

(ii) The target has growth potential but faces some solvable managerial problems;

(iii) The market value of the target is lower than the acquirer;

(iv) The target does not have too many on-going litigations with substantial financial impact;

(v) The target's market-to-book ratio is less than one;

(vi) The target has highly liquid balance-sheet with large amount of excess cash, a valuable securities portfolio, significant unsued debt capacity and underutilized capacity;

(vii) The target may have subsidiaries or assets which could be sold off without imparting cash flows;

(viii) Avoidance of current cut-throat competition;

(ix) Acquisition of brand names, patent rights, etc.;

(x) Synergy, economies of scale, etc.

Q. 26. (a) The price of a company's share is Rs. 80 and the value of growth opportunities is Rs. 20. If the company's capitalization rate is 15 percent, what is the earnings-price ratio? How much is earning per share?

(b) How would you value a real estate? What are the different levels of market efficiency?

Answer 26. (a)

Earning price ratio = 0.15 [1– 20/80] = 0.15 (1– .25) = .1125 = 11.25% Earning per share = EPS = 80 × .1125 = Rs. 9.00

Answer 26. (b)

For evaluation of a real estate, one can use the cash flow technique. Of course, in order to use the Discounted cash flow technique the valuer should consider cash inflows like rent, reimbursement of rates and utility expenses, terminal value as well as cash outflows like property taxes, insurance, repairs and maintenance, advertising and utility expenses.

Other simpler methods like Standardized Value Measures (e.g. price per square meter) and Comparable Asset Values (gross income multiplier) are also used.

It should be noted the CAPM (Capital Asset Pricing Model) and the APM (Arbitrage Pricing Model) cannot be used easily in valuing a real estate because of some inherent fetures in real estates e.g., lack of regular trading in real estates, dissimilar nature of any two real estates, terminal values often differing between two real estates, and the like.

Investors determine stock prices on the basis of the expected cash flows to be received from a stock and the risk involved. Rational investors should use all the information they have available or can reasonably obtain. The information set includes beliefs about the future (ie, information that can reasonably be inferred). A markets is efficient relative to any information set if investors are unable to earn abnormal profits (returns beyond those warranted by the amount of risk) by using that information set in their investing decisions.

An efficient market is defined as one in which all information is reflected in stock prices quickly and fully. If some types of information are not fully reflected in prices and there is some lag in the information being reflected in prices, the market is not perfectly efficient, though it is certainly not inefficient. According to the efficient market hypothesis (EMH), the market is classified as weak-form efficient, semi-strong efficient and strong-form efficient. E. Fama describe these three levels of efficiency as follows :

Weak Form : This part of the efficient market hypothesis states that prices reflect all price and volume data which are all past. As a result, it gives no idea of future price changes. Technical analysis on the basis of past data is thus of little or no value.

Semi-strong Form : It involves not only past known market data, but all publicly known and available data, such as earnings, dividends, stock split announcemnts, new product developments, financing difficulties, and accounting changes. If any lags exist in the adjustment of stock prices to certain announcements, smart investors can exploit these lags and earn abnormal returns.

Strong Form : This is the most stringent form of market efficiency. It assets that stock prices fully reflect all information, public and nonpublic. The strong form focuses not only on the speed of reflection of the information into stock prices (as the semi-strong form does), but considers the value of the information as well. In a strong form efficient market no group of investors should be able to earn, over a reasonable period of time, abnormal rates of return by using information in a superior manner.

Q. 27. Given the following :

(a) EPS = Rs. 5.00, Market Price = Rs. 60.00, Growth rate of sales = 6% and EPS = 9%, Dividend payout = 705, Normal capitalization rate = 12%, Using the capitalization and dividend growth methods, what is the value of the stock?

(b) Computech International has a well earned reputation for earning a high return on capital. The firm had a return on capital of 100%, on capital invested of Rs. 1500 crore, in 2008-09.

Assume that you have estimated the value of the research asset to be Rs. 1,000 crore. In addition, the R & D expense this year is Rs. 250 crore and the amortization of the research asset is Rs. 150 crore.

Re-estimate Computech's return on capital.

Answer 27.

(a) Computation of the value of the stock :

Capitalisation of earnings: Rs. 5 (8.33)* = Rs. 41.67

*1/.12 = 8.33

Capitalisation of dividends: Rs. 2 (11.9)* = Rs. 23.80

*833(70) = 119

Capitalisation of earnings and dividends : 8.33 (Rs. 2.00 + 30% of Rs. 5.00) = Rs. 29.16

Capitalisation of growth: Rs. 7.06 [8.5+ 2(9)] = Rs. 187.00

5 [10 + 1.5(6)] = Rs. 95.00

Dividend growth model : Rs. 2 / [12 – 8.33% × (60)] = Rs. 28.57

5 / 60 × 100 = 8.33%

(b) In Computech International, capital invested is Rs. 1500 crore. The value of the research asset is Rs. 1000 crore.

So, the adjusted value of capital invested is Rs. 2500 crore.

EBIT (1-t) originally calculated was Rs. 1500 crore;

Adjusted EBIT (1-t) equals approximately Rs. (1500 + 250 – 150) = Rs. 1600 crore.

Computech International's adjusted return on capital is Rs. 1600 / Rs. 2500 = 64%.

Q. 28. Discuss the different methods of Brand Valuation. Explain cost-based approach of Brand Valuation. In valuing, a firm should you use the marginal or effective tax rate?

Answer 28.

Brand, being an intangible asset, does not have a unique valuation. Following brand valuation methods are used :

(i) **Cost method :**

The cost approach to valuation involves assessing the value of an asset by calculating its replacement cost i.e. cost of obtaining identical future benefits from an alternative asset. Under cost approach, aggregate of marketing, advertising, research and development expenditure related to a brand is used as the value of the brand. Under this method, a brand may be overvalued, eg, when the costs exceed the benefits.

(ii) **Discounted Cash Flow Method (DCF) :**

The value of a brand under this method is equivalent to present value of future cash flows expected, to be derived from ownership of the brand. The future cash flows are discounted by applying a discount rate, which should reflect the risk of the future cash flows being realized. However, this method suffers from the following limitations :

(a) Quantification of brand – related future cash flows may be difficult,

(b) Difficulty in estimating the life of a brand,

(c) Assessment of appropriate discount rate for brand valuation purposes is very subjective.

Further, one should note that the inputs to the traditional discountd cash flow valuation incorporate the effects of brand name. Adding a brand name premium to this value would be double counting.

(iii) **Earning Multiple Method :**

According to this method, an appropriate multiple is to be applied to the earnings of the brand. So, Brand value = Brand earnings × Applicable multiple.

Brand earnings are estimated on the basis of past trend; the multiple actually implies the number of years the brand would be able to sustain the earnings.

This is a popular method among companies which disclose their brand value in the annual report and is also known as Interbrand model.

(iv) **Premium Pricing Method :**

The formula for this method is —

$$\text{Brand value} = (\text{Premium Amount}) \times \text{Volume} \times \text{Multiple}$$

Where the primium is an estimate of the excess profit earned over the profit earned by similar products sold is generic names; and the multiple is the number of years the product will enjoy the premium price. However, both these may be simple estimates.

Cost-based approach of Brand Valuation :

Under the cost-based approach method for 'Brand Valuation', the actual amount spent to build a brand is analyzed. This approach is a valuation technique that estimate value based on the cost incurred to create the item.

It is difficult to isolate and quantify all historic expenditures incurred in building the brand but it is often possible to identify external marketing costs, including media and promotion spending.

The next step is to adjust these expenditures for inflation.

The approach is often a highly conservative estimate of the brand value because the cost approach does not factor all costs incurred in building the brand. Labour costs and other overheads may not be identifiable with any brand creation or maintenance.

However, it is possible to value a brand on the basis of what it actually costs to create or what it might theoretically cost to re-create.

Difficulty in valuing as per cost incurred is that many a times when creating a brand, a large part of long-term investments cannot be traced from advertisement expenditures. It lies on steps like Quality Control, accumulated know-how, specific expertiese, involvement of personnel, etc.

The most widely reported tax rate in financial statements is the effective tax rate. It is computed as under :

$$\frac{\text{(Taxes due)}}{\text{(Taxable income)}}$$

The second choice on tax rate is the marginal tax rate, which is the tax rate the firm faces on its last rupee of income. The reason for the choice of marginal tax rate lies in the fact that marginal tax rate for most firms remains fairly similar, but wide differences in effective tax rates are noted across firms. In valuing a firm, if the same tax rate has to be applied to earnings of every period, the safer choice is the marginal tax rate.

Q. 29. (a) A firm had paid dividend at Rs. 2 per share last year. The estimated growth of the dividends from the company is estimated to be 5% p.a. Determine the estimated market price of the equity share if the estimated growth rate of dividends —

(i) rises to 8% and (ii) falls to 3%.

Also, find out the present market price of the share given that the required rate of return of the equity investors is 15.5%.

(b) Simplex Ltd. is trying to estimate its debt ratio. It has 1 million equity shares outstanding, trading at Rs. 50 per share. Simplex has Rs. 250 million in straight debt outstanding (with a market interest rate of 9%). It has two other securities outstanding :

a. 10,000 convertible bonds, with a coupon rate of 6% and 10 years to maturity.

b. 2,00,000 warrants outstanding, conferring on its holders the right to buy stock in the Simplex Ltd. At Rs. 65 per share

These warrants are trading at Rs. 12 each. You are required to calculate the debt ratio in market value terms.

Answer 29. (a)

Determination of estimated market price of the equity share- In this case the company has paid a dividend of Rs. 2 during the last year. The growth rate g is 5%. Then, the current year dividend (D_1) with the expected growth rate will be Rs. 2.10.

The present share price in the market is P0 = D1 / Ke-g

= 2.10 / .155 – .05

= Rs. 20

In case growth rate rises to 8%,

Market price = 2.16 / .155 – .08 = Rs. 28.80

In case the growth rate falls to 3%,

Market price = 2.06 / .1 55-.03 = Rs. 16.48

Market price of the shares is expected to vary in response to change in expected growth rate in dividends.

Answer 29. (b)

Value of common stock = 1 million × 50 = Rs. 50 million

Value of warrants = 2,00,000 × Rs. 12 = Rs. 2.4 million

Value of straight debt = Rs. 250 million

Value of straight debt portion of convertible debt = 10,000 ×[60 ×(PVA 9% 10) +1,000/(1 .09) 10]

= Rs. 1.925 million

Value of conversion option = 10,000 ×1 ,000–Rs. 80,75,000 = Rs. 1,925 million Value of debt

= Rs. 250 + Rs. 8.075

= Rs. 258.075 million

Value of equity = (Rs. 50 + Rs. 2.4 + Rs. 1.925) million = Rs. 54.325 million

Debt ratio = 258.075/ (258.075+ 54.325) = 82.61%.

Q. 30. Discuss various aspects of computation of Economic Value Added and its application in business planning and valuation. When the EVA will increase?

Answer 30.

The EVA presents the analysis of the Economic Value Added, an advanced evaluation method that measures the performance and the profitability of the business, taking in account the cost of capital that the business employs.

This method, invented by Stern Stewart & Co. is used today by more and more companies as a framework for their financial management and their incentive compensation system for the managers and the employees.

The EVA is calculated by the following formula :

EVA =NP-TC × WACC

Where :

NP = Net Operating Profit after Tax

TC = Total Capital Employed = Total Equity and Liabilities of the Company

WACC = Weighted Average Cost of Capital

The Weighted Average Cost of Capital (WACC) is calculated as follows :

WACC = (E*CE +SL*CS +LL*CL)/TC

Where :

E = Owners Equity

CE = Average cost of Owners Equity

SL = Short Term Liabilities

CS = Average cost of Short Term Liabilities

LL = Long Term Liabilities

CL = Average cost of Long Term Liabilities

VA will rise if operating efficiency is improved, if value adding investments are made, if uneconomic activities are curtailed, and if the cost of capital is lowered. In more specific terms, EVA rises when :

- The rate of return on existing capital increases because of improvement in operating performance. This means that operating profit increases without infusion of additional capital in the business,
- Additional capital is invested in projects that earn a rate of return greater than the cost of capital,
- Capital is withdrawn from activities which earn inadequate returns,
- The cost of capital is lowered by altering the financing strategy.

The EVA financial management system is based on the premise that EVA provides a single, unified, and accurate measure of value as well as performance. It links well forward looking valuation and capital budgeting analysis with actual performance measurement. For these reasons and more, EVA is considered as the right measure for goal setting and business planning, performance evaluation, bonus determination, investor communication, capital budgeting and valuation.

Economic Value Added will increase if :

(i) Operating profits can be made to grow without employing capital, ie, with increase in efficiency & without using additional resources,

(ii) Additional capital is invested in projects that return more than the cost of obtaining new capital, ie, in projects with profitable growth,

(iii) Capital is curtaild that do not cover the cost of capital, ie, by liquidating unproductive capital,

(iv) Growth is maintained by retained profit so long as its return will exceed the Weighted Average Cost of Capital,

(v) Better financing policy is adopted with reduced cost of capital.