## Paper 20 - Strategic Performance Management & Business Valuation

## Paper 20 - Strategic Performance Management & Business Valuation

**Full Marks: 100** **Time allowed: 3 hours**

**The figures in the margin on the right side indicate full marks.**
**Working notes should form part of the answer.**

**Section - A**

**Answer Question No. 1 which is compulsory and any two from the rest of this section**

**1. Multiple choice questions: [5×2=10]**
**[1 mark for right choice and 1 mark for justification]**

**(i) The components of the Stewart Cycle or PDCA are:**
**(A) Plan-Do-Check-Act**
**(B) Plan-Define-Check-Act**
**(C) Plan-Do-Control-Act**
**(D) Program-Do-Check-Act**

**(ii) The risk which is concerned with the general economic climate (such as growth rate of income, characteristics of the labour force, level of foreign debt outstanding etc.) within the country, is termed as:**
**(A) Country Risk**
**(B) Political Risk**
**(C) Economic Risk**
**(D) Social Risk**

**(iii) Which of the following is not the element/ parameter of NCAER model of corporate distress prediction?**
**(A) Net worth position**
**(B) Outstanding liability position**
**(C) Net working capital position**
**(D) Cash profit position**

**(iv) The Average Cost of a firm is given by the function Average Cost = $x^3 + 12x^2 – 11x$, its marginal cost will be:**
**(A) $4x^3 + 36x^2 – 22x$**
**(B) $x^4 + 12x^3 – 11x^2$**
**(C) $x^3 + 12x^2 – 11x$**
**(D) None of the above**

**(v) The type of benchmarking, which is concerned with the development of core competencies that will help sustained competitive advantage, is called:**
**(A) Global Benchmarking**
**(B) Strategic Benchmarking**
**(C) Internal Benchmarking**
**(D) Competitive Benchmarking**

**Answer:**

(i) (A) The components of Shewhart Cycle or PDCA or Deming Cycle or Deming wheel are Plan, Do, Check and Act.

(ii) (C) Economic risk is concerned with the general economic climate within the country. Some of the factors which reflect the economic climate of a country are: the growth rate of income, characteristics of the labour force, level of foreign debt outstanding etc.

(iii) (B) The NCAER Study on Corporate Distress Prediction prescribed three elements/ parameters for predicting the stages of corporate sickness, such as: (i) Cash profit position (a profitability measure) (ii) Net working capital position (a liquidity measure) and (iii) Net worth position (a solvency measure).

(iv) (A) Average Cost = $x^3 + 12x^2 - 11x$

Total Cost (C) = $x^4 + 12x^3 - 11x^2$

$$\text{Marginal Cost} = \frac{dc}{dx} = 4x^3 + 36x^2 - 22x$$

(v) (B) Strategic Benchmarking helps to develop a vision of the changed organizations. It will develop core competencies that will help sustained competitive advantage.

**2. (a) What do you understand by Financial Performance Analysis? State the areas/ perspectives of it to measure the financial health. Also state the significance of the Financial Performance Analysis. [3+3+4]**

**Answer:**

**Financial performance analysis:**

Financial performance analysis is the process of identifying the financial strengths and weaknesses of the firm by properly establishing the relationship between the items of balance sheet and profit and loss account. It also helps in short-term and long term forecasting and growth can be identified with the help of financial performance analysis. The analysis of financial statement is a process of evaluating the relationship between the component parts of financial statement to obtain a better understanding of the firm's position and performance. This analysis can be undertaken by management of the firm or by parties outside the firm namely, owners, creditors, investors.

In short, the firm itself as well as various interested groups such as managers, shareholders, creditors, tax authorities, and others seeks answers to the following important questions:

1. What is the financial position of the firm at a given point of time?
2. How is the Financial Performance of the firm over a given period of time?

These questions can be answered with the help of financial analysis of a firm. Financial analysis involves the use of financial statements. A financial statement is an organized collection of data according to logical and consistent accounting procedures.

**The areas/ perspectives of Financial Performance Analysis to measure the financial health:**

Financial analysts often assess firm's production and productivity performance, profitability performance, liquidity performance, working capital performance, fixed assets performance, fund flow performance and social performance. Financial health is measured from the following perspectives:

1. Working capital Analysis
2. Financial structure Analysis
3. Activity Analysis
4. Profitability Analysis

**Significance of Financial Performance Analysis**:

Interest of various related groups is affected by the financial performance of a firm. Therefore, these groups analyze the financial performance of the firm. The type of analysis varies according to the specific interest of the party involved.

Trade creditors: interested in the liquidity of the firm (appraisal of firm's liquidity)

Bond holders: interested in the cash-flow ability of the firm (appraisal of firm's capital structure, the major sources and uses of funds, profitability over time, and projection of future profitability)

Investors: interested in present and expected future earnings as well as stability of these earnings (appraisal of firm's profitability and financial condition)

Management: interested in internal control, better financial condition and better performance (appraisal of firm's present financial condition, evaluation of opportunities in relation to this current position, return on investment provided by various assets of the company, etc).

**(b) "The Balanced Score Card (BSC) translates an organization's mission and strategy into a comprehensive set of performance measures that provides the framework for implementing its strategy." — State the steps in developing Balanced Score Card (BSC) in this context. Mention the information required for Performance Measurement under BSC and also states any three benefits of BSC. [3+4+3]**

**Answer:**
The Balanced Score Card (BSC) translates an organization's mission and strategy into a comprehensive set of performance measures that provides the framework for implementing its strategy.

**Steps in developing Balanced Score Card (BSC):**
The steps in the process of developing a BSC are:

- Identify the key outcomes to the success of the organization.
- Identify the process that leads to these outcomes.
- Develop key performance indicators for these processes.
- Develop reliable data capture and measurement systems.
- Develop a mechanism for reporting these to the relevant managers and staff.
- Enact improvement programs to ensure that performance improves.

**Information required for Performance Measurement under Balanced Score Card (BSC):**
The main types of information required by the managers to implement the balanced scorecard approach to performance measurement are:

Customer Perspective - How do customer see us? - Price, quality, delivery, customer support etc.

Internal Perspective- Where we must excel at? - Efficiency of manufacturing process, sales penetration, new production introduction, skilled manpower etc.

Learning and Growth Perspective - Can we continue to improve and create value? - Technology leadership, cost leadership, market leadership, research and development, cost reduction, etc.

Financial Perspective - How do we look to the shareholders? - Sales, cost of sales, return on capital employed, profitability, prosperity etc.

**Benefits of BSC:**
An organization can derive the following benefits by implementation of BSC:

- It avoids management reliance on short-term financial measures.
- It can successfully communicate corporate strategy to the functional heads and organization's subunits and forcing them to develop their own goals to achieve the corporate mission and goals.
- It can assist stakeholders in evaluating the firm, if measures are communicated externally.
- It helps in focusing the whole organization on the few key things needed to create breakthrough performance.

- It helps to integrate various corporate programs like re-engineering, customer service initiatives.
- It breaks down strategic measures towards lower levels, so that unit managers, operators and employees can see what is required at their level to achieve excellent overall performance.
- It helps in clarifying and updating budgets.
- It helps in identifying and aligning strategic initiatives.
- It helps in conduct of periodic performance reviews to learn about and improve strategy.

**3. (a) The total cost (C) and the total revenue (R) of a firm are given C (x) = $x^3 + 60x^2 + 8x$; R(x) = $3x^3 - 3x^2 + 656x$, x being output, determine the output for which the firm gets maximum profit. Also obtain the maximum profit. [7+3]**

**Answer:**

$C = x^3 + 60x^2 + 8x$

$R = 3x^3 – 3x^2 + 656x$

Profit = $3x^3 – 3x^2 + 656x – x^3 – 60x^2 – 8x$

$= 2x^3 – 63x^2 + 648x = (p)$

Derivative w.r.to x

$$\frac{dp}{dx} = 6x^2 - 126x + 648 = 0$$

$x^2 – 21x + 108 = 0$

$x^2 – 9x – 12x + 108 = 0$

$x(x – 9) – 12 (x – 9) = 0$

$(x – 12) (x – 9) = 0$

$x = 12$ or 9

$$\frac{d^2p}{dx^2} = 2x - 21$$

At x = 9

$$\frac{d^2p}{dx^2} = 18 - 21 = -3 < 0$$

Therefore, P is maximum at x = 9

At x = 12

$$\frac{d^2p}{dx^2} = 24 - 21 = 3 > 0$$

P is minimum at x = 12

$P = 2x^3 – 63x^2 + 648x$

At x = 9

Profit $P = 2(9)^3 – 63(9)^2 + 648(9)$

$7292 – 63 \times 81 – 648 \times 9 = 2187.$

**(b) From the information given below relating to Unfortunate Ltd., calculate Altman's Z-score and comment:**

$$\left(\frac{\text{Working capital}}{\text{Total assets}}\right) = 0.45$$

$$\left(\frac{\text{Retained earnings}}{\text{Total assets}}\right) = 0.25$$

$$\left(\frac{\text{Earnings before interest \& taxes}}{\text{Total assets}}\right) = 0.30$$

$$\left(\frac{\text{Market value of equity}}{\text{Book value of total debt}}\right) = 2.50$$

$$\left(\frac{\text{Sales}}{\text{Total assets}}\right) = 3 \text{ times}$$

**[10]**

**Answer:**

As per Altman's Model (1968) of Corporate Distress Prediction:

$Z = 1.2 X_1 + 1.4 X_2 + 3.3 X_3 + 0.6 X_4 + 1.0 X_5$

Here, the five variables are as follows:

$X_1$ = Working Capital to Total Assets = 0.45

$X_2$ = Retained Earnings to Total Assets = 0.25

$X_3$ = EBIT to Total Assets = 0.30

$X_4$ = Market Value of Equity Shares to Book Value of Total Debt= 2.50

$X_5$ = Sales to Total Assets = 3 times

Hence, Z-score = (1.2 x 0.45) + (1.4 x 0.25) + (3.3 x 0.30) + (0.6 x 2.50) + (1 x 3)

= 0.54 + 0.35 + 0.99 + 1.50 + 3 = 6.38

Note: As the calculated value of Z-score is much higher than 2.99, it can be strongly predicted that the company is a non-bankrupt company (i.e., non-failed company).

**4. (a) "To be effective, any Enterprise Risk Management (ERM) implementations should be integrated with strategy-setting". Do you agree? Give your views bringing out the basic elements of ERM and the reasons why ERM is implemented. [1+4+5]**

**Answer:**

"To be effective, any Enterprise Risk Management (ERM) implementations should be integrated with strategy-setting". To my mind, this statement is true.

In today's challenging business environment, opportunities and risks are constantly changing, giving rise to the need for identifying, assessing, managing and monitoring the organization's business opportunities and risks. This, in turn, necessitates establishing the linkage between the opportunities and risk while managing the business. This requirement is addressed by ERM, which redefines the value proposition of risk management by elevating its focus from the 'tactical' to the 'strategic'. ERM is about designing and implementing capabilities for managing the risks that matter. In the light of this, the statement is correct and therefore acceptable.

Basic Elements of ERM:

The following are the basic element of ERM;

(i) A process, ongoing and flowing through an entity.

(ii) Effected by people at every level of an organization.

(iii) Applied in strategy setting.

(iv) Applied across the enterprise, at every level and unit and includes taking an entry-level view of risk.
(v) Designed to identify potential events affecting the entity and manage risk within the risk appetite
(vi) Able to provide reasonable assurance to an entity's management.
(vii) Geared to the achievement of objectives in one or more separate but overlapping categories. It is a means to an end, not an end in itself.

Need for Implementation of ERM:
ERM needs to be implemented for the following reasons:
(i) Reduce unacceptable performance variability.
(ii) Align and integrate varying views of risk management
(iii) Build confidence of investment community and stakeholders,
(iv) Enhance corporate governance.
(v) Successfully respond to a changing business environment
(vi) Align strategy and corporate culture.

Traditional risk management approaches are focused on protecting the tangible assets reported on a company's Balance Sheet and the related contractual rights and obligations. The emphasis of ERM, however, is on enhancing business strategy. The scope and application of ERM is much broader than protecting physical and financial assets. With an ERM approach, the scope of risk management is enterprise-wide and the application of risk management is targeted to enhancing as well as protecting the unique combination of tangible and intangible assets comprising the organization's business model.

**(b) Write short note on:**
**(i) MOLAP**
**(ii) ROLAP** **[5+5]**

**Answer:**
**(i) MOLAP (Multidimensional On-Line Analytical Processing:**
MOLAP is a "multi-dimensional online analytical processing".'MOLAP' is the 'classic' form of OLAP and is sometimes referred to as just OLAP. MOLAP stores this data in an optimized multi-dimensional array storage, rather than in a relational database. Therefore it requires the pre-computation and storage of information in the cube - the operation known as processing. MOLAP tools generally utilize a pre- calculated data set referred to as a data cube. The data cube contains all the possible answers to a given range of questions. MOLAP tools have a very fast response time and the ability to quickly write back data into the data set.

**(ii) ROLAP (Relational On-Line Analytical Processing):**
ROLAP works directly with relational databases. The base data and the dimension tables are stored as relational tables and new tables are created to hold the aggregated information. Depends on a specialized schema design. This methodology relies on manipulating the data stored in the relational database to give the appearance of traditional OLAP's slicing and dicing functionality. In essence, each action of slicing and dicing is equivalent to adding a "WHERE" clause in the SQL statement. ROLAP tools do not use pre-calculated data cubes but instead pose the query to the standard relational database and its tables in order to bring back the data required to answer the question. ROLAP tools feature the ability to ask any question because the methodology does not limit to the contents of a cube. ROLAP also has the ability to drill down to the lowest level of detail in the database.

**Section - B**

**Answer Question No. 5 which is compulsory and any two from the rest of this section**

**5. Multiple choice questions:** **[5×2=10]**

**[1 mark for right choice and 1 mark for working]**

**(i) The following details are given for a company:**

**Sales - ₹ 1,00,000; Costs - ₹75,000; Depreciation - ₹20,000; Tax - 35%; Change in Net Working Capital - ₹1,000; Change in Capital Spending - ₹ 10,000**
**Then the Free Cash Flow to Firm (FCFF) will be:**
**(A) ₹3,250**
**(B) ₹6,750**
**(C) ₹10250**
**(D) ₹12,250**

**(ii) Burnpur Cements Ltd. earned free cash flow to Equity Shareholders during the Financial Year ending 2016 at ₹ 4.5 lakhs and its cost of equity is 13% with a projected earnings growth rate of 10%. The market value of debt is ₹ 50 lakhs. The value of firm as per Constant Growth Valuation Model will be:**
**(A) ₹45,00,000**
**(B) ₹1,45,000**
**(C) ₹1,50,000**
**(D) ₹1,65,000**

**(iii) A Ltd. is considering the acquisition of B Ltd. with stock. Relevant financial information is given below.**

| Particulars | A Ltd. | B Ltd. |
|---|---|---|
| Present earnings | ₹7.5 lakhs | ₹2.5 lakhs |
| Equity (No. of shares) | 4.0 lakhs | 2.0 lakhs |
| EPS | ₹1.875 | ₹1.25 |
| P/E ratio | 10 | 5 |

**The market capitalization of A Ltd. will be:**
**(A) ₹12.5 Lakhs**
**(B) ₹18.75 Lakhs**
**(C) ₹75 Lakhs**
**(D) ₹82 Lakhs**

**(iv) The risk-free rate = 5.5% The market price of risk = 7% The company's beta = 1.2, then Cost of equity will be?**
**(A) 12.5%**
**(B) 13.6%**
**(C) 13.7%**
**(D) 13.9%**

**(v) The Capital Structure of M/s XYZ Ltd., on 31st March, 2016 was as follows:**

| | ₹ |
|---|---|
| Equity Capital (18,000 Shares of `100 each) | 18,00,000 |
| 12% Preference Capital 5,000 Shares of `100 each | 5,00,000 |
| 12% Secured Debentures | 5,00,000 |
| Reserves | 5,00,000 |
| Profit earned before Interest and Taxes during the year | 7,20,000 |
| Tax Rate | 40% |

**Calculate the Interest and Fixed Dividend Coverage:**
**(A) 3.8 Times**
**(B) 6.5 Times**

**(C) 7.6 Times**
**(D) 13 Times**

**Answer:**
**(ii) (D) ₹12,250**

| | |
|---|---|
| Sales - Costs - Depreciation | ₹5,000 |
| Less: Tax | ₹1,750 |
| PAT | ₹3,250 |
| Add: Depreciation | ₹20,000 |
| Less: Change in Net Working Capital | ₹1,000 |
| Less: Change in Capital Spending | ₹10,000 |
| Free Cash Flow to Firm (FCFF) | ₹12,250 |

**(iii) (D) ₹1,65,000**

According to the constant growth valuation model.
V0 = (FCFF)1 /(Ke-g)
Where FCFF1 = FCFF0(1+g)
V0 = 4,50,000 x 1.10/(0.13-0.10)
V0 = 495000/0.03
V0 = ₹ 1,65,00,000.

**(iv) (C) ₹75 Lakhs**

P/E = Market Price/ EPS. Therefore we have, Market price = P/E × EPS
A Ltd.'s Market Price = 10 × 1.875 = ₹18.75
Market Capitalization (same as market value or in short referred as market Cap)
= Number of outstanding shares × market Price
A Ltd.'s Market capitalization = 4.0 lakhs × ₹18.75 =₹75 Lakhs

**(v) (D) 13.9%**

Cost of equity = 5.5% + 7% (1.2) = 13.9%

**(vi) (A) 3.8 Times**

| Calculation of profit after tax (PAT) | ₹ | ₹ |
|---|---|---|
| Profit before interest & tax (PBIT) | | 7,20,000 |
| Less: Debenture interest (₹ 5,00,000 x 12/100) | | 60,000 |
| Profit before tax (PBT) | | 6,60,000 |
| Loss: Tax @ 40% | | 2,64,000 |
| Profit after tax (PAT) | | 3,96,000 |

Calculation of Interest and Fixed Dividend Coverage

$$\frac{\text{PAT} + \text{Debenture Interest}}{\text{Debenture Interest} + \text{Preference Dividend}}$$

$$\frac{3,96,000 + 60,000}{60,000 + 60,000}$$

= 3.8 times

**6. (a) Calculate the value of the intangible assets of X Ltd. considering the excess returns earned by it, from the following information for the y. e. 31.03.2015. [6]**

**(i) Average PBT ₹ 6,300 Lakhs**

**(ii) Average year end tangible assets ₹ 35,000 Lakhs**

**(iii) Cost of equity of the company is 15%**

**(iv) Return on Assets (ROA) industry average is 12%**

**(v) Tax rate is 30%**

**Answer:**

| | | |
|---|---|---|
| Average PBT | | ₹ 6300 lakhs |
| Average year end tangible assets | | ₹35000lakhs |
| ROA of the company | 18% | (6300 ÷ 35,000) x 100 |
| Industry ROA | 12% | |
| Excess return | = | PBT - (12% x 3 5,000) |
| | = 6300-4200 | = 2100 lakhs |

Premium attributable to intangible assets = (1-t) × Excess return

= (0.7) × 2100

= ₹ 1,470 lakhs

Value of intangibles = Premium attributable to Intangible Assets ÷ Company's cost of capital

= 1470 ÷ 0.15 = ₹9800 lakhs.

**(b) ABC Ltd has FCFF of ₹170 Crores and FCFE of ₹130 Crores. ABC Ltd's WACC is 13% and its cost of equity is 15%. FCFF is expected to grow forever at 7% and FCFE is expected to grow forever at 7.5%. ABC Ltd has debt outstanding at ₹1500 Crores. Find the value of ABC Ltd using FCFF approach and FCFE approach. [6]**

**Answer:**

**FCFF Approach: (discount rate = WACC)**

The firm value is the present value of FCFF discounted at the weighted-average cost of capital (WACC):

$= FCFF_t /(k-g) = 170 \times 1.07 / (0.13 - 0.07) =$ ₹3031.67 Crores

The market value of equity is the value of the firm minus the value of debt:

Equity = 3031.67 - 1500 = ₹1531.67 Crores

**FCFE Approach: (discount rate = Cost of Equity)**

Using the FCFE valuation approach, the present value of FCFE, discounted at Cost of equity

$= FCFE_t/(k-g) = 130 \times 1.075/(0.15 - 0.075) =$ ₹1863.33 Crores

**(c) From the following extracts of financial data pertaining to HS Ltd., an IT company, you are required to calculate the value of the brand of the company:**

| | | | |
|---|---|---|---|
| **Year ended on 31st march** | **2016** | **2015** | **2014** |
| **EBIT ₹ lakhs** | **750** | **525** | **280** |
| **Non-branded income ₹ lakhs** | **60** | **45** | **15** |
| **Inflation (%)** | **8** | **15** | **11** |
| **Remuneration of capital** | **6% of Average Capital Employed** | | |
| **Average capital employed ₹ lakhs** | **1,450** | | |
| **Corporate tax rate** | **30%** | | |
| **Capitalization factor** | **15%** | | |

**[8]**

**Answer:**

**HS Ltd**

**Calculation of Brand Value as at 31-3-2014 (₹ in lakhs)**

| Year ended on 31st March | 2016 | 2015 | 2014 |
|---|---|---|---|
| EBIT ₹ lakhs | 750 | 525 | 280 |
| Less Non-branded income ₹ lakhs | 60 | 45 | 15 |
| Adjusted profit ₹ lakhs | 690 | 480 | 265 |
| Inflation (%) | 8 | 15 | 11 |
| Inflation compound factor | 1 | 1.08 | 1.242 |
| PV of profit | 690 | 518.4 | 329.13 |
| Weight | 3 | 2 | 1 |
| Weighted Profits | 2070 | 1036.8 | 329.13 |
| Weighted Average profit | 572.655 = 573 | | |
| Remuneration of capital | 6% of Average Capital Employed | | |
| Average Capital employed ₹ lakhs | 1450 | | |
| Remuneration of capital | 87 | | |
| Brand related profit | 486 | | |
| Corporate tax rate | 30% | | |
| Corporate Tax | 146 | | |
| Brand Earning | 340 | | |
| Capitalization factor | 15% | | |
| Brand Value ₹ lakhs | 2,266.67 | | |

**7. (a) R Ltd. is intending to acquire S Ltd. (by merger) and the following information is available in respect of both the companies—**

| Particulars | R Ltd. | S Ltd. |
|---|---|---|
| **Total current earnings** | **₹ 2,50,000** | **₹ 90,000** |
| **Number of outstanding shares** | **50,000** | **30,000** |
| **Market price per share** | **₹ 21** | **₹ 14** |

**You are required to calculate—**

**(i) Present EPS of both the companies,**

**(ii) If the proposed merger takes place what would be the new EPS for R Ltd. (assuming that merger takes place by exchange of equity shares and the exchange ratio is based on the current market price)**

**(iii) What should be the exchange ratio if S Ltd., wants to ensure the same earnings to members as before the merger took place? [12]**

**Answer:**

**(i)** EPS = Total Earnings/No. of Equity shares

$EPS_{R\ ltd}$ = 2,50,000/50,000=₹ 5

$EPS_{s\ ltd}$ = 90,000/30,000=₹ 3

**(ii)** No. of shares S Ltd shareholders will get in R Ltd based on market prices of shares is as follows:

Exchange Ratio = 14/21 =2/3 i.e. for every 3 shares of S Ltd 2 shares of R Ltd

Total No. of shares of R Ltd issued = 14/21×30,000=20,000 shares
Total number of shares of R Ltd after merger = 50,000+20,000=70,000
Total Earnings of R Ltd after merger = 2,50,000+90,000=3,40,000
[Remember no synergy given]
The new EPS of R Ltd after merger =₹ 3,40,000/70,000=₹ 4.86.

**(iii)** Calculation of Exchange Ratio to ensure S Ltd to earn the same before the merger took place: Both acquiring and acquired firm can maintain their EPS only if the merger takes place based on respective EPS.

Exchange Ratio based on EPS=3/5=0.6
Total Shares of R Ltd receivable by S Ltd. shareholders=0.6×30,000=18,000
Total number of shares of R Ltd after merger = 50,000+18,000=68,000
EPS after merger = Total Earnings/Total number of shares = [₹ 2,50,000+₹ 90,000] /68,000
=₹ 5.
Total Earnings after merger of S Ltd = ₹ 5×18,000=₹ 90,000.

**(b) Kolkata Ltd and Mumbai Ltd have agreed that Kolkata Ltd will take over the business of Mumbai Ltd with effect from 31st December 2013. It is agreed that:**

**(i) 10,00,000 shareholders of Mumbai Ltd will receive Shares of Kolkata Ltd. The Swap ratio is determined on the basis of 26 week average market prices of Shares of both the Companies. Average Prices have been worked out at ₹50 and ₹25 for the shares of Kolkata Ltd and Mumbai Ltd respectively.**

**(ii) In addition to (i) above, the shareholders of Mumbai Ltd will be paid in cash based on the projected synergy that will arise on the absorption of the business of Mumbai Ltd by Kolkata Ltd. 50% of the projected benefits will be paid to the share holders of Mumbai Ltd.**
**The following projections have been agreed upon by the management of both the Companies.**

| Year | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|
| Benefit (in ₹ Lakhs) | 50 | 75 | 90 | 100 | 105 |

**The benefit is estimated to grow at the rate of 2% from 2018 onwards. It has been further agreed that a discount rate of 20% should be used to calculate the cash that the holders of each share of Mumbai Ltd will receive.**

**(vii)Calculate the cash that holder of each share of Mumbai Ltd will receive.**

**(viii) Calculate the total purchase consideration.**

**(Discounting Rate 20%: 1 year-0.833, 2 year – 0.694, 3 year – 0.579, 4 year – 0.482, 5 year -0.402, 6 year - 0.335) [4+4]**

**Answer:**

**(i) Present Value of Synergy Benefits**

| Synergy Benefits Year | Computation | PV= ₹Lakhs |
|---|---|---|
| 2014 | 50 × 0.833 | 41.65 |
| 2015 | 75 × 0.694 | 52.05 |
| 2016 | 90 × 0.579 | 52.11 |
| 2017 | 100 × 0.482 | 48.20 |
| 2018 | 105 × 0.402 | 42.21 |
| 2019 onwards (Terminal value Note) | (105 × 102% ÷18%) × 0.402 | 239.19 |

| | | |
|---|---|---|
| Total | | 475.41 |

50% on the Synergy Benefits = 475.41 × 50% = ₹237.705 Lakhs
Cash for every share held in Mumbai Ltd = 237.705 ÷ 10 = ₹23.77

**(ii)** Total Purchase Consideration for the business

| | |
|---|---|
| (a) Equity share (25/50 × 10,00,000 × ₹50) | ₹250.00 Lakhs |
| (b) Cash = 50% of Synergy Benefits | ₹237.70 Lakhs |
| Total | ₹487.70 Lakhs |

**8. (a) The Shareholders of A Co. have voted in favor of a buyout offer from B Co. Information about each firm is given here below. Moreover, A Co.'s shareholders will receive one share of B Co. Stock for every three shares they hold in A Co.**

| **Particulars (amount in Rupees)** | **B Co.** | **A Co.** |
|---|---|---|
| **Present earnings** | **6.75 lakhs** | **3.00 lakhs** |
| **EPS** | **3.97** | **5.00** |
| **Number of Share** | **1.70 lakhs** | **0.60 lakhs** |
| **P/E ratio** | **20** | **5** |

**(i) What will the EPS of B. Co. be after the merger? What will the PE ratio be if the NPV of the acquisition is zero?**

**(ii) What must B Co. feel is the value of the synergy between these two firms?**

**Explain how your answer can be reconciled with the decision to go ahead with the takeover. [5+5]**

**Answer:**

**(i)** The EPS of the combined company will be the sum of the earnings of both companies divided by the shares in the combined company. Since the stock offer is one share of the acquiring firm for three shares of the target firm, new shares in the acquiring firm will increase by one- third [ Exchange ratio = 1/3].

So, the new EPS will be: EPS = (₹300,000 + 675,000)/[170,000 + (1/3) (60,000)] = ₹5.132.

The market price of B Co. will remain unchanged if it is a zero NPV acquisition.

Using the PE ratio, we find the current market price of B Co. stock, which is

= P/E x EPS

= 20 x (6.75 lakhs/ 1.70 lakhs) = ₹79.41

If the acquisition has a zero NPV, the stock price should remain unchanged. Therefore, the new PE will be: P/E = ₹79.41 / ₹5.132 = 15.48

**(ii)** If the NPV of the acquisition is zero, it would mean that B Co. would pay just the market value of A Co. i.e. Number of shares x market price of A Co. i.e. = 60000 x 25 [MPS = P/E x EPS = 5 x5 = 25]. The market value received by B co. = ₹15,00,000.

The cost of the acquisition is the number of shares offered times the share price, so the cost is: Cost = (1/3) (60,000) (₹79.4118) = ₹15,88,236.

The difference is synergy i.e. ₹88,236.

**(b) Following is the information collected for a company, provided to you:**

**BALANCE SHEET OF XYZ LTD AS AT 31st MARCH ……**

**(₹ in Crores)**

| Particular | | 2016 |
|---|---|---|
| **EQUITY AND LIABILITIES:** | | |
| **SHAREHOLDER'S FUNDS** | | |
| **Share capital** | | **36.37** |
| **Reserves and Surplus** | | **2,225.66** |
| | | **2,262.03** |
| **NON-CURRENT LIABILITIES** | | |
| **Long-term Borrowings** | | **6,322.76** |
| **Deferred tax liabilities (Net)** | | **39.39** |
| **Other long-term liabilities** | | **7.09** |
| **Long-term provisions** | | **355.03** |
| | | **6,724.27** |
| **CURRENT LIABILITIES** | | |
| **Trade payables** | | **1,797.88** |
| **Other current liabilities** | | **12.24** |
| **Short-term provisions** | | **19.00** |
| | | **1,829.11** |
| | **TOTAL** | **10,815.41** |
| **ASSETS** | | |
| **NON-CURRENT ASSETS** | | |
| **FIXED ASSETS:** | | |
| **Tangible assets** | | **4,535.68** |
| **Capital work-in-progress** | | **898.83** |
| **Intangible assets** | | **550.00** |
| | | **5,984.51** |
| **Non-current investments** | | **1,664.30** |
| **Long-term loans and advances** | | **891.97** |
| **Other non-current assets** | | **3.03** |
| | | **2,559.30** |
| **CURRENT ASSETS** | | |
| **Current investments** | | **142.50** |
| **Inventories** | | **1,389.92** |
| **Trade receivables** | | **585.77** |
| **Cash and bank balances** | | **38.41** |
| **Short-term loans and advances** | | **115.00** |
| | **TOTAL** | **2,271.60** |
| | | **10,815.41** |

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

**(₹ in Crores)**

| Particulars | 2016 |
|---|---|
| **Revenue from operations** | **295.00** |
| **Less: Excise Duty** | **26.39** |
| | **268.61** |
| **Other Operating Income** | **0.30** |
| **Other Income** | **0.13** |
| | **269.04** |

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

**If the Weighted Average Cost of Capital (WACC) is 15% then you are required to calculate EVA for the year 2015-16. [10]**

**Answer:**

EVA = NOPAT – Capital Employed x Cost of Capital

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

Calculation of Capital Employed:

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