

Paper 20 - Strategic Performance Management & Business Valuation

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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) Which of the following is not the perspective of Balanced Score Card?

- (A) Customer perspective
- (B) Financial perspective
- (C) Political perspective
- (D) Learning and growth perspective

(ii) The program which encompasses the planning and management of all activities involved in sourcing, procurement, conversion and logistics management activities, is called:

- (A) Supply Chain Management
- (B) Customer Relationship Management
- (C) Total Quality Management
- (D) None of the above.

(iii) If Cost Function is $C = \frac{3}{5}x + \frac{15}{4}$, the cost when output is 5 units will be:

- (A) 6.80
- (B) 6.75
- (C) 6.20
- (D) 6.25

(iv) Which of the following is a cause for corporate distress?

- (A) Fraud by Management
- (B) Working Capital Problems
- (C) Mismanagement
- (D) All of the above.

(v) As per Altman's model, if the value of z-score of a firm is more than 2.99, it will be:

- (A) Non-failed or non-distressed firm
- (B) Failed or distressed firm
- (C) Mixture of failed and non-failed elements
- (D) None of the above

Answer:

(i) **(C):** Balanced Score Card has four perspectives, such as: Customer perspective, Internal business perspective, Learning and growth perspective and financial perspective.

(ii) **(A):** Supply Chain Management encompasses the planning and management of all activities involved in sourcing, procurement, conversion and logistics management activities.

(iii) **(B)** Cost when output is 5 units = $\frac{3}{5} \times 5 + \frac{15}{4} = 6.75$

Answer to MTP_Final_Syllabus 2016_Jun2017_Set 1

- (iv) (D) The causes for corporate distress can be — Technological Causes, Working Capital Problems, Economic Distress, Mismanagement, Fraud by Management etc.
- (v) (A) If the calculated value of Z-score of a firm is greater than 2.99, it is predicted that the firm belongs to non-bankrupt class (i.e., non-failed firm).

2. (a) Discuss the concept of Performance Management and also discuss about the Components of Performance Management? [10]

Answer:

Concept of Performance Management:

Performance management is a continuous process of identifying, measuring and developing performance in organizations by linking each individual's performance and objectives to the organization's overall mission and goals.

Performance management focuses mainly on the achievement of results. It differentiates the aspects, such as being engaged and producing results- which means, being busy should not necessarily be indicating that the results are being produced. There may be times when employees seem to be very busy but in terms of their performance, the results are in contrast to what has been expected. Systematic performance appraisal provides much assistance in assessing the potentials of the employees. Thus, performance management directs and leads the business to the overall achievement with the assessment of employees' effectiveness by the implementation of performance appraisals at regular intervals.

Components of Performance Management:

1. Performance Planning: Performance planning is the first crucial component of any performance management process which forms the basis of performance appraisals. Performance planning is jointly done by the appraiser and the reviewer in the beginning of a performance session. During this period, the employees decide upon the targets and the key performance areas which can be performed over a year within the performance budget, which is finalized after a mutual agreement between the reporting officer and the employee.

2. Performance Appraisal and Reviewing: The appraisals are normally performed twice in a year in an organization in the form of mid reviews and annual reviews which is held at the end of the financial year. In this process, the appraisee first offers the self filled up ratings in the self appraisal form and also describes his/her achievements over a period of time in quantifiable terms. After the self appraisal, the final ratings are provided by the appraiser for the quantifiable and measurable achievements of the employee being appraised. The entire process of review seeks an active participation of both the employee and the appraiser for analyzing the causes of loopholes in the performance and how it can be overcome.

3. Feedback on the Performance followed by personal counseling and performance facilitation: Feedback and counseling is given a lot of importance in the performance management process. This is the stage in which the employee acquires awareness from the appraiser about the areas of improvements and also information on whether the employee is contributing the expected levels of performance or not. The employee receives an open and a very transparent feedback and along with this the training and development needs of the employee is also identified. The appraiser adopts all the possible steps to ensure that the employee meets the expected outcomes for an organization through effective personal counseling and guidance, mentoring and representing the employee in training programs which develop the competencies and improve the overall productivity.

4. Rewarding good performance: This is a very vital component as it will determine the work motivation of an employee. During this stage, an employee is publicly recognized for good performance and is rewarded. This stage is very sensitive for an employee as this may have a

Answer to MTP_Final_Syllabus 2016_Jun2017_Set 1

direct influence on the self esteem and achievement orientation. Any contributions duly recognized by an organization helps an employee in coping up with the failures successfully and satisfies the need for affection.

5. Performance Improvement Plans: In this stage, fresh set of goals are established for an employee and new deadline is provided for accomplishing those objectives. The employee is clearly communicated about the areas in which the employee is expected to improve and a stipulated deadline is also assigned within which the employee must show this improvement. This plan is jointly developed by the appraisee and the appraiser and is mutually approved.

6. Potential Appraisal: Potential appraisal forms a basis for both lateral and vertical movement of employees. By implementing competency mapping and various assessment techniques, potential appraisal is performed. Potential appraisal provides crucial inputs for succession planning and job rotation.

(b) Describe the objectives of Supply Chain Management? There are five basic components of Supply Chain Management. — Write about those components. [10]

Answer:

Objectives of Supply Chain Management:

- i. Supply chain Management (SCM) takes into consideration every facility that has an impact on cost and plays a role in making the product conform to customer requirements: from supplier and manufacturing facilities through warehouses and distribution centers to retailers and stores.
- ii. The supply chain management is to be efficient and cost –effective across the entire system; total system wide costs from transportation and distribution to inventories of raw materials, work – in- process and finished goods are to be minimized.
- iii. Finally, supply chain management revolves around efficient integration of suppliers, manufacturers, warehouses and stores; it encompasses the firm's activities at many levels, from the strategic level through the tactical to the operational level.

Component of Supply Chain Management:

There are five basic components of Supply Chain Management, as follows:

1. Plan: This is the strategic portion of SCM. It needs a strategy for managing all the resources that go toward the meeting customer demand for your product and services.
2. Source: Choose the suppliers that will deliver the goods and services it needs to create its product. Develop a set of pricing, delivery and payment processes with suppliers and create metrics for monitoring and improving the relationships.
3. Make: This is the manufacturing step. Schedule the activities necessary for production, testing, packaging and preparation for delivery.
4. Deliver: This is the part that many insiders refer to as logistics. Coordinate the receipt of orders from customers, develop a network of warehouses, pick carriers to get products to customers and set up an invoicing system to receive payments.
5. Return: The problem part of the supply chain. Create a network for receiving defective and excess products back from customers and supporting customers who have problems with delivered products.

3. (a) Cost = $300x - 10x^2 + \frac{1}{3}x^3$, calculate

(i) Output at which Marginal Cost is minimum

(ii) Output at which Average Cost is minimum

(iii) Output at which Marginal Cost = Average Cost.

[10]

Answer:

(i) Cost = $300x - 10x^2 + \frac{1}{3}x^3$,

$$\text{Marginal Cost} = \frac{dc}{dx} = 300 - 20x + x^2 \text{ (say, } y\text{)}$$

In order that MC is minimum first derivate must be equal to zero and 2nd derivate must be positive.

$$\therefore \frac{dy}{dx} = 2x - 20 \Rightarrow 2x = 20$$

$$x = 10$$

$$\frac{d^2y}{dx^2} = 2, \text{ which is positive. It is minimum at } x = 10.$$

(ii) Average Cost = $300 - 10x + \frac{1}{3}x^2$, (y say)

$$\frac{dy}{dx} = -10 + \frac{2}{3}x = 0$$

$$\Rightarrow x = 30/2 = 15$$

$$\frac{d^2y}{dx^2} = \frac{2}{3} > 0,$$

Therefore, average Cost is minimum of output at $x = 15$

(iii) Output at which Marginal Cost = Average Cost

$$300 - 20x + x^2 = 300 - 10x + \frac{1}{3}x^2$$

$$-20x + 10x + x^2 - \frac{1}{3}x^2 = 0$$

$$-10x + \frac{2}{3}x^2 = 0$$

$$\frac{-30x + 2x^2}{3} = 0$$

$$2x^2 - 30x = 0$$

$$2x(x - 15) = 0$$

$$x - 15 = 0$$

Therefore, $x = 15$

(b) Using Altman's Multiple Discriminant Function, calculate Z-score of S & Co. Ltd., where the five accounting ratios are as follows and comment about its financial position:

Working Capital to Total Assets = 0.250

Retained Earnings to Total Assets = 50%

EBIT to Total Assets = 19%

Book Value of Equity to Book Value of Total Debt = 1.65

Sales to Total Assets = 3 times

[10]

Answer:

As the Book Value of Equity to Book Value of Total Debt is given in the problem in place of Market Value of Equity to Book Value of Total Debt, the value of Z-score is to be computed as per Altman's 1983 Model of Corporate Distress Prediction instead of Altman's 1968 Model of Corporate Distress Prediction.

As per Altman's Model (1983) of Corporate Distress Prediction,

$$Z = 0.717 X_1 + 0.847 X_2 + 3.107 X_3 + 0.420 X_4 + 0.998 X_5$$

Here, the five variables are as follows:

$$X_1 = \text{Working Capital to Total Assets} = 0.250$$

$$X_2 = \text{Retained Earnings to Total Assets} = 0.50$$

$$X_3 = \text{EBIT to Total Assets} = 0.19$$

$$X_4 = \text{Book Value of Equity Shares to Book Value of Total Debt} = 1.65$$

$$X_5 = \text{Sales to Total Assets} = 3 \text{ times}$$

$$\begin{aligned} \text{Hence, Z-score} &= (0.717 \times 0.25) + (0.847 \times 0.50) + (3.107 \times 0.19) + (0.420 \times 1.65) + (0.998 \times 3) \\ &= 0.17925 + 0.4235 + 0.59033 + 0.693 + 2.994 = 4.88 \end{aligned}$$

Note: As the calculated value of Z-score is much higher than 2.9, it can be strongly predicted that the company is a non-bankrupt company (i.e., non-failed company).

- 4. (a) "Risk Management Process refers to the process of measuring or assessing risk and then developing strategies to manage risk." Discuss the steps, which are taken to minimize the risk. [10]**

Answer:

Risk Management Process refers to the process of measuring or assessing risk and then developing strategies to manage risk. In the risk management, the following steps are taken up to minimize the risk;

Step 1: Risk Identification and Assessment:

This step involves event identification and data collection process. The institution has to put in place a system of capturing information either through key risk drivers (KRIs) or through a rating system. Once risks are identified, combine like risks according to the following key areas impacted by the risks — people, mission, physical assets, financial assets, and customer/ stakeholder trust.

Step 2: Risk Quantification and Measurement:

The next step is to Quantify and Measure risks-tins means Rate risks according to probability and impact. Various standard tools are used by financial institutions to measure risk and understand their impact in terms of capital or its importance to the organization through a scoring technique.

Step 3: Risk Analysis, Monitor and Reporting:

The next step is risk analysis, monitoring and reporting. This will help one to get the big picture and decided on the approach to risk management.

Step 4: Capital Allocation:

Risk Analysis, Monitoring & Reporting sends information to the top management of the organization to take strategic decisions. Capital allocation plays key role in management decision making.

Step 5: Risk Management and Mitigation:

Answer to MTP_Final_Syllabus 2016_Jun2017_Set 1

After the above step, the last step is to make strategic decisions to manage the risk in order to mitigate fee risk.

(b) Discuss the potential impact of Computers and MIS on different levels of management.

[10]

Answer:

The potential impact of computers on top-level management may be quite significant. An important factor which may account for this change is the fast development in the area of computer science. It is believed that in future computers would be able to provide simulation models to assist top management in planning their work activities. For example, with the help of a computer it may be possible in future to develop a financial model by using simulation technique, which will facilitate the executives to test the impact of ideas and strategies formulated on future profitability and in determining the needs of funds and physical resources.

Futurists believe that top management will realize the significance of techniques like Simulation, Sensitivity Analysis and Management Science. The application of these techniques to business problems with the help of computers would generate accurate, reliable, timely and comprehensive information to top management. Such information would be quite useful for the purpose of managerial planning and decision-making. Computerized MIS will also influence in the development, evaluation and implementation of a solution to a problem under decision making process.

Potential Impact of Computers and MIS on middle management level will also be significant. It will bring a marked change in the process of their decision-making. At this level, most of the decisions will be programmed and thus will be made by the computer, thereby drastically reducing the requirement of middle level managers. For example, in the case of inventory control system, computers will carry records of all items in respect of their purchase, issue and balance. The re-order level, re-order quantity etc., for each item of material will also be stored in computer after its predetermination. Under such a system, as soon as the consumption level of a particular item of material will touch reorder level, computer will inform for its purchase immediately.

The impact of Computers and MIS today at supervisory management level is maximum. At this level, managers are responsible for routine, day-to-day decisions and activities of the organization which do not require much judgment and discretion. In a way, Supervisory manager's job is directed more towards control functions, which are highly receptive to computerization. Potential impact of computers and MIS on supervisory level will completely revolutionize the working at this level. Most of the controls in future will be operated with the help of computers. Even the need of supervisory managers for controlling the operations will be substantially reduced. Most of the operations/activities now performed manually will be either fully or partially automated.

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) X Ltd. has ₹100 crores worth of common equity on its balance sheet comprising of 50 lakhs shares. The company's Market Value Added (MVA) is ₹24 crores. What is company's stock price?

(A) ₹230

(B) ₹238

(C) ₹248

(D) ₹264

Answer to MTP_Final_Syllabus 2016_Jun2017_Set 1

- (ii) If value of A Ltd. is 50, B Ltd. is 20 and on merger their combined value is 90 and A Ltd. receives premium on merger 12, the synergy for merger is (all amounts are in ₹ Lakhs)
- (A) 8
(B) 20
(C) 32
(D) 38

- (iii) X Ltd's share beta factor is 1.40. The risk free rate of interest on government securities is 9%. The expected rate of return on the company equity shares is 16%. The cost of equity capital based on CAPM is-
- (A) 15.8%
(B) 16%
(C) 18.8%
(D) 9%

- (iv) If a company has a P/E ratio of 20 and a ROE (Return on Equity) of 15% then the Market to Book Value Ratio is-
- (A) 3 times
(B) 3%
(C) Cannot be calculated from the given information
(D) None of the above

- (v) X intends to acquire Y (by merger) based on market price of the shares. The following information is available of the two companies.

	P	R
No. of Equity shares	10,00,000	6,00,000
Earning after tax	50,00,000	18,00,000
Market value per share	₹ 30	₹ 25
New EPS of R after merger?		
(A) ₹ 4.00		
(B) ₹ 4.05		
(C) ₹ 4.60		
(D) ₹ 4.53		

Answer:

- (i) (C) ₹248
 $\text{₹}(100+24) \text{ crores} / 50 \text{ lakhs shares}$
 $= \text{₹}248$
- (ii) (B) 20
 $[90-(50) + 20]$. Premium on merger is irrelevant.
- (iii) (C) 18.8%
Cost of equity capital = $9\% + 1.40 (16-9)\%$
 $= 9\% + 9.8\%$
 $= 18.8\%$
- (iv) (A) 3 times
Market to Book Value Ratio = $20 \times 15\%$
 $= 3 \text{ times}$
- (v) (D) ₹4.53
No. of shares R Ltd. will get in P Ltd. based on market price
 $= 25/30 \times \text{₹} 6,00,000 = 5,00,000 \text{ Shares}$

Answer to MTP_Final_Syllabus 2016_Jun2017_Set 1

Total No. of Equity shares of P. Ltd = 10,00,000 + 5,00,000 = 15,00,000 shares

Total earnings = 50,00,000 + 18,00,000 = ₹ 68,00,000.

The new EPS of P. Ltd. after merger = 68,00,000/15,00,000

= ₹ 4.53

6. (a) Consider two companies - X Company Limited and Y Company Limited. Both have announced their annual results for 2015-2016 on May 5, 2016 and as per the reported results both are having Profit After Tax (PAT) of ₹ 5,700 Lakhs and 120 Lakhs equity shares outstanding (face value of each share is ₹10). Both the companies having same networth of ₹ 28,500 Lakhs.

X Company Limited has growth plans in future and accordingly, it has decided to have a low payout of 40% as dividend. It is believed that its earnings will increase by present rate of growth every year in perpetuity. Assume that the company is having the required rate of return on equity of 15% a year.

Y Company Limited has growth plans in future but not very ambitious and due to that, it is going to have a dividend payout of 60%. It is believed that its earnings will increase by the present rate of growth every year in perpetuity. Assume that the company is having the required rate of return on equity of 13% a year.

Assume that both the companies are identical in all other aspects. Calculate P/E Ratio assuming that Constant Growth Model works. Also explain why a particular company is having higher P/E Ratio. [10]

Answer:

Figures in lakhs

Company	X	Y
Profit After Tax ₹	5,700	₹ 5,700
No. of Shares Outstanding	120	120
Net Worth ₹	28,500.00	₹ 28,500.00
Dividend Payout	40%	60%
Cost of Equity	15%	13%
ROE (5700 ÷ 28,500) x 100 =	20.00%	20.00%
Growth Rate (ROE x (1-Dividend Payout Ratio))	12.00%	8.00%
EPS (PAT ÷ No of Shares) ₹	47.50	₹ 47.50
Price (Using Dividend Discount Model) ₹	709.33	₹ 615.60
P/E Ratio	14.93	12.96

Company X has high P/E Ratio mainly because of the fact it has higher growth rate and due to the fact that the company is plowing back more profit to achieve higher growth rate as dividend payout ratio is low.

Working Note	X	Y
(i) Dividend payout @, 40% and 60%	₹ 2,280	₹ 3,420
(ii) Dividend/share	19	28.50
(iii) Dividend of next period - Do (1+g)	21.28	30.78
(iv) Difference between cost of equity & growth rate	3%	5%
(v) Price of shares (iii) ÷ (iv)	₹ 709.33	₹ 615.60

Answer to MTP_Final_Syllabus 2016_Jun2017_Set 1

(b) Negotiation is going on for transfer of A. Ltd. on the basis of balance Sheet and additional information as given below:

Balance sheet of A Ltd. as on 31st March, 2016

Liabilities	Amount (₹)	Assets	Amount (₹)
Share capital (₹10 fully paid up share)	10,00,000	Goodwill	1,00,000
Reserve & surplus	4,00,000	Land & Building	3,00,000
Sundry Creditors	3,00,000	Plant & machinery	8,00,000
		Investment	1,00,000
		Stock	2,00,000
		Debtors	1,50,000
		Cash & Bank	50,000
Total	17,00,000	Total	17,00,000

Profit before tax for 2015 – 16 amount to ₹6,00,000 including ₹10,000 as interest on investment.

However, an additional amount of ₹50,000 per annum shall be required to be spent for smooth running of the business. Market value of the Land & Building and Plant & Machinery are estimated at ₹9,00,000 and ₹10,00,000 respectively. In order to match the above figures further depreciation to the extent of ₹40,000 should be taken into consideration. Income tax rate may be taken at 30%. Return on capital @ 20% before tax may be considered as normal for this business for the present stage.

For the purpose of determining the rate of return profit for this year after the aforesaid adjustments may be taken as expected average profit. Similarly, average trading capital employed is also to be considered on the basis of position in this year.

It has been agreed that a three years purchase of super profit shall be taken as the value of goodwill for the purpose of the deal. You are requested to calculate the value of goodwill for the company. [10]

Answer:

Valuation of goodwill:	(Amount in ₹)
Capital employed on 31 st March, 2016	
Land and Building	9,00,000
Plant and Machinery	10,00,000
Stock	2,00,000
Debtors	1,50,000
Cash & Bank	50,000
Less: Sundry Creditors	(3,0,000)
	20,00,000

Average maintainable trading profit for the year ended 31st March, 2016

	Amount (₹)	Amount (₹)
Net Profit before tax		6,00,000
Less: Additional depreciation	40,000	
Less: Additional recurring expenses	50,000	
Less: Non operating earning (Interest on Investment)	10,000	1,00,000
Adj. NP		5,00,000
Provision for Taxation @ 30% of ₹5,40,000 (Further depreciation provided not tax deductible)		1,62,000
Average maintainable profit		3,38,000

Answer to MTP_Final_Syllabus 2016_Jun2017_Set 1

Closing capital employed 31.03.2016		20,00,000
Less - 50% of average maintainable profit		1,69,000
Average Capital employed		18,31,000
Average maintainable profit		3,38,000
Less: Normal profit 14% on capital employed (₹18,31,000)		2,56,340
Valuation of Goodwill Super profit		81,660
Goodwill at 3 years purchase of super profit (81,660 x 3 years)		₹ 2,44,980

7. (a) Two firms R and K Corporation operate independently and have the following financial statements:

Particulars	R	K
Revenues	8,00,000	4,00,000
Cost of Goods Sold (COGS)	6,00,000	2,40,000
EBIT	2,00,000	1,60,000
Expected growth rate	6%	8%
Cost of capital	10%	12%

Both firms are in steady state, with capital spending offset by depreciation. No working capital is required, and both firms face a tax rate of 40%. Combining the two firms will create economies of scale in the form of shared distribution and advertising cost, which will reduce the cost of goods sold from 70% of revenues to 65% of revenues. Assume that the firm has no debt capital.

Estimate

- (i) The value of the two firms before the merger
(ii) The value of the combined firm with synergy effect

[5+5]

Answer:

- (i) **Value of the Firms before the Merger**

Calculation of Free Cash Flow to each of the Firm

Free cash flow to R = EBIT (1 – tax rate)

$$= 2,00,000 (1 - 0.4) = ₹1,20,000$$

Free cash flow to K = EBIT (1 – tax rate)

$$= 1,60,000 (1 - 0.4) = ₹96,000$$

Value of the two firms independently

$$\text{Value of R} = [1,20,000 (1.06)] / (0.10 - 0.06) = ₹31,80,000$$

$$\text{Value of K} = [96,000 (1.08)] / (0.12 - 0.08) = ₹25,92,000$$

In the absence of synergy the combined firm value is:

$$\text{Combined Firm Value with No Synergy} = 31,80,000 + 25,92,000 = ₹57,72,000$$

- (ii) **Value of the Firm with Synergy**

On combining the two firm the cost of goods sold is reduced firm 70% to 65% of revenues. The revenue of the combined firm = 8,00,000 + 4,00,000 = ₹12,00,000

Cost of goods sold = 65% of revenues

Answer to MTP_Final_Syllabus 2016_Jun2017_Set 1

$$= 0.65 \times 12,00,000 = ₹7,80,000$$

Weighted average cost of capital for the combined firm
 $= 10\% [31,80,000 / 57,72,000] + 12\% [25,92,000 / 57,72,000]$
 $= 0.0551 + 0.0539 = 0.109$

Or 11% approximately

Weighted average expected growth rate for the combined firm
 $= 6\% [31,80,000 / 57,72,000] + 8\% [25,92,000 / 57,72,000]$
 $= 0.033 + 0.0359 = 0.0689$

Or 7% approximately

Particulars	Firm with no synergy	Firm with synergy
Revenues	12,00,000	12,00,000
Cost of Goods Sold (COGS)	8,40,000	7,80,000
EBIT	3,60,000	4,20,000
Growth rate	7%	7%
Cost of capital	11%	11%
FCF = EBIT (1 - T)	2,16,000	2,52,000

Value of the Firm without Synergy

$$[2,16,000 (1.07)] / 0.11 - 0.07 = ₹57,78,000$$

Value of the firm with Synergy

$$= [2,52,000 (1.07)] / 0.11 - 0.07 = ₹67,41,000.$$

(b) The following information is provided related to the acquiring firm Mark Limited and the target firm Mask Limited:

	Mark Ltd.	Mask Ltd.
Profit after tax (PAT)	₹ 2,000 Lakhs	₹ 400 Lakhs
Number of Shares outstanding	200 Lakhs	100 Lakhs
P/E ratio	10	5

You are required to calculate -

- (i) What is the swap ratio based on current market price? [2]
- (ii) What is the EPS of Mark Ltd after acquisition? [2]
- (iii) What is the expected market price per share of Mark Limited after acquisition, assuming P/E ratio of Mark Limited remains unchanged? [2]
- (iv) Determine the market value of the merged firm. [2]
- (v) Calculate gain/loss for shareholder of the two independent companies after acquisition. [2]

Answer:

EPS before acquisition:

$$\text{Mark Ltd. } ₹ 2000 \text{ lakhs} / 200 \text{ lakhs} = ₹ 10$$

Answer to MTP_Final_Syllabus 2016_Jun2017_Set 1

and Mask Ltd. ₹ 400/100 = ₹4

Market price of share before an acquisition = EPSXPE ratio:

Mark Ltd. ₹ 100 and Mask Ltd. ₹20

- (i) Swap ratio based on current market prices: ₹ 20/₹ 100 = 0.2 that is one share of Mark limited for 5 shares of Mask limited. Number of shares to be issued 100 lakhs × 0.2 = 20 lakhs
- (ii) EPS after acquisition = (2000 lakhs + 400 lakhs) ÷ (200 lakhs + 20 lakhs) = ₹ 10.91
- (iii) Expected market price per share of Mark Ltd. After an acquisition after assuming PE ratio of Mark limited remains unchanged is ₹ 10.91 × 10 = ₹ 109.10
- (iv) Market value of Merged Firm = ₹ 109.10 × 220 lakh shares = ₹ 240.02 crores
- (v) Gain from the merger: Post merger market value of merged firm 240.02 Crores (minus pre merger market value of both firms i.e. ₹ 200 crores and ₹ 20 crores) = (240.02 – 220.00) = ₹ 20.02 crores

Gain to shareholders of both the firms :	Mark Ltd.	Mask Ltd.
Post merger value	218.20	21.80
Less: Pre-merger value	200.00	20.00
Gain to share holders	18.20	1.82

8.(a) Give below is the Balance sheet of Laxmi Ltd. as on 31-03-2016:

Liabilities	₹ (In lakh)	Assets	₹ (In lakh)
Share Capital (Share of ₹ 10)	100	Land & Buildings	40
Reserves & Surplus	40	Plant & Machinery	80
Creditors	30	Investments	10
		Stock	20
		Debtors	15
		Cash at Bank	05
	170		170

You are required to work out the value of the company's shares on the basis of Net Assets method and Profit—earning capacity (capitalization) method and arrive at the fair price of the shares, by considering the following information:

- (i) Profit for the current year ₹ 64 lakhs includes ₹ 4 lakhs extraordinary income and ₹ 1 lakh income from investments of Surplus funds, such Surplus funds are unlikely to recur.
- (ii) In subsequent years, additional advertisement expenses of ₹ 5 lakh are expected to be incurred each year.
- (iii) Market Value of Land and Buildings & Plant and Machinery has been ascertained at ₹ 96 lakhs and ₹ 100 lakhs respectively. This will entail additional depreciation of ₹ 6 lakh each year.
- (iv) Effective income tax rate is 30% including all other charges.
- (v) The Capitalization rate applicable to similar business is 16%. [10]

Answer:

Net Assets Method

Assets	₹ (in Lakh)
Land and Building	96
Plant and Machinery	100

Answer to MTP_Final_Syllabus 2016_Jun2017_Set 1

Investments	10
Stock	20
Debtors	15
Cash at Bank Total Assets	5
	246
Less : Creditors	30
Net Assets	216

Value per Share

Number of Shares = 100 lakhs/10 = 10 lakhs

Value per share = Net Assets/No. of shares = ₹ 216 lakhs/10 lakhs = ₹ 21.60

Profit Earning Capacity Method

	₹ (in lakhs)
Profit before tax	64
Less : extraordinary income	4
Less : Investment income not likely to recur	1
Less : additional expenses for forthcoming years-Advertisement	5
Less : depreciation on revaluation	6
Expected Earnings before taxes	48
Less : income taxes@ 30%	14.4
Future Maintainable Profit	33.6

$$\text{Value of business} = \frac{\text{Future Maintainable profit} = 33.6}{\text{Capitalization factor} = 0.16} = ₹ 210 \text{ lakhs}$$

Subtracting external liabilities we get Net value of business. Value of share would be Net value of Business divided by number of shares = (₹ 210 lakhs- ₹ 30 lakhs)/10 lakhs = ₹ 18.00

Total Price of share	₹
Value as per net assets method	21.6
Value as per profit earning capacity(Capitalization) method	18.0

Fair price = Average of the two = ₹ 19.80 per share

(b) From the following details, compute according to Lev and Schwartz (1971) model the total value of human resources for employee groups - skilled and un-skilled.

	Skilled	Un-skilled
(i) Annual average earning of an employee till age of retirement	₹ 1,00,000	₹ 60,000
(ii) Age of retirement	65 years	62 years
(iii) Discount rate	20%	20%
(iv) No. of employees in the group	25	20
(v) Average age	62 years	60 years

It is assumed that employees will leave the organization only on retirement. [6]

Answer:

(i) Value of skilled employees:

$$\frac{100,000}{(1 + (0.20))^{(65-62)}} + \frac{100,000}{(1 + (0.20))^{(65-63)}} + \frac{100,000}{(1 + (0.20))^{(65-64)}}$$

$$= 57870.37 + 69444.44 + 83333.33$$

Answer to MTP_Final_Syllabus 2016_Jun2017_Set 1

$$\begin{aligned}\text{Total value of this group} &= 57870.37 + 69444.44 + 83333.33 \\ &= 210648.14 \times 25 \\ &= ₹ 52,66,203.50\end{aligned}$$

(ii) Value of unskilled employees

$$\begin{aligned}\frac{60,000}{(1 + (0.20))^{(62-60)}} + \frac{60,000}{(1 + (0.20))^{(62-61)}} &= \frac{60,000}{(1.20)^2} + \frac{60,000}{(1.20)^1} \\ &= 41666.67 + 50000\end{aligned}$$

$$\text{Total of this group} = 91666.67 \times 20 = ₹ 18,33,333$$

$$\text{Total value of human resources of both the groups} = ₹ 70,99,536.50$$

(c) The following information is available of a concern. Calculate Economic Value Added (EVA).

12% Debt ₹2,000 crores

Equity capital ₹ 500 crores

Reserves and Surplus ₹ 7,500 crores

Risk-free rate 9%

Beta factor 1.05

Market rate of return 19%

Equity (market) risk premium 10%

Operating profit after tax ₹ 2,100 crores

Tax rate = 30%

[4]

Answer:

$$K_d (\text{post tax}) = 12\% (1-0.3) = 8.4\% (\text{Int. rate } (1 - \text{tax rate}))$$

$$K_e (\text{CAPM}) = 9\% + (1.05) (19-9)\% = 19.5\% (\text{Risk free rate} + \text{Beta} \times \text{Risk premium})$$

$$\text{WACC} = [(8.4\%) (2000) + (19.5\%) (8000)] \times 100 \div 10,000 = 17.28\%$$

$$\text{EVA} = \text{NOP AT} - \text{Cost of Capital Employed}$$

$$= (2100 \text{ cr.}) - (17.28\%) \times (10,000 \text{ cr.})$$

$$= 2100 \text{ cr.} - 1728 \text{ cr.}$$

$$= ₹ 372 \text{ cr.}$$