

**FINAL EXAMINATION
GROUP - IV
(SYLLABUS 2016)**

**SUGGESTED ANSWERS TO QUESTIONS
JUNE - 2017**

Paper-20 : STRATEGIC PERFORMANCE MANAGEMENT AND BUSINESS VALUATION

Time Allowed : 3 Hours

Full Marks : 100

The figures in the margin on the right side indicate full marks.
This paper has been divided into two Sections, viz., Section A and Section B.

Section – A (50 Marks)

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

1. Choose the Correct Option from amongst the four alternatives given, with justification/ workings. 1 mark will be for the correct choice and 1 mark will be for the justification/ workings. 2x5=10
- (i) Risk Management Strategies are
 - (a) Avoid Risk, Reduce Risk, Retain Risk, Combine Risk
 - (b) Transfer Risk, Share Risk and Hedge Risk
 - (c) Both (a) and (b)
 - (d) None of the above
 - (ii) The necessary condition for equilibrium position of a firm is
 - (a) $MC > MR$
 - (b) $MC > \text{Price}$
 - (c) $MC = MR$
 - (d) $MC = AC$
 - (iii) The Cost function of a firm is given by $C = x^3 - 4x^2 + 7x$. Find at what level of output the average cost is minimum and what would be the minimum average cost.
 - (a) 2,3
 - (b) 4,5
 - (c) 1,4
 - (d) None of the above
 - (iv) Which one of the following is not a measure related to Balanced Score Card?
 - (a) Financial
 - (b) Customer Satisfaction
 - (c) Internal Processes
 - (d) Gap Analysis
 - (v) Performance will be a product of
 - (a) Efficiency and Utilization
 - (b) Utilization and Productivity
 - (c) Efficiency and Productivity
 - (d) Efficiency, Utilization and Productivity

Answer:

1. (i) (c) Both (a) and (b), since Risk Management strategies covers all points under both a and b.
(ii) (c) $MC=MR$, since this is the right option.

Suggested Answer_Syl2016_Jun2017_Paper 20

(iii) (a) 2,3

$$\text{Total Cost} = x^3 - 4x^2 + 7x$$

$$\text{Average Cost} = x^2 - 4x + 7$$

In order that average cost is minimum, $dy/dx = 0$ and the value of d^2y/dx^2 should be positive.

$$dy/dx = 2x - 4 = 0 \text{ or } x - 2 = 0 \text{ or } x = 2. (\text{Ans.})$$

$d^2y/dx^2 = 2$, which is positive, so that the function will have minimum values.

Minimum:

$$\text{Average Cost} = x^2 - 4x + 7 = 4 - (4 \times 2) + 7 = 4 - 8 + 7 = 3 (\text{Ans.})$$

(iv) (d) Gap Analysis, since Balance Scorecard is not concerned with Gap Analysis.

(v) (d) Efficiency, Utilization & Productivity, since this option fully covers all aspects of Performance.

2. (a) What do you mean by 'Customer Relationship Management' (CRM)? List the advantages and benefits of 'Customer Relationship Management'. 4+6=10

(b) What is 'Bench Marking'? Describe briefly the different types of 'Bench Marking'. 2+8=10

Answer:

2. (a) Customer Relationship Management (CRM): It is a business strategy comprised of process, organizational and technical change whereby a company seeks to better manage its enterprise around its customer behaviours. It entails acquiring and deploying knowledge about customers and using this information across the various customers touch points to increase revenue and achieve cost reduction through operational efficiencies.

The adoption of CRM is being fuelled by recognition that long-term relationships with customers are one of the most important assets of an organization. CRM entails all aspects of interaction that a company has with its customer, whether it is sales or service related.

CRM is often thought of as business strategy that enables businesses to:

- Understand the customer
- Retain customers through better customer experience
- Attract new customer
- Win new clients and contracts
- Increase profitability
- Decrease customer management costs.

CRM is an integrated approach to identifying, acquiring and retaining customers. By enabling organizations to manage and coordinate customer interactions across multiple channels, departments, lines of business and geographies, CRM helps organizations maximize the value of every customer interaction and drive superior corporate performance.

Advantages and benefits of CRM: The following are some of the advantages and benefits of CRM:

- satisfied customer does not consider leaving
- Product Development can be defined according to current customer needs
- a rapid increase in quality of products and services.
- the ability to sell more products
- optimization of communication costs
- trouble-free run of business processes

Suggested Answer_Syl2016_Jun2017_Paper 20

- fast and reliable predictions
- increase effectiveness of team work
- increase in staff motivation
- real time access to information
- more time for customers
- better communication between Marketing, Sales and Services.

(b) The practice of setting targets, using external information is known as "Bench marking". Bench marking is the establishment of targets, with which performance is sought to be assessed. It is a continuous process of enlisting the best practices in the world for the process, goals and objectives, leading to world-class levels of achievement. Bench marking implies that there is 'one-best-way-of doing business and orients the firm accordingly.

Types of Bench marking: The different types of Bench marking are:

- (i) Product Benchmarking/Reverse Engineering
- (ii) Competitive Benchmarking
- (iii) Process Benchmarking
- (iv) Internal Benchmarking
- (v) Strategic Benchmarking
- (vi) Global Benchmarking

- (i) Product Benchmarking (Reverse Engineering): It is an age old practice of product oriented reverse engineering. Every organization buys its rival's products and tears down to find out how the features and performances etc., compare with its products. This could be the starting point for improvement.
- (ii) Competitive Benchmarking: This has moved beyond product-oriented comparisons to include comparisons of process with those of competitors. In this type, the process studied may include marketing, finance, HR, R&D etc.
- (iii) Process Benchmarking: It is the activity of measuring discrete performance and functionality against organization through performance in excellent analogous business process e.g. for supply chain management - the best practice would be that of Mumbai Dubbawallas.
- (iv) Internal Benchmarking: It is an application of process benchmarking, within an organization by comparing the performance of similar business units or business process.
- (v) Strategic Benchmarking: It differs from operational benchmarking in its scope. It helps to develop a vision of the changed organizations. It will develop core competencies that will help sustained competitive advantage.
- (vi) Global Benchmarking: It is an extension of Strategic Benchmarking to include benchmarking partners on a global scale. E.g. Ford Co. of USA benchmarked its A/c payable functions with that of Mazda in Japan and found to its astonishment that the entire function, was managed by 5 persons as against 500 in Ford.

3. (a) The Cost Function of a particular firm is $C = \left(\frac{1}{3}\right)x^3 - 5x^2 + 75x + 10$.

- (i) Find at which level the Marginal Cost attains its minimum.
- (ii) What is the marginal cost at this level?

4+4=8.

(b) Following is the extract of a Balance Sheet of a company as on 31st March, 2017:

Liabilities	₹	Assets	₹
Equity Share Capital (₹ 100)	4,00,000	Fixed Assets	10,00,000
Reserves & Surplus	2,25,000	Trade Investment	2,00,000
12% Debentures	3,00,000	Stock	1,25,000
10% Bank Loan	2,00,000	Debtors	75,000
Current Liabilities	3,00,000	Preliminary Expenses	25,000

Suggested Answer_Syl2016_Jun2017_Paper 20

	14,25,000	14,25,000
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Additional Information:

(i) Net Sales for 2016-17 were ₹ 20,00,000

(ii) Price-Earnings Ratio is ₹ 10

(iii) Dividend Pay-out Ratio is 50%

(iv) Dividend per Share in 2016-17 is ₹ 20

(v) Corporate Tax Rate is 50%

Using Altman's Model of Corporate Distress Prediction, calculate the Z-Score of the company and interpret the result. 12

Answer:

3. (a) $C = (1/3)x^3 - 5x^2 + 75x + 10$

Marginal Cost = $dc/dx = (1/3) 3x^2 - 5(2x) + 75 = x^2 - 10x + 75$ (say y)

In order that the MC to be at minimum, its second derivative value must be positive.

$dy/dx = 2x - 10$ or $2x = 10$ or $x = 5$. (Ans.)

$d^2y/dx^2 = 2$, which is positive, so that the function will have minimum values, when $x = 5$.

Therefore, Minimum Marginal Cost = $5^2 - 10 \times 5 + 75 = 25 - 50 + 75 = 50$.

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

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

$X_1 = \text{Working Capital to Total Assets} = (1,00,000)/14,00,000 = 0.07143$

$X_2 = \text{Retained Earnings to Total Assets} = 2,00,000/14,00,000 = 0.1429$

$X_3 = \text{EBIT to Total Assets} = 3,76,000/14,00,000 = 0.2686$

$X_4 = \text{Market Value of Equity and Pref. Shares to Book value of Total debt}$
 $= 16,00,000/8,00,000 = 2.00$

$X_5 = \text{Sales to Total Assets} = 20,00,000 / 14,00,000 = 1.4286$ times.

Therefore, Z-Score = $[1.2 \times (-)0.07143] + (1.4 \times 0.1429) + (3.3 \times 0.2686) + (0.6 \times 2) + (1 \times 1.4286)$
 $= -0.0857 + 0.2006 + 0.8864 + 1.2 + 1.4286 = 3.6299$.

Working Notes:

1. Calculation of Working Capital:

Working Capital = Current Assets - Current Liabilities

Here, Working Capital = (Stock + Debtors) - Current Liabilities

= ₹ [(1,25,000 + 75,000) - 3,00,000]

= ₹ (1,00,000).

2. Calculation of Total Assets:

Total Assets = Fixed Assets + Investments + Current Assets

= ₹ [10,00,000 + 2,00,000 + (1,25,000 + 75,000)]

= ₹ 14,00,000.

3. Calculation of Retained Earnings:

Retained Earnings = Reserves & Surplus - Preliminary Expenses

= ₹ (2,25,000 - 25,000)

= ₹ 2,00,000.

4. Calculation of Earnings before Interest & Tax (EBIT):

Dividend Pay-out Ratio = Dividend per share (DPS) / Earnings per share (EPS)

Here, Dividend Pay-out Ratio = 50% and DPS in 2016-17 = ₹20.

Hence, EPS = DPS / Dividend Pay-out Ratio = 20 / 50% = ₹40.

Here, number of equity shares = ₹4,00,000 / ₹100 = 4,000.

Particulars	₹
Earnings available to equity shareholders = 4,000 × ₹40	1,60,000
Add: Corporate tax added back 50/50 × 1,60,000	1,60,000
EBT	3,20,000
Add: Interest on loan added back:	
On Debentures (12% on ₹3,00,000) = ₹36,000	
On Bank Loan (10% on ₹2,00,000) = ₹20,000	56,000
Earnings before Interest & Tax (EBIT)	3,76,000

Suggested Answer_Syl2016_Jun2017_Paper 20

5. Calculation of Market Value of Equity Shares:

Price-Earnings Ratio = Market value per equity shares (MPS) / Earnings per share (EPS)

Here, Price Earnings Ratio = 10 and EPS in 2016-17 = ₹40.

Hence, Market Value per Equity Share (MPS) = Price-Earnings Ratio × EPS
= 10 × ₹40 = ₹400.

Therefore, the Market Value of Equity Shares = 4,000 shares × ₹400 = ₹ 16,00,000.

6. Calculation of Book Value of Total Debts:

Book Value of Total Debts = Long-term Debts + Current Liabilities.

Here, Book Value of Total Debts

= 12% Debentures + 10% Bank Loan + Current Liabilities.

= ₹ (3,00,000 + 2,00,000 + 3,00,000) = ₹ 8,00,000.

Conclusion: As the calculated value of Z-Score is much more greater than 2.99, it can be strongly predicted that the company is non-bankrupt company (i.e., non-failed company).

4. (a) What is the essence of ERM? What is the actual need for implementing ERM? 5+5=10

(b) What is 'OLAP'? Write a brief note on 'OLAP'. 5+5=10

Answer:

4. (a) The Enterprise Risk Management (ERM) is defined as "a process, affected by an entity's Board of Directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives". It is a structured and embedded approach that supports the alignment of strategy, processes, people, technology, and knowledge with the purpose of evaluating and managing the uncertainties an organization faces as it creates value. In so doing equip the organization with quality management information to make decisions more effectively and with more confidence."

The essence of ERM is built around the pragmatic use of risk management as an effective management tool and to be a significant driver of value. In today's economic climate, the demand for a more comprehensive approach to risk management to ensure that risks and opportunities are systematically identified and the risk responses are developed has never been more critical.

ERM is about designing and implementing capabilities for managing the risks that matter. The greater the gaps in the current state and the desired future state of the organizations risk management capabilities, the greater the need for ERM infrastructure to facilitate the advancement of risk management capabilities over time. ERM is about establishing the oversight, control and discipline to drive continuous improvement of an entity's risk management capabilities in a changing operating environment.

ERM deals with risk and opportunities affecting value creation or preservation. ERM is a comprehensive and integrated approach to addressing corporate risk. ERM enables management to effectively deal with uncertainty and associated risk and opportunity, enhancing the capacity to build value.

Need for Implementation of ERM:

ERM needs to be implemented for the following reasons:

Suggested Answer_Syl2016_Jun2017_Paper 20

- (a) Reduce unacceptable performance variability.
- (b) Align and integrate varying views of risk management.
- (c) Build confidence of investment community and stakeholders.
- (d) Enhance corporate governance.
- (e) Successfully respond to a changing business environment.
- (f) 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) On-line Analytical Processing (OLAP) is a category of software technology that enables analysts, managers and executives to gain insight into data through fast, consistent, interactive access to a wide variety of possible views of information that has been transformed from raw data to reflect the real dimensionality of the enterprise as understood by the user.

OLAP functionality is characterized by dynamic multi-dimensional analysis of consolidated enterprise data supporting end user analytical and navigational activities including:

- Calculations and modeling applied across dimensions, through hierarchies and/or across members
- Trend analysis over sequential time periods
- Slicing sub-sets for on-screen viewing
- Drill-down to deeper levels of consolidation
- Reach-through to underlying detail data
- Rotation to new dimensional comparisons in the viewing area.

OLAP is implemented in a multi-user client/server mode and offers consistently rapid response to queries, regardless of database size and complexity. OLAP helps the user synthesize enterprise information through comparative, personalized viewing, as well as through analysis of historical and projected data in various "what-if" data model scenarios. This is achieved through the use of an OLAP server.

An OLAP server is a high-capacity, multi-user data manipulation engine, specifically designed to support and operate on multi-dimensional data structures. The OLAP server may either physically stage the processed multidimensional information to deliver consistent and rapid response times to end users, or it may populate its data structures in real-time from relational or other databases, or offer a choice of both. Given the current state of technology and the end user requirement for consistent and rapid response times, staging the multi-dimensional data in the OLAP Server is often the preferred method.

The core of any OLAP system is an OLAP cube (also called as hypercube). It consists of numeric facts called measures which are categorized by dimensions.

Section - B (50 marks)

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

Suggested Answer_Syl2016_Jun2017_Paper 20

5. Choose the Correct Option from amongst the four alternatives given, with justification/ workings. 1 mark will be for the correct choice and 1 mark will be for the justification/ workings. 2x5=10
- (i) It is assumed that M. Ltd., would realize ₹ 40 million from the liquidation of its assets. It pays ₹ 20 millions to its creditors and Preference Shareholders in full and final settlement of their claims. If the number of Equity Shares of M. Ltd. is 2 million, the Liquidation per Share would be:
 (a) ₹ 1 per Share
 (b) ₹ 10 per Share
 (c) ₹ 12 per Share
 (d) ₹ 15 per Share
- (ii) Assume that 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.
 The Free Cash Flow to Firm (FCFF) for the given data would be:
 (a) ₹ 10,000
 (b) ₹ 12,250
 (c) ₹ 13,500
 (d) ₹ 15,000
- (iii) Shyam Ltd. has announced issue of warrants on 1: 1 basis for its equity share holders. The Exchange ratio is 1.00. The current market price of the stock is ₹ 10 and warrants are convertible at an exercise price of ₹ 11.71 per share. Warrants are detachable and are trading at ₹ 3. What is the minimum price of this warrant?
 (a) ₹ 3.00
 (b) Zero
 (c) ₹ 1.71
 (d) ₹ 2.00
- (iv) Given: The growth rate in the dividends is expected to be 8%. The Beta of the stock is 1.60 and the return on the market index is 13%.
 The required rate of return would be:
 (a) 14%
 (b) 16%
 (c) 18%
 (d) 20%
- (v) Given: The risk-free rate is 5.5%; the market price of risk=7% and the company's Beta=1.2.
 The Cost of Equity would be
 (a) 11%
 (b) 13.9%
 (c) 15.2%
 (d) 16.3%

Answer:

5. (i) (b) ₹ 10 per share.
 Liquidation/share= (₹ 40 million - ₹20 million)/2 million =₹ 10 per share.

- (ii) (b) ₹ 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

Suggested Answer_Syl2016_Jun2017_Paper 20

- (iii) (b) Zero
 Minimum Price=(Market Price of Common Stock-Exercise Price)×Exchange Ratio
 = (₹ 10.00 - 11.71) × 1.0 = ₹ 1.71.
 Thus, the minimum price of this warrant is considered to be zero, because things simply do not sell for negative prices.
- (iv) (b) 16%.
 Required rate of Return = $R_f + \beta(R_m - R_f) = 8\% + 1.60(13\% - 8\%) = 8\% + 1.6 \times 5\% = 8\% + 8\% = 16\%$.
- (V) (b) 13.9%
 Cost of Equity = $5.5\% + 7\% (1.2) = 13.9\%$

6. (a) P Ltd. is considering buying the business of Q Ltd., the final accounts of which for the last 3 years ended 31st December is.

(Figures in ₹)			
Particulars	2014	2015	2016
Sales	2,00,000	1,90,000	2,24,000
Material Consumed	1,00,000	95,000	1,12,000
Business Expenses	80,000	80,000	82,000
Depreciation	12,000	13,000	14,000
Net Profit	8,000	2,000	16,000

Balance Sheet as at 31st December

(Figures in ₹)				
Particulars	2013	2014	2015	2016
Fixed Asset (at cost)	1,00,000	1,20,000	1,40,000	1,80,000
Less: Depreciation	70,000	82,000	95,000	1,09,000
	30,000	38,000	45,000	71,000
Stock-in-trade	16,000	17,000	18,500	21,000
Sundry Debtors	21,000	24,000	26,000	28,000
Cash in hand and Bank	32,000	11,000	28,000	13,200
Prepaid Expenses	1,000	500	2,000	1,000
Total Assets	1,00,000	90,500	1,19,500	1,34,200
Equity Capital	50,000	50,000	70,000	70,000
Share Premium	-	-	5,000	5,000
General Reserve	16,000	24,000	26,000	42,000
Debentures	20,000	-	-	-
Sundry Creditors	11,000	13,000	14,000	14,000
Accrued Expenses	3,000	3,500	4,500	3,200
Total Liabilities	1,00,000	90,500	1,19,500	1,34,200

P Ltd. wishes the offer to be based upon trading cash flows rather than book profits. Trading Cash Flow means Cash received from Debtors less Cash Paid to Creditors and for Business Expenses excluding Depreciation, together with an allowance for average annual expenditure on Fixed Assets of ₹ 15,000 per year.

The actual expenditure on Fixed Assets is to be ignored, as is any cash receipt or payment out on the issue or redemption of Shares or Debentures. P Ltd. wishes the Trading Cash Flow to be calculated for each of the years 2014, 2015 and 2016 and for these to be combined using weights of 25% for 2014, 35% for 2015 and 40% for 2016 to give an Average Annual Trading Cash Flow. P Ltd. considers that the Average Annual Cash Flow should show a return of 10% on its investment.

You are required to calculate:

- (i) Trading Cash Flow for each of the years 2014, 2015 and 2016
- (ii) Weighted Average Annual Trading Cash Flow and
- (iii) Value of the business

12

Suggested Answer_Syl2016_Jun2017_Paper 20

(b) Following is the Profit & Loss Account and Balance Sheet for M/s. X Ltd.

(₹ in Lakh)

	2015	2016
Turnover	652	760
Pre-tax accounting profit	134	168
Taxation	46	58
Profit after tax	88	110
Dividends	30	36
Retained earnings	58	74

Balance Sheet extracts are as follows:

(₹ in Lakh)

	2015	2016
Fixed Assets	240	312
Net Current Assets	260	320
Total	500	632
Equity Shareholders Funds	390	472
Medium and Long-term Bank Loan	110	160

The Company's performance in regard to turnover had increased by 17% along with increase in pre-tax profit by 25% but shareholders are not satisfied by the Company's preference in the last 2 years. You are required to calculate the economic value added, as suggested by M/s. Trump & Co., USA, so that reasons of non-satisfaction can be evaluated.

You are also given:

Particulars	2015	2016
Pre-tax Cost of Debt	9%	10%
Cost of Equity	15%	17%
Tax rate	35%	35%
Interest Expenses	₹ 8	₹ 12

8

Answer:

6. (a)

Particulars	2014	2015	2016	
Net Profit as per Profit & Loss A/c	8,000	2,000	16,000	
Add: Depreciation	12,000	13,000	14,000	
Operating Cash Flows before Working Capital Changes	20,000	15,000	30,000	
Adjustment for Working Capital Changes				
(a) Change in Stock	(1,000)	(1,500)	(2,500)	
(b) Change in Debtors	(3,000)	(2,000)	(2,000)	
(c) Prepaid Expenses	500	(1,500)	1,000	
(d) Sundry Creditors	2,000	1,000	-	
(e) Accrued Expenses	500	1,000	(1,300)	
Cash Generated from operations	19,000	12,000	25,200	
Less: Allowance for Expenditure on Fixed Assets	(15,000)	(15,000)	(15,000)	
Trading Cash Flow	4,000	(3,000)	10,200	
Weights	25%	35%	40%	
Weighted Trading Cash Flow	1,000	(1,050)	4,080	
Weighted Average Cash Flow				4,030
Capitalization Rate				10%
Value of Business				40,300

Suggested Answer_Syl2016_Jun2017_Paper 20

(b) Calculation of Return on Operating Capital (ROOC): (₹ in lakhs)

NOPAT:	2015	2016
PBT	134	168
Add: Interest Expenses	8	12
	142	180
Less: Taxes @35%	49.7	63
NOPAT (A)	92.3	117
Operating Capital:		
Equity Shareholder's Funds	390	472
Long term Debt	110	160
Operating Capital (B)	500	632
ROOC=(A/B)×100	18.46%	18.51%

Calculation of Weighted Average Cost of Capital (WACC):

Particulars	2015	2016
K_d	$9\%(1-0.35) \times 110/500$	$10\%(1-0.35) \times 160/632$
	1.287%	1.645%
K_e	$15\% \times (390/500)$	$17\% \times (472/632)$
	11.7%	12.7%
WACC	$1.287\% + 11.7\% = 12.99\%$	$1.645\% + 12.7\% = 14.34\%$
EVA:		
ROOC	18.46%	18.51%
Less: WACC	12.99%	14.34%
EVA Spread	5.47%	4.17%
EVA= Spread x Operating Capital	$5.47\% \times 500$ lakhs=27.35Lakhs	$4.17\% \times 632$ lakhs=26.3544 Lakhs.

Since EVA has declined in year 2016 by 0.9956 Lakhs, this can be attributed as reason for non-satisfaction.

7. (a) The following information is provided related to the acquiring firm, Sun Ltd. and the target firm Moon Ltd.

Particulars	Sun Ltd.	Moon Ltd.
Profits after Tax	₹ 2,000 Lakh	₹ 4,000 Lakh
Number of Shares outstanding	200 Lakh	1,000 Lakh
P/E Ratio (times)	10	5

Required:

- (i) What is the swap ratio based on the current market prices?
 (ii) What is the EPS of Sun Ltd., after the acquisition? 10

(b) X Ltd. is considering a takeover of Y Ltd. The particulars of the two companies are given below:

Particulars	X Ltd.	Y Ltd.
Earnings after Tax (EAT) in ₹	20,00,000	10,00,000
Equity Shares (Nos.)	10,00,000	10,00,000
EPS	2	1
P/E Ratio (times)	10	5

Required:

- (i) What is the market value of each company before merger?
 (ii) Assuming that the management of X Ltd. estimates that the shareholders of Y Ltd. will accept an offer of one share of X Ltd. for four shares of Y Ltd. If there are no synergic effects, what is the market value of the Post-merger X Ltd.? Are the shareholders of X Ltd. better off than they were before the merger?
 (iii) Due to synergic effects, the management of X Ltd. estimates that the earnings will increase by 20%. What is the new Post-merger EPS and the Price per Share? Will

Suggested Answer_Syl2016_Jun2017_Paper 20

the shareholders be better-off or worse-off?

10

Answer:

7. (a) **EPS before acquisition**

Sun Ltd., = ₹ 2,000 Lakhs/200 lakh = ₹ 10.

Moon Ltd., = ₹ 4,000 Lakhs/1,000 lakh = ₹ 4.

Market Price of shares before acquisition

Sun Ltd., = ₹10 × 10 = ₹ 100

Moon Ltd., = ₹4 × 5 = ₹ 20

(i) Swap ratio based on current market price:

= ₹20/₹ 100 = 0.2 i.e., 1 share of Sun Ltd., for 5 shares of Moon Ltd.,

No. of shares to be issued = 1,000 Lakhs × 0.20 Lakh = 200 Lakhs.

(ii) EPS after acquisitions:

= (₹ 2,000 Lakhs + ₹ 4,000 Lakhs)/(₹ 200 Lakhs + ₹ 200 Lakhs)

= ₹ 6,000 Lakhs / ₹ 400 Lakhs = ₹15.

(b) (i) **Market Value of Companies before merger:**

	X Ltd.,	Y Ltd.,
EPS (₹)	2	1
P/E Ratio	10	5
Market Price/Share (₹)	20	5
Equity Shares	10,00,000	10,00,000
Total Market Value	2,00,00,000	50,00,000

(ii) **Post-merger effect on X Ltd.**

Post-merger earnings ₹(20,00,000+10,00,000)	₹ 30,00,000
Equity Shares (10,00,000+10,00,000×1/4) [As the exchange ratio is 1:4]	12,50,000
EPS: 30,00,000/12,50,000	₹ 2.4
P/E Ratio	10.00
Market Value : 10 × ₹ 2.4 (P/Ex EPS)	₹24
Total Value (12,50,000 × ₹ 24)	₹ 3,00,00,000

Gains from Merger:

Post merger market value of the firm	₹ 3,00,00,000
Less: Pre-merger market value	
X Ltd., 2,00,00,000	
Y Ltd., 50,00,000	₹ 2,50,00,000
	₹ 50,00,000

Apportionment of gains between Shareholders:

	X Ltd.	Y Ltd.
Post-merger market value		
10,00,000×₹ 24	₹ 2,40,00,000	
2,50,000×₹ 24		₹ 60,00,000
Less: Pre-merger market value	₹ 2,00,00,000	₹ 50,00,000
	₹ 40,00,000	₹ 10,00,000

Thus the shareholders of both the companies have gained from the merger.

(iii) **Post-merger Earnings:**

Increase in earnings by 20%

New earnings: ₹30,00,000 × 120% = ₹ 36,00,000

No. of Equity Shares = 12,50,000

EPS = ₹ 36,00,000/12,50,000 = ₹ 2.88

P/E Ratio = 10

Market Price/Share = ₹2.88 × 10 = 28.80

Suggested Answer_Syl2016_Jun2017_Paper 20

Therefore Shareholders will be better-off.

8. (a) A company has a capital base of ₹ 3 crores and has earned profits of ₹ 33 lakhs. Return on Investment of the particular industry to which the company belongs is 12.5%. If the services of a particular executive are acquired by the company, it is expected that the profits will increase by ₹ 7.5 lakhs over and above the target profit. Determine the amount of maximum bid price for that particular executive and the maximum salary that could be offered to him.

Particulars	₹
Capital Base	3,00,00,000
Actual Profit	33,00,000
Target Profit (₹ 3 crores x 12.5%)	37,50,000

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- (b) R Ltd. is intending to acquire S Ltd. (by merger) and the following information are available in respect of both the companies:

Particulars	R Ltd.	S Ltd.
Total Current Earnings (₹)	2,50,000	90,000
No. of Outstanding Shares	50,000	30,000
Market Price per Share (₹)	21	14

- (i) What is the present EPS of both the companies?
 (ii) If the proposed merger takes place, what would be the new earnings per share for R Ltd. (assuming the merger takes place by exchange of Equity Shares and the Exchange Ratio is based on the Current Market Price)? Assume no synergy impact.

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Answer:

8. (a) (i) Maximum Salary Payable:

Particulars	₹ in Lakhs.
Capital Base	300.00
Target Profits (Capital Base × 12.5%)	37.50
Add: Extra Profits due to induction of the Executive	7.50
Total Profits of the Company (anticipated after induction of the Executive)	45.00
Less: Current Profits	33.00
Incremental Profit	12.00

Maximum Salary = Incremental Profit due to induction = ₹12.00 Lakhs per annum

- (ii) Maximum Bid Price: Value of Salary payable in perpetuity
 = Maximum Salary Payable/Desired Rate of Return on investment
 = ₹ 12 Lakhs/12.5% = ₹96 Lakhs.

- (b) (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 = $(14/21) \times 30,000 = 20,000$ shares.
 Total number of shares of R Ltd., after merger = $50,000 + 20,000 = 70,000$.
 Total earning of R Ltd., after merger = ₹ 2,50,000 + ₹ 90,000 = ₹ 3,40,000 (No synergy given)
 The new EPS of R Ltd., after merger = ₹3,40,000/70,000 = ₹4.86.