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 condition is not correct in order to obtain the equilibrium position of an industry under perfect competition?
(a) The industry gets an equilibrium position where MC=MR
(b) All firms in the industry get both normal & abnormal profits
(c) Number of the firms is constant
(d) At equilibrium point the MC, AC, MR and AR are equal.

(ii) According to model developed by Altman in 1968, which of the following is not the selected ratio for corporate distress prediction?
(a) Working Capital to Total Assets
(b) Retained Earnings to Total Assets
(c) Sales to Total Assets
(d) Book value of Equity/ Total Liabilities.

(iii) The Average Cost of a firm is given by the function Average Cost = $x^3 + 12x^2 – 11x$, the marginal cost will be:
(a) $4x^3 + 36x^2 – 22x$
(b) $x^4 + 12x^3 – 11x^2$
(c) $x^2 + 24x – 11$
(d) None of the above.

(iv) 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

(v) Which one of the following is NOT true about On-Line Analytical Processing (OLAP)?
(a) OLAP functionality includes trend analysis over sequential time periods.
(b) It provides slicing subsets for on-screen viewing.
(c) It is a category of hardware technology.
(d) It helps the end user to drill-down to deeper levels of consolidation data.

Answer:

(i) (b) In order to obtain the equilibrium position of an industry under perfect competition, there will be no abnormal profits. All firms in the industry get only normal profits.

(ii) (d) According to model developed by Altman in 1968, the five selected ratio for corporate distress prediction are — Working Capital to Total Assets, Retained Earnings to Total Assets, EBIT to Total Assets, Market Value of Equity & Preference to Book Value of Total Debt and Sales to Total Assets. Book value of equity to total liabilities is not a criteria.

(iii) (a) Average Cost = $x^3 + 12x^2 - 11x$
Total Cost (C) = $x^4 + 12x^3 - 11x^2$
Marginal Cost = $dc/dx = 4x^3 + 36x^2 - 22x$.

(iv) (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.

(v) (C) On-Line Analytical Processing (OLAP) is a category of software technology and not hardware technology.

2.(a) What is Customer Relationship Management (CRM)? State the objectives of Customer Relationship Management Application and also state the advantages of it. [2+4+4=10]

(b) "Balanced Score Card (BSC) can be used to improve strategic performance in several ways." — State the areas where BSC can be used to improve performance of an organisation. Write down the steps in developing Balanced Score Card. Discuss the information to be required for performance measurement under Balance Score Card. [3+3+4=10]

Answer:

(a) Customer Relationship Management (CRM) entails initiatives that surround the customer side of the business. CRM is a business strategy comprised of process, organizational and technical change whereby a company seeks to better manage its enterprise around its customer behaviors. 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.

Objectives of using CRM Applications, defined in the following line:

I. To support the customer services
II. To increase the effectiveness of direct sales force.
III. To support of business to business activities.
IV. To support of business to consumer activities.
V. To manage the call center.
VI. To operate the In- bound call centre.
VII. To operate the Out - bound call centre.
VIII. To operate the full automation

The advantages of CRM are as follows:

- 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
- proper selection of marketing tools (communication)
- trouble-free run of business processes
- greater number of individual contacts with customers etc.

(b) Balanced Score Card (BSC) emphasizes that financial and non-financial measures must be part of the information system for employees at all levels of the organization. BSC can be used to improve strategic performance in several ways:

- The process of developing activity measures will make individuals and divisions more aware of how their work fits in with the strategy of the business. Individuals and divisions should receive regular reports of their performance against BSC measures relevant to their area of work. This will help them moderate their own performance.
- Senior management should receive regular information on the organization's overall accomplishments against BSC measures to ensure that strategy is being followed.
- Outside stakeholders may also have access to BSC measures help them form a more full impression of the organization's value.

The steps in the process of developing of 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.

The main types of information required by the managers to implement the balanced score card approach to performance measurement are:

(A) Customer perspective - How do customers see us? – price, quality, delivery, customer support etc.

(B) Internal perspective - where we must excel at? – efficiency of manufacturing process, sales penetration, new production introduction, skilled manpower etc.

(C) Learning and growth perspective - can we continue to improve and create value? - Technology leadership, cost leadership, market leadership, research and development, cost reduction etc.

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

3.(a)

$\text{Cost} = 300x - 10x^2 + \frac{1}{3}x^3$, 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. **[3+3+4=10]**

(b) Balance Sheet (extract) of Q Ltd. as on 31 March 2019:

Liabilities	Rs. in Crores	Assets	Rs. in Crores
Equity Shares	**20.80**	**Fixed Assets**	**105.60**
Long-term Liabilities	**104.00**	**Current Assets**	**57.60**
Current Liabilities	**78.40**	**Profit & Loss A/c**	**40.00**
	203.20		**203.20**

Additional Information:

(i) Depreciation written off Rs. 8 crores.

(ii) Preliminary Expenses written off Rs. 1.60 crores.

(iii) Net Loss Rs. 25.60 crores.

Ascertain the stage of sickness and comment on this. **[10]**

Answer:

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

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

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

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

$x = 10$

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

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

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

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

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

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

$2x2 – 30x = 0$

$2x (x – 15) = 0$

$X – 15 = 0$

Therefore, $x = 15$.

(b) The NCAER Study on Corporate Distress Prediction prescribed the following three parameters for predicting the stage of Corporate Sickness:
(i) Cash profit position (a profitability measure)
(ii) Net working capital position (a liquidity measure)
(iii) Net worth position (a solvency measure)

In the given case, we need to judge the above-mentioned parameters to ascertain the stage of sickness of the company.

(i) Cash profit = Net profit + (Non-cash expenses/losses debited to Profit & Loss A/c) – (Non-cash incomes/Gains credited to Profit & Loss A/c)
Here, Cash Profit = Net Profit + Depreciation Written Off + Preliminary Expenses Written Off
= Rs. [(25.60) + 8+ 1.60] crores = (Rs. 16 crores)
(ii) Net Working Capital = Current Assets – Current Liabilities
= Rs. [57.60 - 78.40] crores = (Rs. 20.80 crores)
(iii) Net Worth = Share Capital + Reserves & Surplus - Miscellaneous Expenditure - Profit & Loss A/c (Dr.)
Here, Net Worth = Equity Share Capital - Profit & Loss A/c (Dr.)
= Rs. [20.80 - 40.00] crores = (Rs. 19.20 crores)

Prediction about Corporate Sickness: As per NCAER Research Study, out of mentioned three parameters, if any one parameter becomes negative in case of a firm, it can be predicted that the firm has a tendency towards sickness. In the given company, all the three parameters [as calculated under (i), (ii) and (iii)] show negative value. Therefore, it can strongly be predicted that the company is a sick company and its stage of sickness is 'fully sick'. Immediate necessary drastic revival measures are essentially required for the survival of the company.

4.(a) "Enterprise Risk Management (ERM) is a comprehensive and integrated approach to addressing corporate risk." — In this context describe Enterprise Risk Management with its characteristics thereof. Also, state the needs for Implementation of ERM. [7+3=10]

(b) Discuss the potential impact of Computers and MIS on different levels of management. [10]

Answer:

(a) The Enterprise Risk Management (ERM) is defined as "a process, effected 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 mange risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives".

From the above definition, ERM is:
1. A process, ongoing and following through an entity.

2. Effected by people at every level of an organization.
3. Applied in strategy-setting.
4. Applied across the enterprise, at every level and unit, and includes taking an entity-level portfolio view of risk.
5. Designed to identify potential events affecting the entity and manage risk within its risk appetite.
6. Able to provide reasonable assurance to an entity's management and board.
7. Geared to the achievement of objectives in one or more separate but overlapping categories.

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 overtime. 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. In ERM, a risk is defined as a possible event or circumstance that can have negative influences on the enterprise in question. Its impact can be on the very existence, the resources (human and capital), the products and services, or the customers of the enterprise, as well as external impacts on society, markets or the environment.

Need for Implementation of ERM:
ERM needs to be implemented for the following reasons:

1. Reduce unacceptable performance variability.
2. Align and integrate varying views of risk management.
3. Build confidence of investment community and stakeholders.
4. Enhance corporate governance.
5. Successfully respond to a changing business environment.
6. Align strategy and corporate culture.

(b) 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 justification]

(i) If equity share capital of Rs. 10 each is Rs. 450 crores, total earnings is Rs. 90 crores and market price of each share is Rs. 60, then price earnings ratio will be:

(a) 7.5
(b) 30
(c) 0.033
(d) None of the above.

(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 Rs. Lakhs):

(a) 20
(b) 8
(c) 32
(d) 38

(iii) A theory that explains why the total value from the combination resulted from a merger is greater than the sum of the value of the component companies operating independently is known as _____ theory.

(a) hubris
(b) agency
(c) operating
(d) synergy

(iv) If cost of debt is 8%, cost of equity is 13.9%, tax rate is 40% and capital structure is debt = 40% and equity = 60%, then weighted average cost of capital will be:

(a) 11.54%
(b) 6.924%
(c) 10.26%
(d) 8.204%

(v) Estimated fair value of an asset is based on the _____ value of operating cash flows.
(a) current
(b) discounted
(c) future
(d) none of these

Answer:
(i) (b) PE ratio is 30.

Earnings (Rs. crores)	90
No. of shares (crores)	45
EPS (Rs.)	2
Market price of each share (`)	60
PE Ratio (MPS ÷ EPS)	30

(ii) (a) Rs. 20 lakhs.
Rs. [90 - (50 + 20)] crores. Premium on merger is irrelevant.

(iii) (d) synergy
The idea that the value and performance of two companies combined will be greater than the sum of the separate individual parts is called Synergy. This term is used mostly in the context of mergers and acquisitions. For example, if Company A has an excellent product but lousy distribution whereas Company B has a great distribution system but poor products, the companies could create synergy with a merger.

(iv) (c) 10.26%
Weighted average cost of capital = 13.9%(0.60) + 8%(1-0.40)(0.40) = 10.26%

(v) (b) discounted
In Discounted Cash Flow (DCF) valuation, the value of an asset is the present value of the expected cash flows on the asset.

6.(a) From the following information determine the Possible Value of Brand as per Potential Earning Model –

(Rs. Lakhs)

Particulars		CASE A	CASE B
(i)	**Profit Before Tax (PBT)**	**--**	**15.00**
(ii)	**Income Tax**	**--**	**3.00**
(iii)	**Profit After Tax (PAT)**	**2,700**	**--**
(iv)	**Tangible Fixed Assets**	**10,000**	**20.00**
(v)	**Identifiable Intangible other than Brand**	**1,500**	**10.00**
(vi)	**Weighted Average Cost of Capital**	**15%**	
(vii)	**Expected Normal Return on Tangible Assets Weighted Average Cost (15%) + Normal Spread 5%**	**20%**	**6.00**
(viii)	**Appropriate Capitalization Factor for Intangibles**	**25%**	**25%**

[10]

(b)(i) Write short note on Specialised Investment Enterprises. [5]
(ii) X Ltd. has the following portfolio of investment on 31st March 2019:

Current investment	Cost	Market Value
Shares of A Ltd.	**250**	**265**
Units of UTI	**160**	**160**
Shares of C Ltd.	**125**	**100**
	535	**525**
Long term investment		
Shares of Y Ltd. (subsidiary)	**200**	**210**
Shares of Z Ltd.	**150**	**130**
Shares of W Ltd. (subsidiary)	**80**	**10**
	430	**350**

Compute the value of investment for balance sheet purpose assuming that the fall in value of investment Z Ltd. is temporary and that of W Ltd. is permanent. [5]

Answer:
(a)

CASE A

Particulars	Rs. Lakhs	Rs. Lakhs
Profit After Tax	2,700	2,700
Less: Normal Return from Tangible Assets (Rs.10,000 Lakhs x 20%)	(2,000)	(2,000)
Less: Normal Return from Other Intangible Assets (Rs.1,500 Lakhs x 25%)	(375)	(375)
Brand Earnings	325	325
Capitalization Factor = WACC	25%	15%
Therefore, Value of Brand	Rs. 1,300 Lakhs	Rs. 2,166.67 Lakhs

CASE B

Particulars	Rs. Lakhs
Profit Before Tax	15.00
Less: Income Tax	(3.00)
Profit After Tax	12.00
Less: Normal Return Tangible Assets	(6.00)
Less: Normal Return from Other Intangible Assets (Rs. 10 Lakhs x 25%)	(2.50)
Brand Earnings	3.50
Capitalization factor	25%
Therefore, Value of Brand (Rs. 3.50 Lakhs ÷25%)	Rs. 14 Lakhs

(b)(i) Specialised Investment Enterprises: Specialised investment enterprises which are prohibited from distributing profits on the disposal of investments may exclude from income changes in value of investments, whether realised or not, provided they carry their investments at fair value. Such enterprises should include in the financial statements a summary of all the movements in value of their investments for the period.

In certain countries, there are specialised investment enterprises whose main business is the holding of a portfolio of marketable securities as an investment vehicle for their individual shareholders. These enterprises carrying their investments at fair value, usually market value, because this is the most appropriate basis in the circumstances. They regard realised profits and losses on their investments as being the same in substance as unrealized gains and losses and therefore account for them in the same way. They disclose a summary of all the movements in the value of their investments for the period.

The constitutions of these enterprises prohibit the distribution as dividends of profits on disposal of investments and require a distinction to be drawn between income arising from interest and dividends and the gains or losses arising on the disposal of the investments. Hence these enterprises exclude from income all changes in value of investments whether or not they are realised.

(ii) Current investment (at lower of cost or market value, individually) (Rs. in thousands)

Shares of A Ltd.	250	
Units of UTI	160	
Shares of C Ltd.	100	510
Long term investments		
Shares of Y Ltd.	200	
Shares of Z Ltd	150	
Shares of W Ltd.	80	
	430	
Less: Provision for permanent diminution	70	360
Total: (510 + 360)		870

Interest, dividend and rental receivables in connection with an investment are generally regarded as income, being the return on the investment. However, in some circumstances, such inflows represent a recovery of cost and do not from part of income. This happens when the inflows relate to a period prior to the date of acquisition of investment. Such inflows will be deducted from the cost of acquisition.

7.(a) Acquiring company is considering the acquisition of Target Company in a stock- for-stock transaction in which target Company would receive Rs.90 for each share of its common stock. The Acquiring company does not expect any change in its price/ earnings ratio multiple after the merger and chooses to value the target company conservatively by assuming no earnings growth due to synergy.

The following additional information is available:

Particulars	Acquiring	Target
Earnings	**Rs. 2,50,000**	**Rs. 72,500**
Number of shares	**1,10,000**	**20,000**
Market Price per Share	**` 50**	**` 60**

Calculate:

(i) The purchase price premium

(ii) The exchange ratio

(iii) The number of new shares issued by the acquiring company.
(iv) Post-merger EPS of the combined firms
(v) Pre-merger EPS of the Acquiring company
(vi) Pre-merger P/E ratio
(vii) Post-merger share price
(viii) Post-merger equity ownership distribution.
(ix) Also, Comment on your results. [(1×8)+2=10]

(b) Kolkata Ltd. and Bombay Ltd. have agreed that Kolkata Ltd. will take over the business of Mumbai Ltd. with effect from 31st December, 2019. 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 Rs.50 and Rs.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 shareholders of Mumbai Ltd.

The following projections have been agreed upon by the management of both the companies:

Year	2020	2021	2022	2023	2024
Benefit Rs. (in lakhs)	50	75	90	100	105

The benefit is estimated to grow at the rate of 2% from 2024 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.

- **Calculate the cash that holder of each share of Mumbai Ltd. will receive**
- **Calculate the total purchase consideration.**

(Discounting Rate 20%: 1 year-0.833, 2 year-0.694, 3 year-0.579, 4 year-0.482, 6 year-0.335). [10]

Answer:

(a)

(i) Purchase price premium = Offer price for Target company stock/Target company Market price per share = 90/60 = 1.5

(ii) Exchange ratio = Price per share offered for Target Company/Market Price per share for the acquiring company = 90/50 = 1.8
Acquiring company issues 1.8 shares of stock for each of Target Company's stock.

(iii) New shares issued by acquiring company = shares of Target Company x Exchange ratio = 20,000 × 1.8 = 36,000.

(iv) Post-merger EPS of the combined companies = Combined earning/ total number of shares.
Combined earnings = (2,50,000 + 72,500) = Rs.3,22,500
Total shares outstanding of the new entity
= 1,10,000 + 36,000 = 1,46,000
= Rs.3,22,500 ÷ 1,46,000 = Rs.2.209

(v) Pre-merger EPS of the acquiring company
= earnings / Number of shares
= 2,50,000 / 1,10,000 = Rs.2.273

(vi) Pre-merger P/E = Pre-merger market price per share / Pre-merger earnings per share
= 50/2.273 = 22.00

(vii) Post-merger share price = Post-merger EPS x Pre-merger P/E
= 2.209 × 22.00 = Rs.48.60 (as compared to Rs.50 Pre-merger)

(viii) Post-merger Equity Ownership Distribution
Target Company = Number of new shares / Total number of shares
= 36,000/ 1,46,000 = 0.2466 or 24.66%
Acquiring company = 100 – 24.66 = 75.34%

(ix) Comment – The acquisition results in a Rs. 1.40 reduction in the market price of the acquiring company due to a 0.064 decline in the EPS of the combined companies. Whether the acquisition is a poor decision depends upon what happens to the earnings would have in the absence of the acquisition, the acquisition may contribute to the market value of the acquiring company.

(b) (i) Present Value of Synergy Benefits

Year	Computation	PV = Rs. Lakhs
2020	50 x 0.833	41.65
2021	75 x 0.694	52.05
2022	90 x 0.579	52.11
2023	100 x 0.482	48.20
2024	105 x 0.402	42.21
2025 onwards (Terminal Value Note)	(105 x 102% ÷18%) x 0.402	239.19
Total		475.41

50% on the Synergy Benefits = 475.41 x 50% = Rs. 237.705 lakhs

for the business Cash for every share held in Mumbai Ltd. = 237.705 ÷10 = Rs. 23.77

Note: For every increasing cash flow at constant growth rate i.e., perpetual Cash Flow is as under:

(ii) Total Purchase Consideration

(A) Equity Share (25/50 x 10,00,000 x Rs. 50)	Rs. 250.00 lakhs
(B) Cash= 50% of Synergy Benefits	Rs. 237.70 lakhs
Total	Rs. 487.70

8.(a) The following information is given for three companies that are identical except for their capital structure:

	Orange	**Red**	**Blue**
Total Invested Capital	**1,00,000**	**1,00,000**	**1,00,000**
Debt/Assets Ratio	**0.8**	**0.5**	**0.2**
Shares Outstanding	**6,100**	**8,300**	**10,000**
Pre Tax Cost of Debt	**16%**	**13%**	**15%**
Cost of Equity	**26%**	**22%**	**20%**
Operating Income (EBIT)	**25,000**	**25,000**	**25,000**
Net Income	**8,970**	**12,350**	**14,950**

The tax is uniform 35% in all cases.

(i) Compute the weighted average cost of capital for each company.

(ii) Compute the Economic Value Added (EVA) for each company.

(iii) Based on the EVA, which company would be considered for best investment? Give reasons.

(iv) If the industry P/E ratio is 11 times, estimate the price for the share of each company.

(v) Calculate the estimated market capitalization for each of the Companies. [10]

(b) Q Ltd. wants to acquire R Ltd. and has offered a swap ratio of 1 : 2 (0.5 shares for every one share of R Ltd.).

Following information is provided:

Particulars	Q Ltd.	R Ltd.
Profit after tax (Rs.)	18,00,000	3,60,000
Equity shares outstanding (Nos.)	6,00,000	1,80,000
EPS (Rs.)	3	2
P/E Ratio	10 times	7 times
Market price per share (Rs.)	30	14

Required:

(i) The number of equity shares to be issued by Q Ltd., for acquisition of R Ltd.

(ii) What is the EPS of Q Ltd., after the acquisition?

(iii) Determine the equivalent earnings per share of R Ltd.

(iv) What is the expected market price per share of Q Ltd., after the acquisition, assuming its P/E multiple remains unchanged?

(v) Determine the market value of the merged firm. [2x5=10]

Answer:

(a)

(i)		Orange	Red	Blue
	W/d (Debt/Assets Ratio)	0.8	0.5	0.2
	Kd (Cost of Debt) (%)(after tax)	10.4	8.45	9.75
	We (Weight of Equity)	0.2	0.5	0.8
	Ke (Cost of Equity) %	26	22	20
	WACC (Weighted Avg. cost of Capital)%	13.52	15.225	17.95
(ii)	Invested Capital	1,00,000	1,00,000	1,00,000
	EBIT	25,000	25,000	25,000
	NOPAT	16,250	16,250	16,250
	EVA (Economic Value Added)	2,730	1,025	-1,700

	(NOPAT- WACC x Invested Capital)			
	Best Company	Orange		
(iii)	Orange company would be considered for best investment since the EVA/Performance metric of the Company is highest and its weighted Average cost of capital is the lowest.			
		Orange	Red	Blue
(iv)	Shares (Nos.)	6,100	8,300	10,000
	Net Income	8,970	12,350	14,950
	EPS	1.47	1.49	1.50
	Price (P/E = 11)	16.17	16.39	16.50
(v)	Market Capitalization (No. of shares x price)	98,637	1,36,037	1,65,000

(b)

(i) The number of shares to be issued by Q Ltd.:

The Exchange ratio is 0.5

So, the new shares = 1,80,000 × 0.5 = 90,000 shares.

(ii) EPS of Q Ltd., after acquisition:

Total Earnings = Rs. (18,00,000 + 3,60,000)	Rs. 21,60,000
No. of Shares (6,00,000 + 90,000)	6,90,000
EPS (Rs. 21,60,000) / 6,90,000	Rs. 3.13

(iii) Equivalent EPS of R Ltd.,

No. of new shares	0.5
EPS(Rs.)	3.13
Equivalent (3.13 ×0.5) (Rs.)	1.57

(iv) New Market price of Q Ltd., (P/E remaining unchanged):

Present P/E Ratio of Q Ltd.,	10 times
Expected EPS after merger (Rs.)	3.13
Expected Market Price (3.13 × 10) (Rs.)	31.30

(v) Market Value of merged firm:

Total number of Shares	6,90,000
Expected Market Price (Rs.)	31.30
Total Value (6,90,000 x 31.30) (Rs.)	2,15,97,000