FINAL EXAMINATION

GROUP IV

(SYLLABUS 2016)

SUGGESTED ANSWERS TO QUESTIONS

JUNE 2019

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

Strategic Performance Management

(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: 2x5=10

(i) 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

(ii) If the average cost function of a firm is given by $AC = x^2 – 4x + 7$, in terms of output x, what will be its marginal cost?

(A) $2x^3 - 4x^2 + 7x$

(B) $3x^2 - 8x + 7$

(C) $x^3 - 8x^2 + 7x$

(D) None of the above

(iii) Which one of the following strategies is not for managing risk?

(A) Risk-Avoidance Strategy

(B) Risk-Transferring Strategy

(C) Risk-Measurement Strategy

(D) Risk-Acceptance Strategy

(iv) For a monopolist firm, the profit will be maximum when

(A) AR = AC

(B) AR > AC

(C) MR = MC

(D) MR > MC

(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) (D) : The causes for corporate distress can be-Technological causes, working capital problems, economic distress, mismanagement, fraud by Management etc.

(ii) (B) : $3x^2 - 8x + 7$

Total cost (c) = $x(x^2 - 4x + 7) = x^3 - 4x^2 + 7x$

Marginal cost = $\frac{d}{dx}(x^3 - 4x^2 + 7x)$

$= 3x^2 - 8x + 7$

(iii) (C) : Risk-Measurement Strategy as it is not a strategy of managing risk but a strategy to quantify risk.

(iv) (C) : MC = MR, as this is the condition for Profit Maximization.

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

2. (a) 'Performance management and performance appraisal are sometimes used synonymously but they are different'. Do you agree this statement? Support your answer by highlighting bases of difference, if any, between them. 10

(b) Write down and elaborate the components of Performance Management. 10

Answer:

2. (a)

The statement performance management and performance appraisal are sometimes synonymously but they are different, is correct. Performance management is a comprehensive, continuous and flexible approach to the management of organizations, teams and individuals which involves the maximum amount of dialogue between those concerned. Performance appraisal is a more limited approach which involves managers making top-down assessments and rating the performance of their subordinates at an annual performance appraisal meeting.

Following few major differences can be identified between these two:

Performance Appraisal	Performance Management
It concerns with top-down assessment.	It concerns with joint process through dialogue.
Annual appraisal meeting is held.	Continuous review with one or more formal reviews, it is not an annual process.
It is monolithic system.	It is flexible process.
It focuses on quantified objectives.	It focuses on values and behaviors as well as objectives.
Complex paperwork is needed -bureaucratic approach	Documentation kept to a minimum-managerial approach
It is owned by the Human Resource department.	It is owned by line managers.
Involves use of Ratings.	Use of ratings less common.
Structured system, not open to change.	Flexible system.
It is a part of Performance Management.	It includes performance Appraisal, but goes beyond.

2. (b)

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 ond 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 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.

3. (a) The total cost function of a firm, $C = \frac{x^3}{3} - 5x^2 + 28x + 10$ where C is total cost and 'x' is the output. A GST @ ₹2 per unit of output is imposed and the producer adds it to his cost. If the demand function is given by D = 2530 – 5x, where ₹ D is the price per unit of output.
Find the profit maximizing output and the price at the level. Also obtain maximum profit. 8+2=10

(b) (i) What do you understand by corporate distress? List down important factors causing corporate distress. 4

(ii) The following financial information has been taken from the Annual Report 2019 of Stress Limited.

Balance Sheet of Stress Limited as at March 31,	2019
ASSETS:	(₹ in crores)
Non-Current Assets	
Property, Plant and Equipment	1,654.11
Intangible Assets	375.15
Other Non-Current Assets	388.18
	2,417.44
Current Assets	
Inventories	128.56
Financial Assets excluding Cash and Cash Equivalent	85.36
Cash and Cash Equivalent	6.85
Other Current Assets	568.93
Total Current Assets	789.70
Total Assets	3,207.14
EQUITY AND LIABILITIES:	
Equity	
Equity Share Capital	362.75
Other Equity	(568.94)
Net Worth	(206.19)
Non-Current Liability	
Financial Liabilities	1,203.00
Provisions	112.63
Other Non-Current Liabilities	46.59
Total Non-Current Liabilities	1,362.22
Current Liabilities	
Financial Liabilities	1,721.65
Provisions	95.25
Other Current Liabilities	234.21
Total Current Liabilities	2,051.11
Total Equity and Liabilities	3,207.14

Additional Information:

- **Depreciation written off — ₹ 28 crores.**
- **Preliminary Expenses written off — ₹ 11.60 crores.**
- **Net Loss during the FY 2018-19 — ₹ 58.70 crores.**

Using the NCAER Model for Corporate Distress Prediction, you are required to ascertain the stage of sickness. 6

Answer:

3. (a)

Given (C) = $\frac{x^3}{3} - 5x^2 + 28x + 10 + 2x$

D = 2530 – 5x, where ₹ D = Price per unit

Revenue = XD = $2530X - 5x^2$

Profit (P) = $2530x - 5x^2 + 5x^2 - \frac{x^3}{3} - 28x - 2x - 10$

$P = -\frac{x^3}{3} + 2500x - 10$

In order that maximum Profit is attained.

$\frac{dp}{dx} = 0$ and

$\frac{d^2p}{dx^2}$ = Negative

Derivative w.r.t. x

$$\frac{dp}{dx} = \frac{d}{dx}\left(-\frac{x^3}{3} + 2500\,x - 10\right) = 0$$

$= -x^2 + 2500 = 0$

Or, $x^2 = 2500$

$x = \sqrt{2500} = 50$

$\frac{d^2p}{dx^2} = -2x$, which is negative

Maximum profit is at x = 50 units

Price = D = 2530 – 5×50 = 2280

Profit (P) = $-\frac{x^3}{3} + 2500x - 10$

$= -\frac{125000}{3} + 2500x50 - 10 =$ ₹ 83323.33

3. (b) (i)

Corporate distress refers situation when a company ceasing operations following its inability to make profit or bring in enough revenue to cover its expenses. It represents a case when a company fails to meet its liabilities. It is recognized when a company is having low profitability, high debt and low liquidity. It may be caused by the following factors:

- Technological Causes
- Working Capital Problems
- Economic Distress
- Mismanagement
- Over-expansion and Diversification

- Fraud by Management
- Poorly Structured board
- Financial Distress

3. (b) (ii)

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)

If anyone of the above mentioned parameters becomes negative in case of a firm, it can be predicted that the firm likely to move towards sickness. If all the three parameters are negative then it shows that the company is fully under corporate distress. In order to decide in the given case, the stage of sickness, we have to calculate all the three above mentioned parameters.

- Cash profit position: It means that we have to calculate cash from operating activities. In the given case, Cash from Operating Activities = Net Profit + Depreciation Written Off + Preliminary Expenses Written Off = ₹ [(58.70) + 28.00 + 11.60] crores = ₹ (19.10) crores which is negative.

- Net Working Capital: Net Working Capital = Current Assets - Current Liabilities = ₹ [(128.56 + 85.36 + 6.85 + 568.93) - 2,051.11] crores = ₹ (1,261.41) crores which is also negative.

- Net Worth: Net Worth = Equity Share Capital + Other Equity = ₹ (362.75 - 568.94) crores = ₹ (206.19) crores which is also negative.

Thus, we find that in this case, all the three parameters are negative and hence, we can conclude that the company is a sick company and its stage of sickness is 'fully sick'. Therefore, immediate necessary drastic revival measures are essentially required for the survival of the company.

4. (a) Compare and contrast between Basel I and Basel II norm. 10
(b) Define MIS and state the objectives of MIS. 10

Answer:

4. (a)

Comparison between Basel I and Basel II:

Basel – I (1988 and amended in 1996) - Based on Methodology for Capital Adequacy	Basel - II (to be in place by 2006 in G-10 countries and in India in 2008)- Basel II based on 3 pillars
1. Capital adequacy based on Risk Weighted Assets	1. Capital adequacy based on Risk Weighted Assets

2. Not risk sensitive. Prescriptive.	2. Risk sensitive.
3. All credit exposures carried risk weight of 100 per cent - except for some sovereign exposures and mortgages	3. Credit exposures carry risk weights based on credit qualities.
4. Risk Capital = Credit exposure × Risk Weights × 8 per cent can have lesser Capital than others	4. Risk capital: Similar to Basel I. But efficient Banks can have lesser capital than others

Implications were -	Implications are -
• Every bank had to maintain same 8 percent capital. Thus Banks with good quality assets had no incentives. As a result credit quality had to be lowered to increase returns • Low rated exposures were subsidized by high rated exposures • No provision for economic pricing by banks	• Banks with good quality assets have incentives because they can manage with lower capital • Better quality assets requires lesser capital • Risk pricing can be done by banks based on credit risk perception • Provision exists for economic pricing by banks

4. (b)

Management Information System (MIS):

Management Information System is a systematic process of providing relevant information in right time in right format to all levels of users in the organization for effective decision making. MIS is also defined to be system of collection, processing, retrieving and transmission of data to meet the information requirement of different levels of managers in an organization.

According to CIMA

MIS is a set of procedures designed to provide managers at different levels in the organization with information for decision making, and for control of those parts of the business for which they are responsible. MIS comprises of three elements viz., management, information and system. The concept of MIS is better understood if each element of the term MIS is defined separately.

Management: A manager may be required to perform following activities in an organisation:

(i) Determination of organisational objectives and developing plans to achieve them.

(ii) Securing and organising human beings and physical resources so as to achieve the laid down objectives.

(iii) Exercising adequate controls over the functions performed at the lower level.

(iv) Monitoring the results to ensure that accomplishments are proceeding according to plans.

Information: Information is data that have been organised into a meaningful and useful context. It has been defined by Davis and Olson - "Information is data that has been processed into a form that is meaningful to the recipient and is of real or perceived value in current or progressive decision". For example, data regarding sales by various salesmen can be merged to provide information regarding total sales through sales personnel. This information is of vital importance to a marketing manager who is trying to plan for future sales.

System: System may be defined as a composite entity consisting of a number of elements which are interdependent and interacting, operating together for the accomplishment of an objective. One can find many examples of a system. Human body is a system, consisting of various parts such as head, heart, hands, legs and so on. The various body parts are related by means of connecting networks of blood vessels and nerves. This system has a main goal which we may call "living". Thus, a system can be described by specifying its parts, the way in which they are related, and the goals which they are expected to achieve. A business is also a system where economic resources such as people, money, material, machines, etc. are transformed by various organisation processes (such as production, marketing, finance, etc.) into goods and services.

Objectives of MIS:

- To provide the managers at all levels with timely and accurate information for control of business activities
- To highlight the critical factors in the operation of the business for appropriate decision making
- To develop a systematic and regular process of communication within the organization on performance in different functional areas
- To use the tools and techniques available under the system for programmed decision making
- To provide best services to customers
- To gain competitive advantage
- To provide information support for business planning for future

Section-B

Business Valuation

(50 Marks)

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

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) A bond of a company is trading at a premium at present. It is expected that in future its price will _____ with the passage of time keeping other factors constant.

(A) decrease

(B) increase

(C) not change

(D) All three above are possible

(ii) Which of the following is a financial liability for a company?

(A) X Ltd. has issued 10 crores of ₹ 10 each equity shares.

(B) X Ltd. has issued 10 crores of ₹ 10 each cumulative redeemable preference shares.

(C) X Ltd. has issued 10 crores of ₹ 10 each non-cumulative compulsorily convertible preference shares.

(D) Both (B) and (C)

(iii) A Company based on up-to-date financial statements has determined that the current Free Cash Flows to Equity (FCFE) per share is ₹ 1.00. It has outstanding number of shares 100 crores with a face value of ₹ 10 each. Its interest expenses are ₹ 30 crores and tax rate is 30%. Given this information, The Free Cash Flow to the Firm (FCFF) will be

(A) ₹ 109 crores

(B) ₹ 112 crores

(C) ₹ 121 crores

(D) ₹ 130 crores

(iv) Estimated fair value of an asset is based on the _____ value of operating cash flows.

(A) current

(B) future

(C) discounted

(D) None of the above

(v) SBT Ltd. has an issued and paid up Capital of 100000 shares of ₹100 each. The company declared a dividend of ₹25 lakh during the last five years and expects to maintain the same of level of dividends in the future. If the average dividend yield for the listed companies in the same line of business is 16%, then value per share of SBT Ltd. is

(A) ₹ 150.50

(B) ₹ 156.25

(C) ₹ 160.50

(D) Insufficient information

Answer:

5.

(i) (A) : The bond is presently trading at a premium and when it approaches to its maturity, its price will converge to par value. Hence, its price in future will decrease.

(ii) (B) : The reason is that the cumulative redeemable preference shares are financial liability of the company because the company is under obligation to pay dividend and redeem at the maturity.

(iii) (C) : ₹ 121 crores

Particulars	Amount
FCFE (Per Share)	₹ 1.00
No. of Shares (in crores)	100.00
Total FCFE (in crores)	₹ 100.00
Plus [Interest × (1 – tax rate)] (in crores)	₹ 21.00
Therefore, Free Cash Flows to the Firm (in crores) will be	₹ 121.00

(iv) (C) : Discounted.

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

(v) (B) : ₹ 156.25

Dividend per share $\frac{25,00,000}{1,00,000}$ = ₹ 25

Dividend yield = 16%

Value per share = $\frac{25}{0.16}$ = ₹ 156.25

6. (a) Vipul Ventures Limited has entered the phase of maturity in its life cycle and its cash flows (before interest and taxes) are expected to remain constant at the current level of ₹ 550.25 lakh. Presently it is an all equity finance firm.

The cost of equity for Vedika Limited, which resembles Vipul Ventures in terms of its risk-return characteristics, is 15.75 per cent. You are expected to find out the value of Vipul Ventures. The tax rate applicable to Vipul Ventures is 38.5% including surcharges and all Cess, if any.

What will be impact on firms's cost of equity, weighted average cost of capital and its valuation if the firm decides to alter its capital structure to have a 25% debt ratio? The cost of debt for firms with the risk profile similar to Vipul Venture is 10.25 per cent. 10

(b) Hajela Private Limited are negotiating to sell their business to a Public Limited Company. The following is summarized extract from the balance sheet as at 31 March, 2019 of the Hajela Private Limited:

Capital, 1000 shares of ₹ 1000 each 10,00,000

Reserve		**2,00,000**
		12,00,000
Fixed assets at depreciated cost		**6,40,000**
Current assets	**₹ 7,20,000**	
***Less:* Current liabilities**	**₹ 1,60,000**	**5,60,000**
		12,00,000

The profits of Hajela Private Limited for the five years it has been in existence after eliminating any extraneous or non-recurring debits and credit are ₹1,90,000; ₹ 2,30,000; ₹ 2,15,000; ₹ 3,40,000 and ₹ 3,75,000 respectively. A return of 20 per cent per annum on the capital employed is considered to be reasonable in this particular business and it is expected that future requirements as to capital will not vary materially from the capital employed as at 31st, March.

Ignoring any extraneous factors that may affect the position, suggest the amount that should reasonably be paid to the private company for the goodwill therefore to be acquired by the purchasing company, giving details of how you work out this amount by assuming three years of purchase for valuing the goodwill but capital employed be considered for this purpose. 10

Answer:

6. (a)

Value of the firm= Value of equity holders+ value to debt holders

Particulars	₹ In Lakhs
Cash flow before interest and taxes	550.25
Interest	Nil
Cash flow before taxes	550.25
Taxes @38.5%	211.85
Cash flow after taxes	338.40

Cost of equity for Vipul ventures (r_0) = 0.1575 or 15.75%. The value of the firm is computed at ₹2148.60 lacs:

338.40/0.1575

= ₹ 2148.60 lakhs (in case of unlevered firm)

The value of levered firm increases by the amount of tax shield generated by debt. The amount of tax shield that is available on debt depends on the tax rate, then the value of Cost of equity in the levered firm is given by

= 0.1575 +1/3 × (1– 0.385) × (0.1575 – 0.1025)

= 0.16878 or 16.88%

WACC of levered firm

R_0 = 3/4 × 0.1688 + 1/4(0.615) × 0.1025

= 0.1423 or 14.23%

Value of firm = 338.4/0.1423

= ₹ 2378 lakhs

6. (b)

(a) Total profit = 1,90,000 + 2,30,000 + 2,15,000 + 3,40,000 + 3,75,000 = 13,50,000

Average profit = 13,50,000/5

₹ 2,70,000

Reasonable return on capital employed = 12,00,000 × 20 percent

= 2,40,000

Super profits = 2,70,000 – 2,40,000

= ₹ 30,000

Hence the value of goodwill will be ₹(30,000 x 3) = ₹ 90,000

According to capitalized method:

Capitalized value = 2,70,000 × 100/20 = ₹ 13,50,000

Goodwill = ₹ 13,50,000 – ₹ 12,00,000 = ₹1,50,000

Thus, three years purchase of super profits gives a lower figure as it does not take into account potential value of ₹ 90,000. The capitalised value provides a valuation of ₹1,50,000. This can be corrected by using weighted average for determining average profits with higher weights for more recent years, as the profit is showing a rising trend.

Using weights of 1, 2, 3, 4, 5 respectively for the five years —

Weighted average profit = (₹ 1,90,000 × 1 + ₹ 2,30,000 ×2 + ₹ 2,15,000 × 3 + ₹ 3,40,000 × 4 + ₹ 3,75,000 × 5) ÷ (1 + 2 + 3 + 4 + 5)

= ₹ 45,30,000 ÷ 15 = ₹ 3,02,000

Super profits = ₹ 3,02,000 – ₹ 2,40,000 = ₹ 62,000

Goodwill at 3 years purchase = 3 × ₹ 62,000 = ₹ 1,86,000

The price of the goodwill can be negotiated between the range of ₹ 90,000 and ₹ 1,86,000 and can approach at maximum the capitalised value of ₹ 1,50,000.

7. (a) Two firm X and Y operating in the cement industry. Both the firms are planning for a merger. Firm X is worth ₹ 200 lakh and Y is worth ₹ 50 lakh. On merging, the two would allow cost savings with a present value of ₹ 25 lakh. Assume that Y is bought by X for a cash of ₹ 65 lakh.

Estimate:

(i) The value of the combined firm

(ii) The cost of the merger for firm X

(iii) The NPV to Y's shareholders

(iv) The NPV to X's shareholders **10**

(b) Deepika Ltd. is a highly successful company and wishes to expand by acquiring other firms. Its expected high growth in earnings and dividends is reflected in its price-earning (P/E) ratio of 17. The Board of Directors of Deepika Ltd. has been advised that if it were to takeover firm with a lower P/E ratio than its own, using a share-for-share exchange, it could increase its reported earnings per share. Alia Ltd. has been suggested as a possible target for takeover, which has a P/E ratio of 10 and 10,00,000 shares in issue with a share price of ₹ 15 each. Deepika Ltd. has 50,00,000 shares in issue with a share price of ₹ 12 each.

Calculate the change in earnings per share of Deepika Ltd., if it acquire Alia Ltd. shares for ₹ 15 per share, assume that the price of Deepika Ltd. shares remains constant. **10**

Answer:

7. (a)

(i) Let the value of the combined firm be presented as PV_{XY} and the value of the two separate firms can be represented as PV_X and PV_Y

Gain the difference between the value of the combined firm and the sum of the values of two individual firms. It given as:

Gain = $PV_{XY} - (PV_X + PV_Y)$

P_x = ₹ 200 lakhs, P_y = ₹ 50 lakhs and

Gain = ₹ 25 lakhs

Gain = $PV_{XY} - (PV_X + PV_Y)$

25 = $PV_{XY} - (200 + 50)$

(Value of the combined firm) PV_{XY} = ₹ 275 lakhs

(ii) Cost of the Merger, for firm X = Cash paid - PV_Y

= ₹ (65 – 50) lakhs = ₹ 15 lakhs

(iii) NPV to Y's shareholders = The gain of Y's shareholders is the cost firm X i.e. ₹15 lakhs. This means, of the ₹ 25 lakhs gain, firm Y has contributed ₹ 15 lakhs.

(iv) NPV to X's shareholders = Overall gain from the merger less Cost to acquire Y = ₹ (25 – 15) lakhs = ₹ 10 lakhs.

7. (b)

Particulars	**Deepika Ltd.**	**Alia Ltd.**
P/E ratio	17	10
Number of shares	50,00,000	10,00,000
MPS (₹)	12	15

EPS = (MPS ÷ P/E)(₹)	0.706	1.5
Earnings (₹)	35,30,000	15,00,000

Total earnings after takeover = ₹ 35,30,000 + ₹ 15,00,000 = ₹ 50,30,000

Number of shares offered by Deepika Ltd. to Alia Ltd.:

= 10,00,000 × 15/12 = 12,50,000 shares

EPS of combined entity = $\frac{₹\ 50,30,000}{50,00,000+12,50,000}$ = 0.8048

Increase in earnings per share = 0.8048 – 0.7060 = ₹ 0.0988.

Note: Current P/E of Deepika Ltd. = 17
Price offered to Alia Ltd. = 15

Implied P/E ratio = Price offered ÷ EPS of Alia Ltd. = 15 ÷ 1.5 = 10

This P/E is less than P/E of Deepika Ltd.

Therefore such a deal would result in a higher EPS after acquisition.

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) Rachna Limited is considering a takeover of Mona Limited. The particulars of two companies are given below:

Particulars	Rachna Limited	Mona Limited
Earnings after tax (₹)	**20,00,000**	**10,00,000**
Equity shares (Number)	**10,00,000**	**10,00,000**
Earnings per share	**2**	**1**
Price earnings ratio (times)	**10**	**5**

You are required to give following:

(i) What is the market value of each company before merger?

(ii) Assuming that the management of Rachna Limited estimates that the shareholders of Mona Limited will accept an offer of one share of Rachna Limited for four shares of Mona Limited. What is the market value of the post-merger effect on Rachna Limited? Are the shareholders of Rachna Limited better or worse off than they were before the merger?

(iii) Due to synergic effects, the management of Rachna Limited estimates that the earnings will increase by 25%. What will be the market price per share? 10

Answer:

8. (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)			
(iii)	Best Company	Orange		
	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.			
(iv)		Orange	Red	Blue
	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

8. (b)

(i) Market value of companies before merger

Particulars	**Rachna Limited**	**Mona Limited**
EPS (₹)	2	1
P/E ratio	10	5
Market price per share (₹)	20	5
Number of equity shares	10,00,000	10,00,000
Total market value (₹)	2,00,00,000	50,00,000

(ii) Post merger effect on Rachna limited:

Particulars	
Post merger earnings (20 lakhs +10 lakhs) (₹)	30,00,000
Equity shares (exchange ratio 1:4) (10 lakhs + 10/4 lakhs)	12,50,000
EPS (₹)	2.4
P/E ratio	10
Market price per share (₹) (2.4x10)	24
Total market value (₹)	3,00,00,000

Gains from merger for Rachna Limited

Particulars	₹
Post merger market value of the firm	300,00,000
Less: Pre-merger market value	
Rachna Limited ₹ 200,00,000	
Mona Limited ₹ 50,00,000	250,00,000
Gains	50,00,000

Apportionment of gains between shareholders: **(₹)**

Particulars	Rachna Limited	Mona Limited
Post merger market value		
10,00,000 x 24	2,40,00,000	
2,50,000 x 24		60,00,000
Less: pre merged market value	2,00,00,000	50,00,000
Gains	40,00,000	10,00,000

Conclusion: Shareholders of Rachna Limited will be better off than before the merger situation.

(iii) Post merger earnings:

Increase in earnings by 25 percent.

New earnings ₹ 30,00,000 × 125 percent

= ₹ 37,50,000

Number of equity shares = 12,50,000

Earnings Per Share (EPS) = ₹ 37,50,000/12,50,000

= ₹ 3

P/E ratio = 10

Market price per share = ₹ 3 × 10 = ₹ 30.