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

(i) The 5 S's concepts in Quality Management are:
(A) SEIRI, SETOIN, SEISO, SEIKETSU, SHITSKUE
(B) SEIRI, SEITON, SEISO, SEIKETSU, SHITSUKE
(C) SEIRI, SETOIN, SEISO, SEIKESTU, SHITSUKE
(D) SIERI, SETOIN, SEISO, SEIKETSU, SHITSUKE.

(ii) The rate of change in the demand due to the change in the income is called:
(A) income elasticity of demand
(B) cross elasticity of demand
(C) price elasticity of demand
(D) None of the above.

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

(iv) The risk which arises primarily due to deviation from planned normal functioning of system, procedures, technology, human failure, omission or commission of errors, is called:
(A) Currency Risk
(B) Industry Risk
(C) Operational Risk
(D) Callability Risk

(v) 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

Answer:

1. (i) (B) The 5 S's concepts in Quality Management are — SEIRI, SEITON, SEISO, SEIKETSU, and SHITSUKE. These all are Japanese words and used to focuses on quality improvement in an organization.

(ii) (A) The income elasticity of demand explains the proportionate change in income and proportionate change in demand.

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

(iv) (C) Operational risk arises primarily due to deviation from planned normal functioning of system, procedures, technology, human failure, omission or commission of errors. It also arises due to inherent fault in the systems, procedures and technologies that affect the revenue of the organization adversely.

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

2. (a) (i) "Financial performance analysis can be classified into different categories on the basis of material used and modus operandi" — Write about the various types of financial performance analysis in this context. [6]

(ii) Write a short note on Operative Customer Relationship Management. [4]

(b) What is Total Quality Management (TQM)? What are the steps to be taken in the implementation of TQM? [2+8]

Answer:

2. (a) (i) Financial performance analysis can be classified into different categories on the basis of material used and modes operandi as under:

A. Material used: On the basis of material used financial performance can be analyzed in following two ways:

1. **External analysis:** This analysis is undertaken by the outsiders of the business namely investors, credit agencies, government agencies, and other creditors who have no access to the internal records of the company. They mainly use published financial statements for the analysis and as it serves limited purposes.
2. **Internal analysis:** This analysis is undertaken by the persons namely executives and employees of the organization or by the officers appointed by government or court who have access to the books of account and other information related to the business.

B. Modus operandi: On the basis of modus operandi financial performance can be analyze in the following two ways:

1. **Horizontal Analysis:** In this type of analysis financial statements for a number of years are reviewed and analyzed. The current year's figures are compared with the standard or base year and changes are shown usually in the form of percentage. This analysis helps the management to have an insight into levels and areas of strength and weaknesses. This analysis is also called Dynamic Analysis as it based on data from various years.
2. **Vertical Analysis:** In this type of Analysis study is made of quantitative relationship of the various items of financial statements a particular date. This analysis is useful in comparing the performance of several companies in the same group, or divisions or departments in the same company. This analysis is not much helpful in proper analysis of firm's financial position because it depends on the data for one period. This analysis is also called Static Analysis as it based on data from one date or for one accounting period.

(ii) Operative Customer Relationship Management:

Operative Customer Relationship Management mainly supports the actual contact with customers conducted by front office workers and general automation of business processes including sales of products, services and marketing. All communication with the customer is tracked and stored in the database and if necessary it is effectively provided to users (workers). The advantage of this approach being the possibility to communicate with various employees using various channels but creating the feeling that customer is being taken care of by just one person. It can also minimize the time that the worker has to spend typing the information and administrating (the data is shared). This allows the company to increase the efficiency of their employees work and they are then able to serve more customers.

(b) Total Quality Management (TQM) is an active approach encompassing a company-wide operating philosophy and system for continuous improvement of quality. It demands cooperation from everyone in the company, from the top management down to workers.

TQM seeks to increase customer satisfaction by finding the factors that limit current performance. The TQM approach highlights the need for a customer-oriented approach to management reporting, eliminating some or more of traditional reporting practices.

The various stages/steps to be taken in the implementation of TQM are as follows:

Stage 1: Identification of customers / customer groups:
Through a team approach (a technique called Multi - Voting), the firm should identify major customer groups. This helps in generating priorities in the identification of customers and critical issues in the provision of decision - support information.

Stage 2: Identifying customer expectations: Once the major customer groups are identified, their expectations are listed. The question to be answered is - What does the customer expect from the Firm?

Stage 3: Identifying customer decision-making requirements and product utilities: By identifying the need to stay close to the customers and follow their suggestions, a decision - support system can be developed, incorporating both financial and non-financial information, which seeks to satisfy used requirements.

Stage 4: Identifying perceived problems in decision-making process and product utilities: Using participative processes such as brainstorming and multi-voting, the firm seeks to list out its perception of problem areas and shortcomings in meeting customer requirements. This will list out areas of weakness where the greatest impact could be achieved through the implementation of improvements. The firm identifies the answer to the question - What problem areas do we perceive in the decision-making process?

Stage 5: Comparison with other Firms and benchmarking: Detailed and systematic internal deliberations allow the Firm to develop a clear idea of their own strengths and weaknesses and of the areas of most significant deficiency. Benchmarking exercise allows the Firm to see how other Companies are coping with similar problems and opportunities.

Stage 6: Customer Feedback: Stages 1 to 5 provide a information base developed without reference to the customer. This is rectified at Stage 6 with a survey of representative customers, which embraces their views on perceived problem areas. Interaction with the customers and obtaining their views helps the Firm in correcting its own perceptions and refining its process.

Stage 7: Identification of improvement opportunities: The outcomes of the customer survey, benchmarking and internal analysis, provides the inputs for stages 7 i.e., the identification of improvement opportunities.

Stage 8: Implementation of Quality Improvement Process: Implementation of Quality Improvement Process through - a) Determination of new strategies, b) Elimination of deficiencies, and c) Identifying solutions.

3. (a) A firm assumes a cost function $c(x) = x\left(\frac{x^2}{10} + 200\right)$, x is a monthly output in thousands of units. Its revenue function is given by $R(X) = \left(\frac{2200 - 3x}{2}\right)x$. Find i) If the firm decides to produce 10,000 units per month, the firms cost and Marginal cost. ii) If the firm decides to produce Marginal cost of 320, the total cost of the firm. iii) The marginal revenue function. iv) If a decision is taken to produce 10,000 units each month, the total revenue and marginal revenue of the firm. v) If the firm produces with a marginal revenue of 1040, the firm's monthly revenue. [10]

(b) There are various causes for corporate distress. Write down those causes to analyse corporate distress. [10]

Answer:

3. (a)

$$c = x\left(\frac{x^2}{10} + 200\right) = \frac{x^3}{10} + 200x$$

X = '000 units p.m.

$$R = \left(\frac{2200\text{-}3x}{2}\right)x = \frac{2200x\text{-}3x^2}{2}$$

i) if firm output - 10,000 units per month

$$\text{Cost} = 10\left(\frac{100}{10} + 200\right) = 2100$$

$$MC = \frac{dc}{dx} = \frac{3x^2}{10} + 200$$

$$\text{Marginal Cost (at } x = 10) = \frac{3(100)}{10} + 200 = 230$$

ii) Here, MC = 320

$$\frac{3x^2}{10} + 200 = 320$$

$$3x^2 + 2000 = 3200$$

$$3x^2 = 1200$$

$$x^2 = 400$$

$$\sqrt{400} = 20$$

$$\text{Therefore, Total cost} = \frac{(20)^3}{10} + 200 \times 20 = 4800$$

iii) Marginal Revenue

$$= MR = \frac{dR}{dx} = \frac{2200}{2} - \frac{6x}{2}$$

$$= 1100 - 3x$$

iv) Total revenue at x = 10

is $\frac{2200 \times 10 - 3(100)}{2} = \frac{22000 - 300}{2} = \frac{21700}{2}$

$$= 10,850$$

Marginal Revenue $= 1100 - 3 \times 10 = 1070$

v) Given, MR = 1040

i.e. $1100 - 3x = 1040$

$-3x = -60$

$x = 20$

$$\text{Monthly Revenue} = \frac{2200 \times 20}{2} - \frac{3 \times 400}{2}$$

$$= 22000 - 600 = 21400$$

(b) Causes to analyse corporate distress:

1. Technological Causes:
   Traditional methods of doing work have been turned upside down by the development of new technology. If within an industry, there is failure to exploit information technology and new production technology, the firms can face serious problems and ultimately fail.
   By using new technology, cost of production can be reduced and if an organization continues to use the old technology and its competitors start using the new technology; this can be detrimental to that organization. Due to high cost of production, it will have to sell its products at higher prices than its competitors and this will consequently reduced its sales and the organization can serious problems.

2. Working Capital Problems:
   Organizations also face liquidity problems when they are in financial distress. Poor liquidity becomes apparent through the changes in the working capital of the organization as they have insufficient funds to manage their daily expenses.
   Businesses, which rely only on one large customer or a few major customers, can face severe problems and this can be detrimental to the businesses. Losing such a customer can cause big problems and have negative impact on the cash flows of the businesses.
   Besides, if such a customer becomes bankrupt, the situation can even become worst, as the firms will not be able to recover these debts.

3. Economic Distress:
   A turndown in an economy can lead to corporate failures across a number of businesses. The level of activity will be reduced, thus affecting negatively the performance of firms in several industries. This cannot be avoided by businesses.

4. Mismanagement:
   Inadequate internal management control or lack of managerial skills and experience is the cause of the majority of company failures. Some managers may

lack strategic capability that is to recognize strengths, weaknesses, opportunities and threats of a given business environment. These managers tend to take poor decisions, which may have bad consequences afterwards.

Furthermore, managers of different department may not have the ability to work closely together. There are dispersed department objectives, each department will work for their own benefits not towards the goal of the company. This will bring failure in the company.

5. Over-expansion and Diversification:
Research has shown that dominant CEO is driven by the ultimate need to succeed for their own personal benefits. They neglect the objective set for the company and work for their self-interest. They want to achieve rapid growth of the company to increase their status and pay level. They may do so by acquisition and expansion.
The situation of over expansion may arise to the point that little focus is given to the core business and this can be harmful as the business may become fragment and unfocused. In addition, the companies may not understand the new business field.

6. Fraud by Management:
Management fraud is another factor responsible for corporate collapse. Ambitious managers may be influenced by personal greed. They manipulate financial statements and accounting reports. Managers are only interested in their pay checks and would make large increase in executive pay despite the fact that the company is facing poor financial situation. Dishonest managers will attempt to tamper and falsify business records in order to fool shareholders about the true financial situation of the company. These fraudulent acts or misconduct could indicate a serious lack of control. These frauds can lead to serious consequences: loss of revenue, damage to credibility of the company, increased in operating expenses and decrease in operational efficiency.

7. Poorly Structured board:
Board of Directors is handpicked by CEO to be docile and they are encouraged by executive pay and generous benefits. These directors often lack the necessary competence and may not control business matters properly. These directors are often intimated by dominant CEO and do not have any say in decision making.

8. Financial Distress:
Firms that become financially distressed are found to be under- performing relative to the other companies in their industry. Corporate failure is a process rooted in the management defects, resulting in poor decisions, leading to financial deterioration and finally corporate collapse. Financial distresses include the following reasons also low and declining profitability, investment Appraisal, Research and Development and technical insolvency amongst others.

A firm may fail, as its returns are negative or low. A firm that consistently reports operating losses probably experiences a decline in market value. If the firm fails to earn are turn greater than its cost of capital, it can be viewed as having failed. Falling profits have an obvious link with both financial and bankruptcy as the firm finds it is not generating enough money to meet its obligations as they fall due.

Another cause that will lead the company to fail is the investment appraisal. Many organizations run into difficulties as they fail to appraise investment projects carefully. The long-term nature of many projects means that outcomes are difficult to forecast and probabilities are usually subjective.

4. (a) What is Risk Mapping? State the benefits of Risk Mapping. [10]

(b) (i) What do you understand by Strategic-level information systems, Tactical-level information systems and Operational-level information systems? [6]

(ii) "Control is maintained through the use of control charts." — State the Control chart for Attributes and Control chart for Variables. [4]

Answer:

4\. (a) Risk mapping is the process of identifying, quantifying and prioritizing the risks that may interfere with the achievement of organizational objectives.

Its aim is to arrive at a clear set of action plans that improve risk management controls, in areas where these are necessary and help the management of the organization's direct resources.

Risk mapping should start from process mapping and from identifying critical risks in each process phase, linked either to key people, to systems, to interdependencies with external players, or to any other resource involved in the process. Subsequently, potential effects of errors, failures or improper behavior should be analyzed. This may also lead to identifying priorities in terms of control actions. Of course, special care should be given to high-severity risks, even if they appear unlikely to occur.

Benefits of Risk Mapping:

- Promotes awareness of significant risks through priority ranking, facilitating the efficient planning of resources.
- Enables the delivery of solutions and services across the entire risk management value chain.
- Serves as a powerful aid to strategic business planning.
- Aids the development of an action plan for the effective management of significant risks.
- Assigns clear responsibilities to individuals for the management of particular risk areas.
- Provides an opportunity to leverage risk management as a competitive advantage.
- Facilitates the development of a strategic approach to insurance programme design.
- Supports the design of the client's risk financing and insurance programmes, through the development of effective/optimal retention levels and scope of coverage etc.

(b) (i) Strategic-level information systems: It helps senior management to tackle and address strategic issues and long-term trends, both within the firm and external environment. Their principal concern is matching changes in the external environment with existing organisational capability - What will be the cost- trends, where will our firm fit in, what products should be made etc ? In other words, these systems are designed to provide top-management with information that assists them in making long –range planning decisions for the organization.

Tactical-level information systems: It serves middle level managers and help in taking decisions for a period of 2-3 years. The managers are typically concerned with planning, controlling and use summaries of transactions to aid their decision-making. In other words, these systems provide middle-level managers with the information they need to monitor and control operations and to allocate resources more effectively. In tactical systems, transactions data are summarized, aggregated, or analysed. Their purpose is not to support the execution of operational tasks but to help the manager control these operations.

Operational-level information systems: These are typically transaction processing systems and help in the operational level managers to keep track of elementary activities and transactions of the organisations such as sales, receipts, cash deposits, flow of materials etc. Their purpose is to answer routine questions and to track flow of transactions. Thus, the primary concern of these systems is to collect, validate, and record transactional data describing the acquisition or disbursement of corporate resources.

(ii) Control chart for Attributes:

- P Charts – It measures proportion defective.
- C Charts - It measures the number of defects/unit.

Control chart for Variables:

X bar and R charts are used together - control a process by ensuring that the sample average and range remain within limits for both.

Section - B

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

5. Multiple choice questions: 10] [1 mark for right choice and 1 mark for working] [5x2=10]

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

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

(iii) Xetra Ltd. has ₹ 200 crores worth of common equity on its balance sheet comprising of 50 lakhs shares. The company's Market Value Added (MVA) is ₹48 crores. What is company's stock price?
(A) ₹ 460
(B) ₹ 476
(C) ₹496
(D) ₹528.

(iv) Alfa Ltd. acquires Beta Ltd. by exchange of shares. EPS of Alfa Ltd. is ₹ 50 and that of Beta Ltd. is of ₹ 40. Number of shares of Alfa Ltd. are 80,000 and of Beta Ltd. are of 50,000. What number of shares Alfa Ltd. requires to issue to Beta Ltd., in order to ensure that EPS of Alfa Ltd. would remain same after merger? (Assume that earnings of the merged company would be equal to the aggregate of the earnings of the companies before merger).

(v) The operating and cost data of Samriddhi Ltd. are: Sales ₹20,00,000 Variable Costs ₹14,00,000 and Fixed Costs ₹4,00,000 (including 15% interest on ₹10,00,000). Its operating leverage is:
(A) 1.71
(B) 2.71
(C) 3.71
(D) 4.71.

Answer:

5. (i) (D) 13.9%

Reason:

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

(ii) (D) ₹ 1,65,000

Reason:

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

(iii) (C) ₹ 496.

Reason:

₹ (200 + 48) crores / 50 lakhs
=₹ 496.

(iv) (C) ₹ 40,000.

Reason:

Earnings of Beta Ltd. / EPS of Alfa Ltd.
= 40 x 50,000/50
= ₹ 40,000.

(v) (A) 1.71.

Reason:

Sales – Variable Cost= 20,00,000-14,00,000= Contribution of ₹600,000.
Now, Contribution-Fixed Cost=600,000-250,000=EBIT of ₹350,000
Operating Leverage=Contribution/EBIT=600,000/350,000=1.714.

6. (a) Sparta manufacturing is financed by debt and equity to the extent of 3:7, with total debts of Rs 10.82 million. The company's debt is valued at 8%. The beta of the company's equity is known to be 1.5. The company generates a free cash flow ₹ 2 million with the known growth projection of 5% to perpetuity. If it is known that the market risk premium is 6% and the risk free rate is 5%, what is the value of each equity share for the 1 million shareholders of the company? Assume that the company is in the 40% tax bracket. 8+12

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

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

(ii) In addition to (i) above, the shareholders of Mumbai Ltd. will be paid in cash based on the projected synergy that will arise on the absorption of the business of Mumbai Ltd. by Kolkata Ltd. 50% of the projected benefits will be paid to the shareholders of Mumbai Ltd.

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

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

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

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

(II) 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)

Answer:

6. (a) It is given that:

FCF_1=2.00(1.05)=₹ 2.1 million; g=5%

B= 1.5; R_F=5%; (R_M-R_F)=6%=RP_M

Wd=30%; T=40%; Kd=8%

K_e=R_F + RP_M(β)=5% + 6%(1.5)= =14%.

WACC= W_dK_d(I-T) + W_eK_e

=0.30(8%) (0.60) + 0.70 (14%)

=11.24%.

Value of firm=FCF(1+g) /WACC-g=2.1/0.1124-0.05=₹ 33.65 million.

Value of Equity Shares= V_{Firm}-V_{debt}=33.65-10.82=₹ 22.83 million.

Price= 22.83 million/1 million shares=₹22.83 per share.

(b) (I) Present Value of Synergy Benefits

Year	Computation	PV=₹ Lakhs
2014	50 x 0.833	41.65
2015	75 x 0.694	52.05
2016	90 x 0.579	52.11
2017	100 x 0.482	48.20
2018	105 x 0.402	42.21
2019 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%=₹ 237.705 lakhs

Cash for every share held in Mumbai Ltd. =237.705 ÷10 = ₹ 23.77

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

(II) Total Purchase Consideration for the business

(a) Equity Share (25/50 x 10,00,000 x ₹ 50)	₹ 250.00 lakhs
(b) Cash= 50% of Synergy Benefits	₹ 237.70 lakhs
Total	**₹ 487.70 lakhs**

7. (A) Damodar Ltd. is considering takeover of Narmada Ltd. & Bhagirathi Ltd. The financial data for the three companies are as follows:

Particulars	Damodar Ltd.	Narmada Ltd.	Bhagirathi Ltd.
Equity share capital of ₹ 10 each (crores)	**450**	**180**	**90**
Earnings (₹ crores)	**90**	**18**	**18**
Market price of each share (₹)	**60**	**37**	**46**

Calculate:

(a) Price earnings ratio

(b) Earnings per share of Damodar Ltd. after the acquisition of Narmada Ltd. separately. Will you recommend the merger of either / both of the companies? Justify your answer. 10+10

(B) You are given following information about Sandeep Ltd.

i) Beta for the year 2015-161.05

ii) Risk free rate 12%

iii) Long Range Market Rate (based on BSE Sensex) 15.14%

iv) Extracts from the liabilities side of balance sheet as at 31st March, 2016

	₹
Equity	**29,160**
Reserve & Surplus	**43,740**
Shareholder's Fund	**72,900**
Loan Funds	**8,100**
Total Funds (Long term)	**81,000**

v) Profit after tax ₹ 20,394 .16 lakhs

vi) Interest deducted from profit ₹487.00 lakhs

vii) Effective tax rate (i.e. Provision for Tax/PBT x 100) 24.45%

Calculate Economic values Added of Sandeep Ltd. as on 31st March 2016. 8

Answer:

7. (A) (a) Calculation of Price Earning Ratios

Particulars	Damodar Ltd.	Narmada Ltd.	Bhagirathi Ltd.
Earnings (₹ crores)	90	18	18
No. of shares (crores)	45	18	9
EPS (₹)	2	1	2
Market Price of each share (₹)	60	37	46
PE Ratio (MPS÷EPS)	30	37	23

(b) Calculation of EPS of Damodar Ltd. after acquisition of Narmada Ltd. & Bhagirathi Ltd.

Exchange ratio or rate=Buyer's P/E Ratio / Seller's P/E/Ratio

Particulars	Damodar Ltd.	Narmada Ltd.	Bhagirathi Ltd.
Exchange ratio in Damodar Ltd.	--	0.81	1.30
Value of shares (₹ crores) (MPS X No. of Equity Shares)	2700	666	414
No. of Damodar Ltd.'s share to be given (crores)	--	666/60	414/60
EPS (₹)	--	11.10	6.9
Total earnings after acquisition (₹ crores)	--	108	108
Total number of shares (crores)	--	56.1	51.9
EPS after acquisition (₹)	--	1.93	2.08

Analysis: After merger of Bhagirathi Ltd. with Damodar Ltd.'s EPS is higher than Damodar Ltd. (₹ 2.08). Hence, merger with only Bhagirathi Ltd. is suggested to increase the value to the shareholders of Damodar Ltd..

(B) We know that EVA = NOPAT –Cost of Capital Employed

Where, EVA= Economic Value Added

NOPAT = Net Operating Profit after tax

Required calculations are as follows:

NOPAT:

Profit after tax	₹20,394.16 lakhs
Add-Interest Nett of Tax[(₹487 lakh(1-0.2445)]	₹ 367.93 lakhs
NOPAT	₹ 20,726.09 lakhs

Cost of Equity:
Cost of Equity = Risk free rate + β [Market rate –Risk free return]
=12%+10.5 x [15.14%-12.00%]
=12% + 3.30%
=15.30%.

Cost of Debt:
Cost of Debt = Interest on Loan Funds (1-Tax Rate) /Loan Funds x 100
= 487 x (1-0.2445) / 8100 x100
=4.54%.

Weighted Average Cost of Capital:

	Amount in Lakhs (₹)	Weight	Cost	WACC%
Equity Debt	72,900	0.90	15.30	13.77
	8,100	0.10	4.54	0.45
	81,000	1.00		14.22

Cost of capital employed
=₹ 81,000 x 14.22%
= 11,518.20 lakhs

EVA = NOPAT –Cost of Capital Employed
= ₹ 20,726.09 lakhs - ₹ 11,518.20 lakhs
= ₹ 9,207.89 lakhs.

8. (a) **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 31.03.2016

Liabilities	Amount (₹)	Asset	Amount (₹)
Share Capital (@ ₹10 fully paid up share)	10,00,000	Goodwill	1,00,000
Reserve & Surplus	4,00,000	Land & Bldg.	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.

(b) 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 × 12.5%)	**37,50,000**

Answer:

8. (a)

Valuation of Goodwill	Amount (₹)
Capital employed on 31st March,2016	
Land & Bldg.	9,00,000
Plant & Machinery	10,00,000
Stock	2,00,000
Debtors	1,50,000
Cash in Bank	50,000
Less- Sundry Creditors	(3,00,000)

Average maintainable Trading Profit for the year ended 31.03.2016

	Amount(₹)	Amount(₹)
Net Profit Before Tax		600,000
Less- Depreciation	40,000	
Less- Additional Recurring Expenses	50,000	
Less- Non operating earning (Interest on investment)	10,000	1,00,000
Adj. NP Provision for Taxation @ 30% of ₹ 5,40,000 (Further Depreciation provided is not tax deductable)		5,00,000 162,000
Average Maintainable Profit		3,38,000
Closing Capital Employed 31.03.2016 Less- 50% of Average Maintainable Profit		20,00,000 169,000
Average Capital Employed		18,31,000
Average Maintainable Profit Less- Normal Profit, 14% on Capital Employed (₹ 18,31,000)		3,38,000 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**

(b)

Maximum Salary Payable:

Capital Base	300.00
Target Profits (Capital Base x 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 Profit	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.