Paper 20 - Strategic Performance Management & Business Valuation

Paper 20 - Strategic Performance Management & Business Valuation

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: Strategic Performance Management

PART – I
Answer Question Number 1 which is compulsory

1. Multiple choice questions: [5×2=10]
[1 mark for right choice and 1 mark for justification]

(i) _____ deals with the portion of security's total variability of returns that derives from the possibility that the issue may be called or redeemed before maturity, is called:
(a) Default Risk
(b) Operational Risk
(c) Industry Risk
(d) Callability Risk

(ii) If, output is 5 units for the given function C = (3x/5) + (15/4):, then what would be the cost?
(a) 6.75
(b) 12.25
(c) 8.40
(d) None of the above.

(iii) In order to obtain the equilibrium position of an industry under perfect competition. Which of the following condition is not correct?
(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.

(iv) Internal Quality Costs for quality management includes _____.
(a) Prevention Costs
(b) Appraisal Costs
(c) Failure Costs
(d) All of the above.

(v) Under Statistical Quality Control, the control chart which measures the proportion defective, is_____.
(a) C Charts
(b) R charts
(c) P Charts
(d) X bar charts.

Answer 1:

(i) (d) Callability Risk is that portion of security's total variability of returns that derives from thepossibility that the issue may be called or redeemed before maturity. Callability risk commands a risk premium that comes in the form of a slightly higher average rate of return. This additional return should increase as the risk increases.

(ii) (a) Given function $C = \frac{3}{5}x + \frac{15}{4}$

cost when output is 5 units = 3/5×5+15/4 = 6.75

(iii) (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.

(iv) (d) Internal Quality Costs are consist of Prevention Costs, Appraisal Costs and Failure Costs.

(v) (c) P Charts measures proportion defective. C Charts measures the number of defects/unit. X bar and R charts are used together to control a process by ensuring that the sample average and range remain within limits for both.

PART – II

Answer any Two questions from question numbers 2 to 4. Each question carries 20 marks

[2x20= 40]

2. (a) (i) Explain the different approaches used for measurement of Productivity and Efficiency in Performance Management. [6]

(ii) How Customer Relationship Management (CRM) is used as a strategy in different areas for its improvement? [4]

(b) Define MRPI and its any three objectives. What are the data requirements for the operation of a MRP system? [2+3+5=10]

Answer: 2

(a) (i) Basically, for a single firm that produces one output using a single input, the ratio of output to input is a measure of the productivity level. In this case, productivity is relatively easy to measure. However, in the case of many outputs and many inputs in a production process, the measurement of an output- input ratio is difficult. Hence, many different approaches have been applied by many researchers to the measurement of productivity and efficiency changes in various types of institutions, and levels of DMUs (Decision Making Units) as well. Further, different approaches to productivity measurement give different numeric answers. Therefore, it is essential to select appropriate measurements for productivity and efficiency to avoid measurement bias in the results.

The various approaches to the measurement of productivity and efficiency identified from the literature. In general, productivity and efficiency can be measured on a 'Partial' factor or 'Total' factor basis. Partial Factor Productivity (PFP) refers to the change in output owing to the change in the quantity of one input, whereas Total Factor Productivity (TFP) refers to the change in output owing to changes in the quantity of more than one input. Examples of PFP are material yield, output per man- hours, etc. A comprehensive example of TFP is Return on Investment (ROI) or overall profitability index which can be broken up into several parts through product profitability and capital turnover rate.

In general, in an industrial context, goods and services are produced by a combination of many factors or inputs. The output of goods and services cannot be used as a measure of the productivity of any one of the inputs. The output is only a measure of the joint power of inputs to achieve results. This is the main disadvantage of measuringproductivity and efficiency using the PFP approach. To overcome this shortcoming of PFP, TFP has been developed. TFP measures overall productivity and efficiency by considering all inputs and all outputs in the production process. With full technical efficiency, producing maximum potential output from the allocated inputs.

(ii) Customer Relationship Management (CRM) enables businesses to:

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

Answer: 2 (b)

Materials Requirement Planning (MRP or MRP I) is a technique which aims at to ensure that material resources - raw materials bought-in components and in-house sub- assembles - are made available just before they are needed by the next stage of production or despatch. It is basically a system which controls system of inventory so thatup-to-date records of the status of a large number of items in inventory can be kept. MRP takes care of the timely phasing of requirements, planned order releases, generation of component level requirements and rescheduling capability. The ability of the MRP systemis to deliver what is required in correct place at the correct time will be dependent on thequality of the information which is put into the computer model.

The basic objectives of MRP are as follows:

- It determines the quality and timing of finished goods demanded.
- It determines time phased requirements of the demand for materials, componentsand sub-assemblies over a specified planning time horizon.
- It computes the inventories, work-in-progress batch sizes and manufacturing andpacking lead times.
- It controls inventory by ordering components and materials in relation to ordersreceived rather than ordering them from stock level point of view.

MRP originated in the early 1960s as a computerised approach for coordinating the planning, acquisition and production of materials. Important requirements for the operation of a MRP system are as follows:

1. Master Production Schedule - It specifies the quantity of each finished unit ofproducts to be produced along with the time at which each unit will be required.
2. Bill of Material File- This file specifies the sub-assemblies, components and materialsrequirement for each item of finished goods.
3. Inventory File - It maintains details of items in hand fo^ each sub-assemblies, components and materials required.
4. Routing File - This file specifies the sequence of operations required to manufacturecomponents, sub-assemblies and finished goods.
5. Master Parts File - It contains information about the production time of sub-assembliesand components produced internally and lead time for externally procured items.

3.(a) Cost of production of 'x' items is ₹ Y given by Y = 2x + 1000 . If, the manufacturer can sell 'x' items per months at price P= 300- 2x, then calculate the no of items to be produced to yield maximum profit per month. [10]

(b) Calculate Z-score of S & Co. Ltd., where the five accounting ratios are as follows and comment about its financial position (Using Altman's Multiple Discriminant Function).
Working Capital to Total Assets = 0.250
Retained Earnings to Total Assets = 50%
EBIT to Total Assets = 19%
Book Value of Equity to Book Value of Total Debt = 1.65
Sales to Total Assets = 3 times. [10]

Answer: 3 (a)

Units = x

Price = $300 - 2x$

Revenue (R) = $Px = 300x - 2x^2$

Cost (C) = $2x + 1000$

Profit (z) = $300x - 2x^2 - 2x - 1000$

$-2x^2 + 298x - 1000$

$\frac{dz}{dx} = -4x + 298 = 0$

$-4x = -298$

$x = \frac{298}{4} = 74.5$

$\frac{d^2z}{dx^2} = -4$ which is Negative

$\frac{d^2z}{dx^2} = <0$

∴ Profit is maximum at x = 74.5 units

Answer: 3 (b)

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

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

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

Here, the five variables are as follows:

X_1 = Working Capital to Total Assets = 0.250 X2 = Retained Earnings to Total Assets = 0.50

X_3 = EBIT to Total Assets = 0.19

X_4 = Book Value of Equity Shares to Book Value of Total Debt = 1.65

X_5 = Sales to Total Assets = 3 times

Hence, Z-score = (0.717 x 0.25) + (0.847 x 0.50) + (3.107 x 0.19) + (0.420 x 1.65) + (0.998 x 3)

= 0.17925 + 0.4235 + 0.59033 + 0.693 + 2.994 = 4.88

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

4. (a) Define Risk. What are the Economic actors that are concerned with the economic climate of country? [3+7=10]

(b) How the three elements of MIS are correlated to each other ? [10]

Answer: 4 (a)

A risk is a random event that may possibly occur and, if it did occur, would have a negative impact on the goals of the organization. It is the probability of incurring loss dueto unexpected and unfavorable movement of certain parameters.

Risk is composed of three elements — the scenario, its probability of occurrence, and the size of its impact if it did occur (either a fixed value or a distribution). Risk is thus measured by volatility.

In the corporate world, accepting risks is necessary to obtain a competitive advantage and generate profit. Introducing new product or expanding production facilities involves both return and risk. When a company is exposed to an event that can cause a shortfall in a targeted financial measure or value, this is financial risk.

The factors which reflect the economic climate of a country are:

1. level of affluence enjoyed by the country.
2. the growth rate of income.
3. the nation's propensity to save/invest.
4. the stability of prices (inflation).
5. characteristics of the labour force.
6. level of sophistication of the financial system.
7. level of foreign debt outstanding.
8. major income earners (exports) and their sensitivity to overall global economicchanges.
9. extent of dependence on major export items.
10. trends in balance of payments.
11. level of imports
12. level of reserve and credit standing, and
13. fluctuations of exchange rate and controls on foreign exchange.

Answer: 4 (a)

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 thelaid 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 toplans.

Thus, management comprises of the processes or activities that describe what managers do while working in their organisation. They in fact plan, organise, initiate, and control operations. In other words, management refers to a set of functions and processes designed to initiate and co-ordinate group efforts in an organised setting directed towards promotion of certain interests, preserving certain values and pursuing certain goals. It involves mobilisation, combination, allocation and utilisation of physical, human and other needed resources in a judicious manner by employing appropriate skills, approaches and techniques.

Information: Information is data that have been organised into a meaningful and useful context. 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.

Data is the input, information is the output. Data-analysis or information-processing converts data into information. Therefore, quality of data influences quality of information based on which management makes business decisions and translates these into actions through appropriate processes. Today, Information & Communication Technology (ICT) also partakes in various processes with interfacial digital devices and local & global networks. Some of these are stated below:

- Bar Coding & Decoding (used in inventory management).
- Programmable Logic Controller or PLC (used for monitoring work-flow and machineconditions).
- General Pocket Radio system or GPRS (used in LAN for controlling fleet of mobile equipments. Sometimes vehicles are provided with sensors for recording work load,fuel stock, etc).
- Face Recognition System or FRS (used for recording attendance of employees by recognizing faces photographed in the system).
- Computer Aided Designing or CAD and Digital Surveying.
- Computer Aided Manufacturing or CAM.
- E-commerce (used in online bidding, ordering, invoicing, banking, etc), etc.
- Enterprise Resource Planning (ERP): Integrated information has achieved a different dimension with the advent of ERP systems by the end of 20th century. Several data(financial and non-financial) including those downloaded online or offline from the above systems, can be integrated into ERP system. Let us take the following examples –

    1. Online invoicing and inventory records are facilitated by e-Commerce and BarCoding & Decoding.
    2. Order fulfillment in both Purchasing and Selling can be monitored on integrationof purchase orders and sales orders with goods receipts and issues in inventoryrecords for stores and finished goods. Likewise, indents for stores and finished goods can be tracked against respective orders.
    3. FRS can used to migrate attendance data into Pay Roll system for calculation ofemployee-wise wages & salary including overtime and for

updating leaverecords.

4. Plenty of data downloaded from PLC and GPR systems can be built-up in integrated information (e.g. work completed, work-in-progress, equipment running hours, power or fuel & lubricant consumptions, vehicle trips, breakdowns, machine conditions in terms of temperature, stress, vibrations, noise level, etc).

System: System may be defined as a composite entity consisting of a number of elementswhich 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 –livingll. 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.

Thus, MIS can be defined as a network of information that supports management decision making. The role of MIS is to recognise information as a resource and then use itfor effective and timely achievement of organisational objectives.

Section – B: Business Valuation

PART – I

Answer Question Number 5 which is compulsory

5. Multiple choice questions: [5×2=10]

[1 mark for right choice and 1 mark for justification]

(i) Find out the return on Equity when the company has a market to book value ratio of 2.10 and P/E ratio is of 12.

(a) 14.10%
(b) 17.50%
(c) 25.20%
(d) None of the above.

(ii) A company has presently beta of 0.84 and its going to finance its new project through debt. This would increase its debt/equity ratio to 1.56 from the existing 1.26. Due to increased debt/equity ratio, the company's beta would be_____.

(a) increase
(b) decrease
(c) remain unchanged
(d) nothing can be concluded.

(iii) Yied to maturity on the bond increases, when during of a bond_____.

(a) Decrease
(b) Increase
(c) not change
(d) all three above are possible

(iv) If, the investment is risk free the actual returns are always _____ than expected returns.
- **(a) Equal to**
- **(b) Less than**
- **(c) More than**
- **(d) Depends upon circumstances.**

(v) What are the value drives based on which economic margin frame work encompasses on?
- **(a) Profitability**
- **(b) growth**
- **(c) cost of capital**
- **(d) All of the above**

Answer: 5

(i) (b) Return on Equity will be 17.5% (= 2.10/12)

(ii) (c) Remain unchanged (Because as per CAPM the company specific risk has no impacton the systematic risk).

(iii) (a) Duration of a bond has a negative or inverse relation with YTM (Yield-to-Maturity).Higher the YTM, lower will be the duration of a bond hence duration of a bond will - Decease.

(iv) (a) equal to, as risk free investments give an assured fixed rate of return like governmentsecurities, where interest and principal repayment is guaranteed by the Central /State Government.

(v) (d) Economic margin focuses on economic profit. It encompasses on four main valuedrives - profitability, competition, growth, and cost of capital.

PART – II

Answer any Two questions from question numbers 6 to 8. Each question carries 20 marks. [2x20= 40]

6.(a)(i) TV Ltd. is planning to raise funds through issue of common stock for the first time. As, the management of the company is not sure about the value of the company and, therefore, they attempted to study similar companies in the same line which are comparable to TV in most of the aspects.

You are required to compute the value of TV Ltd. using the comparable firms approach from the information given below.

(₹ in crores)

Company	TV Ltd. (₹)	JV Ltd. (₹)	RV Ltd. (₹)	UV Ltd. (₹)
Sales	250	190	210	270
Profit after tax	40	30	44	50
Book value	100	96	110	128
Market value		230	290	440

TVL feels that 50% weightage should be given to earnings in the valuation process; sales and book value may be given equal weightages. [8]

(ii) From the following details, calculate Free Cash Flow to Firm (FCFF) for a company: Sales - ₹10,00,000; Costs - ₹7,50,000; Depreciation - ₹2,00,000; Tax - 35%; Change in Net Working Capital - ₹10,000; Change in Capital Spending - ₹1,00,000. [2]

(b) Following are the information of two companies for the year ended 31st March, 2022:

Particulars	Company A	Company B
Equity Shares of ₹ 10 each	8,00,000	10,00,000
10% Pref. Shares of ₹ 10 each	6,00,000	4,00,000
Profit after tax	3,00,000	3,00,000

Assume the Market expectation is 18% and 80% of the Profits are distributed.

(i) How much you would pay to the Equity Shares of each Company for each share?

(1) If you are buying a small lot.

(2) If you are buying controlling interest shares.

(ii) If you plan to Invest only in preference shares which company's preference shares would you prefer?

(iii) Would your rates be different for buying small lot, if the company 'A' retains 30% and company 'B' 10% of the profits? [5+2+3=10]

Answer: 6

(a)(i) The valuation multiples of the comparable firms are as follows:

Particular	JV Ltd.	RV Ltd.	UV Ltd.	Average
Prices/Sales ratio (Working Note)	1.21	1.38	1.63	1.41
Price/Earnings ratio (Working Note)	7.67	6.59	8.80	7.69
Price/Book value ratio (Working Note)	2.40	2.64	3.44	2.83

Applying the multiples calculated as above, the value of TV Ltd. can be calculated as follows:

Particular	Multiple Average	Parameter (₹ cr.)	Value (₹ cr.)
Prices/Sales	1.41	250	352.50
Price/Earnings	7.69	40	307.60
Price/Book value	2.83	100	283.00

By applying the weightage to the P/S ratio, P/E ratio and P/BV ratio we get:

[(352.50 x 1) + (307.60 x 2) + (283.00 x 1)] / (1+2+1) = 312.675, i.e. ₹ 312.675 crores is the value.

Alternative:
₹ (352.50 × 0.25 + 307.60 × 0.50 + 283.00 × 0.25) crores = ₹ 312.675 crore.

Working Notes:

Price/ Sales Ratio = Market Value/ Sales

Price/ Earnings Ratio = Market Value/ Profit after tax

Price/ Book value ratio = Market Value/ Book Value

(ii) The Free Cash Flow to Firm (FCFF) for the given data can be calculated as follows:

Sales - Costs - Depreciation	₹ 50,000
Less: Tax	₹ 17,500
PAT	₹ 32,500
Add: Depreciation	₹ 2,00,000
Less: Change in Net Working Capital	₹ 10,000
Less: Change in Capital Spending	₹1,00,000
Free Cash Flow to Firm (FCFF)	₹1,22,500

(b)(i)(1) Buying a small lot of equity shares: If the purpose of valuation is to provide data base to aid a decision of buying a small (non-controlling) position of the equity of the companies, dividend capitalisation method is most appropriate. Under this method, value of equity share is given by:

$$\frac{\text{Dividend per share}}{\text{Market capitalisation rate}} \times 100$$

$$\text{Company A}: \frac{₹2.4}{₹18} \times 100 = ₹13.33$$

$$\text{Company B}: \frac{₹2.08}{₹18} \times 100 = ₹11.56$$

(2) Buying controlling interest equity shares: If the purpose of valuation is to provide data base to aid a decision of buying controlling interest in the company, EPS capitalisation method is most appropriate. Under this method, value of equity is given by:

$$\frac{\text{Earning per share (EPS)}}{\text{Market capitalisation rate}} \times 100$$

$$\text{Company A}: \frac{₹3}{₹18} \times 100 = ₹16.67$$

$$\text{Company B}: \frac{₹2.6}{₹18} \times 100 = ₹14.44$$

(ii) Preference Dividend coverage ratios of both companies are to be compared to makesuch decision. Preference dividend coverage ratio is given by:

$$\frac{\text{Profit after tax}}{\text{Preference Dividend}} \times 100$$

$$\text{Company A}: \frac{₹3,00,000}{₹60,000} = 5 \text{ times}$$

$$\text{Company B}: \frac{₹3,00,000}{₹40,000} = 7.5 \text{ times}$$

If we are planning to invest only in preference shares, we would prefer shares of BCompany as there is more coverage for preference dividend.

(iii) Yes, the rates will be different for buying a small lot of equity shares, if the company 'A' retains 30% and company 'B' 10% of profits.

The new rates will be calculated as follows:

Company A: ₹2.1/₹18 x 100 = ₹11.67
Company B: ₹2.34/₹18 x 100 = ₹13.00

Working Notes:

1. Computation of earnings per share and dividend per share (companies distribute 80%of profits)

Particulars	Company A	Company B
Profit after tax	3,00,000	3,00,000
Less: Preference dividend	60,000	40,000
Earnings available to equity shareholders (A)	2,40,000	2,60,000
Number of Equity Shares (B)	80,000	1,00,000
Earnings per share (A/B)	3.0	2.60
Retained earnings 20%	48,000	52,000
Dividend declared 80% (C)	1,92,000	2,08,000
Dividend per share (C/B)	2.40	2.08

2. Computation of dividend per share (Company A retains 30% and Company B 10% ofprofits)

Earnings available for Equity Shareholders	2,40,000	2,60,000
Number of Equity Shares	80,000	1,00,000
Retained Earnings	72,000	26,000
Dividend Distribution	1,68,000	2,34,000
Dividend per share	2.10	2.34

7.(a) K Ltd. and B Ltd. have agreed that K Ltd. will take over the business of M Ltd. with effect from 31st December, 2021. It is agreed that:

(i) 10,00,000 shareholders of M Ltd. will receive shares of K Ltd. The Exchange 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 K Ltd. and M Ltd. respectively.

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

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

Year	2022	2023	2024	2025	2026
Benefit ₹ (in lakhs)	50	75	90	100	105

The benefit is estimated to grow at the rate of 2% from 2026 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 M Ltd. will receive.

- **How much cash that each shareholder of M Ltd. will receive for each share?**
- **Find out the total purchase consideration.**

(Discounting Rate 20%: 1 year-0.833, 2 year-0.694, 3 year-0.579, 4 year-0.482, 6 years-0.335). [7+3=10]

(b) The following information is provided in relation to the acquiring firm M Ltd. and the target firm P Ltd.

Particulars	M Ltd.	P Ltd.
Earnings after tax (₹)	200 lakhs	40 lakhs
Number of shares outstanding	20 lakhs	10 lakhs
P /E Ratio	10	5

Required:

(i) What is the exchange ratio in terms of current market price?

(ii) What is the EPS of M Ltd. post acquisition?

(iii) What is the expected market price per share of M Ltd. post acquisition assuming that P / E ratio of M Ltd. remains unchanged?

(iv) Determine the market value of the merged firm. [10]

Answer: 7.(a)

(i) Present Value of Synergy Benefits

Year	Computation	PV = ₹ Lakhs
2022	50 x 0.833	41.65
2023	75 x 0.694	52.05
2024	90 x 0.579	52.11
2025	100 x 0.482	48.20
2026	105 x 0.402	42.21
2027 onwards (Terminal Value Note)	(105 x 102% ÷18%) x 0.402	239.19
Total		475.41

50% on the Synergy Benefits = ₹ 475.41lakhs x 50% = ₹ 237.705 lakhs for the business Cash for every share held in M Ltd. = ₹ 237.705 lakhs ÷10 lakhs = ₹ 23.77

(ii) Total Purchase Consideration:

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

(b)

Particulars	M Ltd.	P Ltd.
Earnings after tax (₹)	200 lakhs	40 lakhs
Number of shares outstanding	20 lakhs	10 lakhs
P / E Ratio	10	5
EPS	10	4
Market price (₹)	100	20

(i) Swap ratio in terms of market prices: 20/100 = 0.20

(ii) EPS of M Ltd. after acquisition: (200 + 40) / (20 + 0.2×10) = 240/22 or say ₹10.91

(iii) Expected market price per share of M Ltd. with the same P/E ratio of 10 will be:10.91 × 10 = ₹109.10

(iv) Market value of merged firm: Total number of outstanding shares × market price = ₹ 2,400.2 lakhs.

8.(a) From the given information of A ltd. Calculate Economic Value Added of A Ltd. as on 31.03.2022

(i) Beta for the year 2021-22 is 1.05

(ii) Risk free rate 12%

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

(iv) Interest deducted from profit ₹487.00 lakhs

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

(vi) Profit after tax ₹ 20,394 .16 lakhs

(vii) Extracts from the liabilities side of balance sheet as at 31st March, 2019

	₹
Equity	**29,160**
Reserve & Surplus	**43,740**
Shareholder's Fund	**72,900**

Loan Funds	**8,100**
Total Funds (Long term)	**81,000**

[10]

(b) M Ltd. wants to acquire L Ltd. and has offered a Exchange ratio of 1:2 (0.5 shares of M Ltd. for every one share of L Ltd.). Following information's are provided:

	M Ltd.	L Ltd.
Profit after tax	**₹ 18,00,000**	**₹ 3,60,000**
Equity shares outstanding (Nos.)	**6,00,000**	**1,80,000**
EPS	**₹ 3**	**₹ 2**
P/E ratio	**10 times**	**7 times**
Market price per share	**₹ 30**	**₹ 14**

Required:

(ii) The number of equity shares to be issued by M Ltd. for acquiring L Ltd.

(iii) What is the EPS of M Ltd. post acquisition?

(iv) Determine the market price per share of M Ltd. Post acquisition considering the same P/E ratio.

(v) Calculate the market value of the merged firm. [10]

Answer: 8 (a)

We know that EVA = NOPAT – Cost of Capital EmployedWhere, 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 Net of Tax[(₹ 487 lakhs (1-0.2445)]	₹ 367.93 lakhs
NOPAT	₹ 20,762.09 lakhs

Cost of Equity:
Cost of Equity = Risk free rate + β [Market rate – Risk free return]
=12%+1.05 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 x 100 = 4.54%.

Weighted Average Cost of Capital:

	Amount in Lakhs (₹)	Weight	Cost	WACC%
Equity	72,900	0.90	15.30	13.77
Debt	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
= ₹ 20,762.09 lakhs - ₹ 11,518.20 lakhs
= ₹ 9,243.89 lakhs.

Answer: 8 (b)

(i) The number of shares to be issued by M Ltd. —
1,80,000 × 0.5 = 90,000 shares

(ii) EPS of M Ltd. after acquisition —
Total earnings (₹ 18,00,000 + ₹ 3,60,000) = ₹ 21,60,000
No. of shares (6,00,000 + 90,000) = 6,90,000

EPS = ₹21,60,000 / 6,90,000 = ₹3.13

(iii) New market price of M Ltd. (P/E ratio remains unchanged)

Present P/E ratio of M Ltd.	10 times
Expected EPS after merger	₹ 3.13
Expected market price (₹ 3.13 × 10)	= ₹ 31.30

(iv) Market value of merged firm:

Total no. of shares	6,90,000
Expected market price	₹ 31.30
Total value (6,90,000 × ₹ 31.30)	₹ 2,15,97,000