Paper – 20: Financial Analysis & Business Valuation

Time Allowed: 3 hours **Full Marks: 100**

Working Notes should form part of the answer.

"Whenever necessary, suitable assumptions should be made and indicated in answer by the candidates."

Section A
(Answer Question No. 1 and Question No. 2 which are compulsory and any two from the rest in this section)

Question 1.

Gyan Co. Ltd.
The summarized Balance Sheets of the Company for the past two years are as under:

	(In lakh of ₹)			
	As at 31.03.2013		As at 31.03.2012	
Share Capital and Liabilities:				
Share Capital		75.00		50.00
Cash Credit Loan from Bank @ 16.5% Int.		80.00		100.00
Working Capital Term Loan from Bank @ 16.5% Int.		20.00		---
Unsecured Inter-corporate Loan @ 18% Interest		60.00		---
		235.00		150.00
Assets:				
Fixed Assets Less Depreciation		35.00		37.00
Current Assets				
Inventories including WIP	100.00		70.00	
Debtors	60.00		30.00	
Cash/Bank	10.00		10.00	
	170.00		110.00	
Less: Current Liabilities				
Creditors	120.00		140.00	
Advances etc.	60.00		60.00	
	180.00	(10.00)	200.00	(90.00)
Profit and Loss A/c		210.00		203.00
		235.00		150.00

The following additional information is available:

(i) Sales and Profitability for the past two years are as under:

	(In ₹ Lakh)	
	Sales	Profit/(Loss)
2011-12	100	(150)
2012-13	350	(7)

(ii) By introducing some new products, for which no additional capital expenditure is involved, but Working Capital will be necessary, the company is expecting a 20% growth in sales volume every year and 10% profit (before interest) on sales.

You are required to answer the following questions:

(a) What are the possible causes of industrial sickness in relation to production management, labour management, marketing management and financial management?

(b) Write a comparative study of the financial statement on the basis of working capital, sales and loss.

(c) What are the potentialities the company has in making profits in future if only inter-corporate debt is considered?

[6+3+6]

Answer:

(a) Sickness is thrust upon some industrial units due to change in Government policy, over-spending on essentials, absence of control on borrowings,, dishonest practices on the part of the management etc. the causes of sickness may vary from unit to unit. But the common causes may be grouped as under:

(i) **Production management**: - Inappropriate product mix, poor quality control, high cost of production, poor inventory management, inadequate maintenance and replacement, lack of timely and adequate modernisation, etc., high wastage, poor capacity utilisation.

(ii) **Labour management**: - Excessively high wage structure, inefficient handling of labour problems, excessive manpower, poor labour productivity, poor labour relations, lack of trained/skilled personnel.

(iii) **Marketing management**: - Dependence on a single customer or a limited number of customers/single or a limited number of products, poor sales realisation, defective pricing policy, booking of large orders at fixed prices in an inflationary market, weak market organisation, lack of market feedback and market research, lack of knowledge of marketing techniques, unscrupulous sales/purchase practices.

(iv) **Financial management**: - Poor resources management and financial planning, faulty costing, liberal dividend policy, general financial indiscipline and application of funds for unauthorized purposes, deficiency of funds, over-trading, unfavourable gearing or keeping adverse debt-equity ratio, inadequate working capital, absence of cost consciousness, lack of effective collection machinery etc.

(b) (i) A sum of ₹ 20 lakh has been converted into a working capital term loan from cash credit loan. This shows that the company has already exhausted its limits from the bank and it can expect little assistance from bank by way of working capital.

(ii) There has been a substantial increase in sales in 2012-13 as compared to 2011-12. The increase is 250%.

(iii) The amount of loss has also come down considerably. The loss is only ₹ 7 lakh in 2012-13 as compared to a loss of ₹ 150 lakh in 2011-12. There is almost 100% decline in loss.

(c) The above analysis shows that the company has immense potentialities of making profits in future. As a matter of fact if interest of ₹ 10.80 lakh on inter-corporate loan is excluded, the company has made a profit of ₹ 3.80 lakh. The interest rate of 18% for inter-corporate loan seems to be very high as compared to 16.5% charged by the Bank.

The company has achieved a growth in sales of ₹ 250 lakh by arranging an inter-corporate loan of ₹ 60 lakh. The company expects a growth in sales of 20% every year. On this basis it can be estimated that the company will require an additional funds of ₹ 12 lakh (i.e., 20% of ₹ 60 lakh) every year.

The sister companies may be approached by the company to grant a further loan of ₹ 12 lakh. They may be requested to charge a concessional interest rate of 10% on the total loan outstanding. This loan together with the existing loan may be agreed to be paid by the company in convenient installments after the expiry of say 5 years when the company is expected to be out of woods.

In order to meet the additional working capital requirements for the year 2014-15 and 2015-16, it is presumed that the bank will grant cash credit limits of ₹ 5 lakh each year at the existing terms. Any further additional requirements of working capital will be met by the company out of its internal resources. Necessary arrangement with the sister companies and the banks will have to be made for providing the necessary assistance and support during this period.

Question 2.

Aryaan Company Ltd.

(i) Selected financial statistics

Particulars		**(₹ in lakhs) (Index Base Year 1 = 100)**	
	Year 10 (Index)	**Year 9 (Index)**	**Year 8 (Index)**
Total income	**10,615(498)**	**9,093 (427)**	**8,280 (389)**
Depreciation	**225(479)**	**126 (268)**	**101(215**
Profit before tax	**803(453)**	**815 (46)**	**540 (305)**
Taxation	**405 (526)**	**474 (616)**	**315 (409)**
Profit after tax	**398 (398)**	**341 (341)**	**225 (225)**
Dividend	**91(260)**	**91 (260)**	**70 (200)**
Retained profit	**307 (473)**	**250 (385)**	**155 (238)**
Fixed assets	**1,655 (338)**	**991 (202)**	**914 (187)**
Investments	**177 (385)**	**165(358)**	**165 (358)**

Indebtedness	1,097 (213)	885 (172)	760 (148)
Share capital	917 (321)	603(211)	603 (211)
Reserves	806 (413)	795(408)	615 (315)
Net worth	1,723 (358)	1,399 (291)	1,218 (253)

(ii) Significant ratios

Particulars	Year 10	Year 9	Year 8
(1) Measurement of investment:			
Percentage return on investment	32.7	39.5	32.9
Percentage return on equity	29.9*	25.9	19.7
Dividend cover ratio	4.67*	3.99	3.48
(2) Measurement of performance :			
Percentage of profit before tax to sales	7.7	9.3	6.7
Percentage of profit after tax to sales	3.8	3.9	2.8
Assets turnover ratio	3.6	3.8	4.1
(3)Measurement of financial status:			
Percentage of term loan to tangible net worth	41.1	14.2	19.4
Current ratio	1.25	1.25	1.15
(4)General :			
Dividend per equity share (₹)	1.60	1.60	1.20
Earnings per equity share (₹)	7.48*	6.39	4.17
(*Excluding bonus shares issued on March 31st, year 10)			

(iii) Statement of changes in financial position

Funds obtained from:	Year 10	Year 9
Profit after tax	415.21	341.17
Depreciation	225.09	125.94
Long-term loans	466.30	---
Sale of investments	---	0.44
	1,106.60	467.55
Funds used for:		
Repayment of long-term loans	---	23.05
Plant expenditure	889.16	202.47
Increase in investment	11.97	0.85
Dividends	90.96	161.04
Increase in working capital	114.51	80.14
	1,106.60	467.55
Changes in Working Capital Increase/(Decrease):		
Cash and Bank Balances	274.23	12.08
Inventories	55.63	236.08
Sundry Debtors	(66.91)	292.47
Loans and Advances	163.20	(0.20)
	426.15	540.43
Creditors and other Liabilities	616.80	244.10
Short-term Borrowings	(254.30)	197.31
Provision for Taxation	(50.86)	18.88
	311.64	460.29
Increase in Working Capital	114.51	80.14

Read the above financial statements and answer the following questions —

(a) Point out the areas where the company is not performing well in support of short-term liquidity position and return on investment.

(b) State whether the lending institutions be interested to grant credit based on the company's performance? Also mention the areas where care must be taken in order to attract the lending institutions.

(c) Write about the company's financing position in relation to the long-term investment.

(d) Analyse the company's financial statement from an investor's perspective in the basis of earnings and dividend.

[4+5+4+2]

Answer:

(a) The short-term liquidity position of the company cannot be considered very satisfactory. It is true that the current ratio has gone up to 1.25 in year 10 from 1.15 in year 8, yet it is still lower than the standard norm of 2. The low current ratio of the company may perhaps be due to the fact that the company is largely using its internally generated savings in financing acquisition of plant. The management must take steps to improve this ratio to ensure better liquidity.

The fluctuations in the rate of return on investment and the downward trend in assets turnover are matters of concern and require further probe. While the rate of return on investment has declined from 39.5 in year 9 to 32.7 per cent in year 10, the assets turnover has declined from 4.1 times in year 8 to 3.6 times in year 10. It is perhaps due to the fact that the company's newly purchased plants in year 10 may not have gone into commercial production so far. If it is so, the situation should not be a cause of worry. Otherwise, the reasons for low turnover should be investigated.

(b) From the point of view of granting short-term credit to the company, the firm's position is not very satisfactory as its current ratio is below the standard of 2, although it has recorded improvement. However, the increase in net working capital and cash balances in year 10 are favourable offsetting factors.

From the point of view of granting long-term loans to the company, its position seems to be very satisfactory. The interest coverage ratio would be very high. There is also an adequate margin of safety of funds as the present ratio of term loans to net worth is 41.1 per cent! The firm's retained earnings are showing a consistent upward trend.

A lending institution, in the case of short-term loans, is concerned with examining the company's liquidity position. In the case of term-loans, however, the emphasis of the lending institutions is more on firm's earning position and its existing debt-equity proportions because the repayment of the principal depends on the firm's ability to generate profits. Debt-equity ratio gives an idea of the proportion of assets financed by each group. The lending institutions obviously prefer a low debt equity ratio. Thus, the lending institutions will like to examine —

1. profitability of the company,
2. earnings cover for interest,

3. debt equity ratios, and
4. increase in retained earnings.

(c) An examination of the statement of changes in financial position reveals that the company is relying largely on funds from business operations (profit after tax plus depreciation) to finance its major expansion programmes of the purchase of plant. While in year 9, all the plant expenditure of ₹ 202.47 lakh was financed through internally-generated funds, in year 10 also, a substantial part of plant expenditure (₹ 889.16 lakh) was supported by the funds from business operations. To fill up the gap, the company raised a long-term loan of ₹ 466.3 lakh. As a result, there has been nearly a three-fold increase in term loans to tangible net worth in year 10 compared to year 9, the respective figures being 41.1 and 14.2 per cent.

But the increase in debt should not be regarded as alarming because the company is performing very well on the profitability front. The rate of return on the firm's investment is 32.7 per cent in year 10. Though the rate of interest on borrowings is not mentioned, it is likely to be much less than the rate of return. The qualitative feature of increased debt would be that it would improve the rate of return for equity holders. The rate of return on equity which has improved from 19.7 in year 8 to 29.9 in year 10 is likely to go up in future years. From these facts, it can be reasonably concluded that the company is following sound financial practices.

(d) An investor is primarily concerned with four things: (i) earnings per share, (ii) dividend per share, (iii) intrinsic value per share, (iv) prospects of growth in the market value of the share. The analysis of the financial data of Aryaan Company Ltd. indicates an upward trend in all these respects. The EPS has gone up from ₹ 4.17 in year 8 to ₹ 7.48 in year 10; the dividend cover has also gone up from ₹ 1.20 to ₹ 1.60 during the same period.

Question 3.

(a) Compute the Liquid Ratio from the following information for the year ended 31st March 2013 and also interpret the result:

Particulars	₹
Land and Building	**55,000**
Plant and Machinery	**40,000**
Stock	**30,000**
Debtors	**42,000**
Bills receivable	**25,000**
Prepaid Expense	**5,000**
Cash at bank	**15,000**
Cash in hand	**10,000**
Creditors	**25,000**
Outstanding Salary	**5,000**
Bank Overdraft	**3,000**
Bills payable	**4,000**
Proposed Dividend	**6,000**
Long – Term Liabilities	**46,000**
Provision for Bad debts	**2,000**

(b) Manisha Ltd. started business in 2012 and uses the FIFO inventory method. During 2012 it purchased 45,000 units of inventory at ₹ 10 each and sold 40,000 units for ₹ 20 each. In 2013 it purchased another 60,000 units at ₹ 11 each and sold 55,000 units for ₹ 22 each. What will be its 2013 ending inventory balance?

(c) State the features of a Corporate Bond Issue.

[6+2+2]

Answer:

(a) Components of Liquid Assets and Liquid Liabilities

Liquid Assets	₹	₹
Debtors	42,000	
Less: Provision for Bad Debts	2,000	40,000
Bills receivable		25,000
Cash at bank		15,000
Cash in hand		10,000
		90,000

Liquid Liability	₹	₹
Creditors		25,000
Outstanding Salary		5,000
Bills payable		4,000
Proposed dividend		6,000
		40,000

$$\therefore \text{Liquid ratio} = \frac{\text{Liquid Assets}}{\text{Liquid Liabilities}} = \frac{₹90,000}{₹40,000} = 2.25:1.$$

Interpretation and Significance:

It has already been stated that liquid ratio is, practically, the true test of liquidity. It measures the capacity of the firm to pay-off its liabilities as soon as they become mature for payment. Thus, a high liquid ratio indicates that the firm is quite able to pay-off its current obligations without difficulty, whereas, a low liquid ratio will create an opposite situation i.e. it is not possible for the firm to pay-off its current obligations, which indicates the liquidity position is not sound at all.

Although it is stated that a 1:1 ratio is considered as good but the same cannot safely be concluded since if percentage of debtors is more than other liquid assets, and if the same is not realised (if the debtors do not pay), it indicates that problem will arise to liquidate current obligations although the normal liquid ratio is maintained. Similarly, a low liquid ratio does not ensure a bad liquidity position since stocks are not absolutely non-liquid in character. Thus, a high liquid ratio does not always prove a satisfactory liquidity position if the firm has slow—paying customers, and vice versa in the opposite case i.e. a low liquid ratio may ensure a sound liquidity position if the firm has fast-moving stocks.

(b) Manisha Ltd. uses the FIFO method, and thus the first 5,000 units sold in 2013 indicate the 2012 inventory. Of the inventory purchased in 2013, 50,000 units were sold and 10,000 units remain,

valued at ₹ 11 each for a total of ₹ 110,000. Then its 2013 ending inventory balance is ₹ 1,10,000.

(c) The essential features of a corporate bond are relatively simple. The corporate issuer promises to pay a specified percentage of par value on designated dates (the coupon payments) and to repay par or principal value of the bond at maturity. Failure to pay either the principal or interest when due constitutes legal default, and investors can go to court to enforce the contract. Bondholders, as creditors, have a prior legal claim over common and preferred stockholders as to both income and assets of the corporation for the principal and interest due on them.

Question 4.

(a) What is Off-Balance-Sheet Financing? Write down the impacts of Off-balance sheet items in the context of Derivative Instruments.

(b) Rambow Corporation purchased a 8% bond, at par, for ₹ 10,00,000 at the beginning of the year. Interest rates have recently increased and the market value of the bond declined by ₹ 30,000. Determine the bond's effect on Rambow's financial statements under each classification of securities.

(c) Define Financial Statement.

[6+3+1]

Answer:

(a) Off-Balance-Sheet Financing:

It is a form of financing in which large capital expenditure is kept off of a company's balance sheet through various classification methods. It means a company does not include a liability on its balance sheet. It is an accounting term and impacts a company's level of debt and liability. Companies will often use off-balance-sheet financing to keep their debt to equity (D/E) and leverage ratio low, especially if the inclusion of a large expenditure would break negative debt covenants.

Examples of Off-balance – sheet financing includes joint ventures, providing guarantees or letters of credit, research and development partnerships, and operating leases (rather than purchases of capital equipment).

Operating lease are one of the most common forms of off-balance-sheet financing. In these cases, the asset itself is kept on the lessor's balance sheet and the lessee reports only the required rental expenses for use of the asset.

Impacts of Off-balance sheet items — Derivative Instruments —

The companies enter into derivative contracts in the normal course of business for market making, positioning and arbitrage purposes, as well as for own risk management needs, including mitigation of interest rate, foreign exchange and credit risk.

Derivatives are generally either privately negotiated OTC contracts or standard contracts transacted through regulated exchanges. The most frequently used freestanding derivative

products include interest rate, cross-currency and credit default swaps, interest rate and foreign exchange options, foreign exchange forward contracts and foreign exchange and interest rate futures.

The replacement values of derivative instruments correspond to their fair values at the dates of the consolidated balance sheets and arise from transactions for the account of customers and for our own account. Positive replacement values constitute a receivable, while negative replacement values constitute a payable. Fair value does not indicate future gains or losses, but rather the unrealized gains and losses from marking to market all derivatives at a particular point in time. The fair values of derivatives are determined using various methodologies, primarily observable market prices where available and, in their absence, observable market parameters for instruments with similar characteristics and maturities, net present value analysis or other pricing models as appropriate.

(b) If the bond is classified as a held-to-maturity security, the bond is reported on the balance sheet at ₹ 10,00,000. Interest income of ₹ 80,000 [₹ 10,00,000 x 8%] is reported in the income statement.

If the bond is classified as a trading security, the bond is reported on the balance sheet at ₹ 9,70,000. The ₹ 30,000 unrealized loss and ₹ 80,000 of interest income are both recognized in the income statement.

If the bond is classified as an available-for-sale security, the bond is reported on the balance sheet date at ₹ 9,70,000. Interest income of ₹ 80,000 is recognized in the income statement. The ₹ 30,000 unrealized loss is not recognized in the income statement. Rather, it is reported as a change in shareholders' equity.

(c) A financial statement is a numerical report covering financial information to express the financial results and financial condition of the concern. Financial statements are prepared for presenting a periodical review or report on the progress by the management and deal with the status of investments in the business and the results achieved during the period under review.

Question 5.

(a) Following figures have been extracted from the records of Agni Ltd.:

Year	2012	2013
Sales (₹)	**2,60,000**	**3,60,000**
Cost of Goods Sold (₹)	**2,00,000**	**3,30,000**
Gross Profit (₹)	**60,000**	**30,000**

It is learnt that cost price for the year 2013 has increased by 10% over the year 2012. Account for changes in gross profit in the year 2013.

(b) Firm X and Firm Y manufacture the same product and their cost sheets are given below: (₹/unit)

	Firm X	Firm Y
Units manufactured and sold	**30,000**	**30,000**
Direct material	**10**	**10**
Direct labour	**5**	**5**
Variable overheads	**5**	**5**
	20	**20**
Contribution	**10**	**10**
Selling price	**30**	**30**

The fixed overheads of Firm X and Firm Y are ₹ 1,50,000 and ₹ 2,25,000 respectively. You are required to calculate the operating leverage for both the firms and comment on them.

[6+4]

Answer:

(a) Let the cost price per unit in 2012 be ₹ 100.

Then, the cost price per unit in 2013 = ₹ 100 + 10% of ₹ 100 = ₹ 110

Particulars	2012	2013	Changes
(a) Sales (₹)	2,60,000	3,60,000	(+) 1,00,000
(b) Cost of Goods Sold (₹)	2,00,000	3,30,000	(+) 1,30,000
Gross Profit (₹) [a - b]	60,000	30,000	(-) 30,000
(c) Cost Price per Unit (₹)	100	110	(+)10
(d) Units Sold [b ÷ c]	2,000	3,000	(+) 1,000
(e) Selling Price per Unit (₹) [a ÷ d]	130	120	(-)10

Statement showing account for changes in Profit

Particulars	₹	₹
Changes in profit due to changes in sales:		
1. Increase in profit due to increase in quantity [Change in quantity x Base year's unit selling price = (3,000 - 2,000) x ₹ 130]		1,30,000
2. Decrease in profit due to decrease in unit selling price [Change in unit selling price x Base year's quantity = (₹ 120 - ₹ 130) x 2,000]		(20,000)
3. Decrease in profit due to change in price and quantity [Changes in unit selling price x Change in quantity = (₹ 120 - ₹ 130) x (3,000 - 2,000)]		(10,000)
		1,00,000
Changes in profit due to changes in cost: 1. Decrease in profit due to increase in quantity [Change in quantity x Base year's unit cost price = (3,000 - 2,000) x ₹ 100]	(1,00,000)	
2. Decrease in profit due to increase in unit cost price [Change in unit cost price x Base year's quantity = (₹ 110 - ₹ 100) x 2,000]	(20,000)	
3. Decrease in profit due to change in price and quantity [Change in unit cost price x Change in quantity = (₹ 110 - ₹ 100) x (3,000 - 2,000)]	(10,000)	

		(1,30,000)
Net Increase in Gross Profit		**(30,000)**

Note: Here, the base year is 2012.

(b) Calculation of Operating Leverage

Particulars	Firm X	Firm Y
Contribution for 30,000 units	3,00,000	3,00,000
Less: Fixed overheads	1,50,000	2,25,000
EBIT	1,50,000	75,000
Operating leverage (Contribution/EBIT)	(3,00,000/1,50,000)	(3,00,000/75,000)
	= 2	= 4

Comment – Firm Y's operating leverage is twice of Firm X, as the fixed overheads are higher. The higher the operating leverage ratio the situation is more risky. While a low ratio indicates a large absorption capacity of a firm in times of adversity.

Section B – Business Valuation

(Full Marks: 50)

Answer Question no.6 and 7 and any two from the rest in this section.

6. Following are the financial statement for A Ltd. and B Ltd. for the current financial year. Both the firm operate in the same industry:

Balance Sheet **(₹)**

Particulars	A Ltd.	B. Ltd.
Total Current assets	**14,00,000**	**10,00,000**
Total Fixed assets (net)	**10,00,000**	**5,00,000**
	24,00,000	**15,00,000**
Equity capital (of ₹ 100 each)	**10,00,000**	**8,00,000**
Retained earnings	**2,00,000**	
14% Long-term debt	**5,00,000**	**3,00,000**
Total Current liabilities	**7,00,000**	**4,00,000**
	24,00,000	**15,00,000**

Income-Statements **(₹)**

Particulars	A Ltd.	B. Ltd.
Net sales	**34,50,000**	**17,00,000**
Cost of goods sold	**27,60,000**	**13,60,000**
Gross profit	**6,90,000**	**3,40,000**

Operating expenses	**2,00,000**	**1,00,000**
Interest	**70,000**	**42,000**
Earnings before taxes	**4,20,000**	**1,98,000**
Taxes (50%)	**2,10,000**	**99,000**
Earnings after taxes (EAT)	**2,10,000**	**99,000**

Additional Information

	A Ltd.	**B Ltd.**
Number of equity shares	**1,00,000**	**80,000**
Dividend payment ratio (D/P)	**40%**	**60%**
Market price per share (MPS)	**₹ 40**	**₹ 15**

Assume that the two firms are in the process of negotiating a merger through an exchange of equity shares. You have been asked to assist in establishing equitable exchange terms, and are required to –

(i) Decompose the share prices of both the companies into EPS and P/E components, and also segregate their EPS figures into return on equity (ROE) and book value/intrinsic value per share (BVPS) components.

(ii) Estimate future EPS growth rates for each firm.

(iii) Based on expected operating synergies, A Ltd. estimates that the intrinsic value of B's equity share would be ₹ 20 per share on its acquisition. You are required to develop a range of justifiable equity share exchange ratios that can be offered by A Ltd. to B Ltd's shareholders. Based on your analysis in parts (i) and (ii) would you expect the negotiated terms to be closer to the upper, or the lower exchange ratio limits? Why?

(iv) Calculate the post-merger EPS based on an exchange ratio of 0.4:1 being offered by A Ltd. Indicate the immediate EPS accretion or dilution, if any that will occur for each group of shareholders.

(v) Based on a 0.4:1 exchange ratio, and assuming that A's pre-merger P/E ratio will continue after the merger, estimates the post-merger market price. Show the resulting accretion or dilution in pre-merger market prices. [4+2+3+3+3]

Answer:

(i) Determination of EPS, P/E ratio, ROE and BVPC of A Ltd. and B Ltd.

Particulars		**A Ltd.**	**B Ltd.**
Earning After Tax	(EAT)	₹ 2,10,000	₹ 99,000
No. of Shares		100,000	80,000
EPS	(EAT/N)	₹ 2.10	₹ 1.2375
Market price per share	(MPS)	₹ 40	₹ 15
P/E ratio = (MPS/EPS)		19.05	12.12
Equity funds	(EF)	12,00,000	8,00,000
BVPC	(EF/N)	₹ 12	₹ 10
ROE = (EAT/EF) × 100		17.5%	12.375%

(ii) Estimates of Growth rates in EPS for each Firm	**A Ltd.**	**B Ltd.**
Retention ratio (1-D/P ratio)	0.6	0.4
Growth rate (ROE × Retention ratio)	10.5%	4.95%

(iii) Justifiable equity share exchange ratio

$$\text{(a) Market price based} = \frac{MPS_B}{MPS_A} = \frac{₹\,15}{₹\,40} = 0.375:1 \text{ (lower limit)}$$

$$\text{(b) Intrinsic value based} = \frac{₹\,20}{₹\,40} = 0.5:1 \text{ (upper limit)}$$

Since A Ltd. has a higher EPS, ROE, P/E ratio, and even higher EPS growth expectations, the negotiated terms would be expected to be closer to the lower limit, based on the existing share prices.

(iv) Calculation of Post-merger EPS and other effects

Particulars		**A Ltd.**	**B Ltd.**	**Combined**
EAT (i)	(₹)	2,10,000	99,000	3,09,000
Shares outstanding (ii)		1,00,000	80,000	1,32,000*
EPS (i)/(ii)	(₹)	2.10	1.2375	2.341
EPS Accretion (Dilution)	(₹)	0.241	(0.301)**	—

Working Notes: 1

* Shares outstanding (combined) = 1,00,000 shares + (0.40 × 80,000) = 1,32,000 Shares
** EPS claim per old share = ₹ 2.34 × 0.40 = ₹ 0.936
EPS dilution of B Ltd. = ₹ 1.2375 – ₹ 0.936 = ₹ 0.3015

(v) Estimate of Post-merger Market Price and other effects

Particulars		**A Ltd.**	**B Ltd.**	**Combined**
EPS (i)	(₹)	2.10	1.2375	2.341
P/E Ratio		19.05	12.12	19.05
MPS (ii)	(₹)	40	15	44.60
MPS Accretion (Dilution) (i) × (ii)	(₹)	4.60	2.84***	

Working Notes: 2

		₹
MPS claim per old share	(₹ 44.60 × 0.4)	17.84
Less : MPS per old share		15.00
MPS accretion of B Ltd.		2.84***

7. The Balance Sheet of Sizzler Coat Ltd as at 31st March is given below-

Liabilities	₹	₹	Assets	₹	₹
Share Capital:			Fixed Assets:		
5,000 Equity Shares of ₹100		5,00,000	Land & Buildings at Cost		3,20,000
3,000 12% Preference Shares of ₹100		3,00,000	Plant & Machinery	9,40,000	
			(-) Acc. Depreciation	4,80,000	4,60,000
Reserves & Surplus:					
General Reserve		3,00,000	Investments:		
Profit & Loss A/c			6% Govt. Securities – at Cost		1,60,000
- Opening Balance (beginning)	1,20,000		Current Assets:		
--- Current Year Profit	4,80,000		Book Debts		3,80,000
	6,00,000		Stock in Trade		4,50,000
--- Provision for Tax	(2,40,000)	3,60,000	Cash and Bank Balances		80,000
			Preliminary Expenses		60,000
Current Liabilities & provisions:					
Trade Creditors		2,10,000			
Provision for Taxation		2,40,000			
		19,10,000			19,10,000

The face value of the Government Securities is ₹2,00,000. The current year profit reported in the Balance Sheet includes income from such Government Securities. Stock in Trade reported in Balance Sheet at 90% of Market Value.

The shares of the Company are not quoted on the Stock Exchange. A provision exists in the Articles of Association of the Company that in cases where any existing shareholder desires to transfer his holdings to another person, it should be done at a fair market value to be fixed by the Statutory Auditor of the Company. One of the shareholders desiring to transfer his holdings to X, an outsider, refers the matter of determination of the fair market value of shares to you, as the Statutory Auditor.

Indicate how you will proceed to determine such a value, based on the following additional information:

(i) The Company's prospects in the near future appear good.

(ii) Land value is understated by ₹4,00,000. Buildings have suffered a further depreciation of ₹2,00,000.

(iii) Market Value of Plant and Machinery is ₹5,40,000.

(iv) Companies doing similar business as that of Sizzler Coat Ltd show a market return of 12% on Capital Employed.

(v) Profits over the prior 3 years period have been increasing at the rate of ₹50,000 per annum.

(vi) It has always been the Company's practice to value stock at market prices. [15]

Answer:

(i) Computation of Future Maintainable Profits

Particulars	₹
Profit as per Profit & Loss Account	4,80,000
Less: Investment Income (₹2,00,000 x 6%)	(12,000)
Net Adjusted Profit Before Tax	4,68,000
Less: Tax Provision at 50% (See Note)	(2,34,000)
Adjusted Profit after Tax	**2,34,000**

Note:

- **Tax Rate** = Tax Provision as per books ÷Profit as per books = ₹2,40,000 ÷₹4,80,000 = **50%.**
- It is assumed that 90% of Market Value is lower than cost of stock. Since the Company has been valuing its stock at market prices, it is assumed that no further adjustment is considered necessary in this case.

We are informed that the profits (assumed as PBT) of the last 3 years have been increasing at ₹50,000 per annum.

Presuming the trend of ₹50,000 increase in PBT to continue, profit after tax will increase by ₹25,000 [₹50,000 – 50%], and the expected profit of the next three years and their average will be –

Future Year	**Expected PAT**	**Weights**	**Weight x PAT**
Year 1	2,34,000 +25,000 = 2,59,000	3	₹7,77,000
Year 2	2,59,000 + 25,000 = 2,84,000	2	₹5,68,000
Year 3	2,84,000 +25,000 = 3,09,000	1	₹3,09,000
	Total	**6**	₹16,54,000
Weighted Average Profits = ₹16,54,000 ÷6			**₹2,75,667**
Less: Preference Dividend (₹3,00,000 x 12%)			**(₹36,000)**
Equity Earnings			**₹2,39,667**

(ii) Computation of Proxy Trading Capital Employed (based on Closing Capital Employed)

Particulars	₹	
Land & Buildings- Book Value	3,20,000	
Add: Increase in Value of Land	4,00,000	
Less: Decrease in Value of Building	(2,00,000)	5,20,000

Plant & Machinery		5,40,000
Book Debts		3,80,000
Stock in Trade (at Market Value) i.e. ₹4,50,000 x 100/90		5,00,000
Cash and Bank Balances		80,000
Total Assets		**20,20,000**
Less: External Liabilities		
Trade Creditors	2,10,000	
Provision for Taxation	2,40,000	(4,50,000)
Less: Preference Capital		(3,00,000)
Capital Employed as at 31st March (year-end)		**12,70,000**

Note: Stock is taken at Realizable Value i.e. Market Value. In the B/S, it has been taken at 90% only.

(iii) Computation of Goodwill

Particulars	₹
a. Capitalized Value of Future Maintainable Profits i.e ₹2,39,667 ÷12%	19,97,225
b. Capital Employed on Balance Sheet Date	12,70,000
c. Excess attributed to **Goodwill (a-b)**	**7,27,225**

(iv) Computation of value per Share on Net Assets Basis

Particulars	₹
a. Capital Employed on Balance Sheet date	12,70,000
b. Goodwill as calculated above	7,27,225
c. Non- Trade Investments at Cost	2,00,000
d. Net Assets available to Equity Shareholders (a+b+c)	**21,97,225**
e. Number of Equity Shares	5,000 Shares
f. Value per Equity Share based on Net Assets (d ÷ e)	**₹439.45**

Assuming Equity Shares are valued at Par if yielding 12% Return on Total Capital Employed, value per share is —

Particulars	₹
Future Maintainable Profit for Equity Shareholders (as computed above)	2,39,667
Add: Non- trade Income (after Tax) (2,00,000 x 6% x 50%)	6,000
Total Equity Earnings	2,45,667

Total Value Attributable to Equity Shareholders (computed above)	21,97,225
Actual Yield on Equity Capital Employed (245667 ÷2197225)	11.18%
Value per Share = Par Value x Actual Yield ÷ Expected Yield = ₹100 x 11.18% ÷12%	₹93.17

6. Summary of Value per Share under different methods

Particulars	₹
a. Value per Share under Net Assets method	439.45
b. Value per Share under Yield method	93.17
c. Fair Value per Share = (₹439.45 + ₹93.17)÷2	266.31

8. (a) "Jaggi & Lau suggested that a proper valuation of human resource is not possible unless the contribution of individuals as a group is taken into consideration." Comment.

(b) You are given following information about Sandeep Ltd.:

(i) Beta for the year 2012 – 13 1.05

(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, 2013

	₹
Equity	**29,160**
Reserves and 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

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

Calculate Economic value Added of Sandeep Ltd. as on 31st March 2013. [6+4]

Answer:

(a) Jaggi and Lau suggested a model for valuation of human resources. According to them, proper valuation of human resources is not possible unless the contributions of individuals as a group are taken into consideration. They referred group to homogeneous employees whether working in the same department or division of the organization or not. They believed that an individual's expected service tenure in an organization is difficult to predict, but on a group basis, it is relatively easy to estimate the percentage of people in a group likely to leave the organization in future. Accordingly, they developed a model which attempts to calculate the present value of all existing employees in each rank. Such present value is measured with the help of the following steps:

(i) Ascertain the number of employees in each rank.

(ii) Estimate the probability that an employee will be in his rank within the organization on terminated/promoted in the next period. This probability will be estimated for a specified time-period.

(iii) Ascertain the economic value of an employee in a specified rank during each time period.

(iv) The present value of existing employees in each rank is obtained by multiplying the above three factors and applying an appropriate discount rate.

Merit:

Jaggi and Lau model approached the valuation of human resources on the basis of grouping of employees. Under this method, calculations get simplified and the chances of errors get reduced.

Demerit:

(i) This model ignores individual skills of the employees. The varied skills of the employees are not recognized in the valuation process under Jaggi and Lau model.

(ii) The performance of a group may be seriously affected in the event of exit of a single individual.

(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:

(i) NOPAT

Profit After Tax	₹20,394.16 lakhs
Add: Interest Net of tax [₹487 lakhs (1 – 0.2445)]	₹367.93 lakhs
NOPAT	₹20,726.09 lakhs

(ii) 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%

(iii) Cost of Debt

$$\text{Cost debt} = \frac{\text{Interest on Loan Funds } (1-\text{Tax Rate})}{\text{Loan funds}} \times 100$$

$$\text{Cost of Debt} = \frac{487 \times (1-0.2445)}{8100} \times 100 = 4.54\%$$

(iv) Weighted Average Cost of capital (WACC)

	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

(v) Cost of capital Employed = ₹81,000 x 14.22% = ₹11,518.20 lakhs

(vi) EVA = NOPAT – Cost of Capital Employed

= ₹20,726.09 lakhs – ₹11,518.20 lakhs = ₹9,207.89 lakhs

9. During the financial year 2012-2013, ITC Ltd. had the following transactions:

(i) On 1st April 2012, ITC Ltd. purchased new asset of Fine Ltd. for ₹ 7,20,000. The fair value of Fine Ltd.'s identifiable net assets was ₹ 3,44,000. ITC Ltd. is of the view that due to popularity of Fine Ltd.'s products, the life of resulting goodwill is unlimited.

(ii) On May 2012, ITC Ltd., purchased a franchise to operate boating service from the State Government for ₹1,20,000 and at an annual fee of 1% of boating revenues. The franchise expires after 5 years. Boating revenues were ₹ 40,000 during financial year 2012-2013. ITC Ltd. projects future revenue of ₹80,000 in 2013-2014 and ₹1,20,000 per annum for 3 years thereafter.

(iii) On 5th July 2012, ITC Ltd. was granted a patent that had been applied for by Fine Ltd. During 2012-13, ITC Ltd. incurred legal costs of ₹1,02,000 to register the patent and an additional ₹ 1,70,000 to successfully prosecute a patent infringement suit against a competitor. ITC Ltd. expects the patents economic life to be 10 years. ITC Ltd. follows an accounting policy to amortize all intangibles on straight line basis over the maximum period permitted by accounting standard taking a full year amortization in the year of acquisition.

Prepare:

(a) A schedule showing the intangible section in ITC Ltd. balance sheet at 31st March 2013.

(b) A schedule showing the related expenses that would appear in the Statement of Profit and Loss of ITC Ltd. for 2012-2013. [3+7]

Answer:

ITC Ltd.
Balance Sheet (Extract)
(Section relating to intangible asset)
As on 31st March 2013

(a)

	Note No.	₹
Assets		
(1) Non- current asset		
Intangible assets	1	6,79,200

(b) Statement of Profit and Loss (Extract)
For the year ended 31st March 2013

	Note No.	₹
Revenue from Operations		40,000
Total revenue		?
Expenses:		
Amortization	2	88,800
Other expenses	3	400
Total Expenses		?

Notes to Accounts (Extract)

		₹	₹
1.	Intangible assets:		
	Goodwill (Refer to note 1)	3,38,400	
	Franchise (Refer to Note 2)	96,000	
	Patents	2,44,800	6,79,200
2.	Amortization expenses:		
	Goodwill	37,600	

	Franchise	24,000	
	Legal cost	27,200	88,800
3.	Other expenses:		
	Franchise for 1% of 40,000		400

Working Notes:

		₹
(1)	Cash Paid	7,20,000
	Less: Fair value of net assets	(3,44,000)
	Goodwill	3,76,000
	Less: Amortization (over 10 years as per SLM)	(37,600)
	Balance to be shown in the balance sheet	3,38,400
(2)	Franchise	1,20,000
	Less: Amortisation (over five years)	(24,000)
	Balance to be shown in the balnce sheet	96,000
(3)	Legal costs (₹1,02,000 + ₹1,70,000)	2,72,000
	Less: Amortisation (over ten years as per SLM)	(27,200)
	Balance to be shown in the balance sheet	2,44,800

(4) As per para 63 of AS 26, 'Intangible Assets' there is a rebuttable presumption that useful life of a intangible asset will not exceed ten years. If life is taken for more than 10 years, then company will have to disclose the significant reasons for the assumption. Here, ITC Ltd. has simply stated that life is unlimited by saying that Fine Ltd.'s products are popular. However, this cannot be constituted as significant reason. Therefore, this assumption has not been taken into consideration.

10. (a) While evaluating a capital project, a company is considering an option to buy a business from a third party at the cost of ₹ 50 crores. It is expected that in next one year, the value of such business will increase to ₹ 60 crores with probability of 70% or decline to ₹ 45 crores with probability of 30%. The company may enter into an agreement with a party to sell the said business at ₹48 crores after one year if the company so desires. Assuming that this real option is like a European Call, with the strike price of the underlying real asset is ₹ 48 crores and the risk free interest rate is 9% p.a. Determine the value of this real option.

(b) Coca – Coal's Balance sheet for December 2013 is modified and summarized below (in millions of dollars):

	$		$
Cash and Near cash	**1,648**	**Accounts Payable**	**3,141**
Marketable Securities	**159**	**Short- term Borrowings**	**4,462**
Accounts receivable	**1,666**	**Other Short – term Liabilities**	**1,037**
Other current Assets	**2,017**	**Current Liabilities**	**8,640**
Current Assets	**5,490**	**Long-term Liabilities**	**687**
Long-term Investments	**1,863**	**Other Long-term Liabilities**	**1,415**
Depreciable Fixed Assets	**5,486**	**Non-current Liabilities**	**2,102**
Non-depreciable Fixed Assets	**199**	**Share Capital (Paid-in)**	**3,060**
Accumulated Depreciation	**2,016**	**Retained Earnings**	**5,343**
Net Fixed Assets	**5,532**	**Shareholders Equity**	**8,403**

Other Assets	**8,123**	**Total Liabilities & Equity**	**19,145**
Total Assets	**19,145**		

Required:

Coca-Cola's most valuable asset is its brand name. Where in the balance sheet do you see its value? Is there any way to adjust the balance sheet to reflect the value of this asset?

(c) Why do you value swaps? **[5+3+2]**

Answer:

(a) To solve this problem, one can use any approach of the following three:

- No Arbitrage Method
- Hedging Portfolio Method
- Risk Neutral Probability Method

Here, answer is given using Risk Neutural Probability Method:

Let p be the risk neutral probability that the value of the business will increase to ₹ 60 crores and 1-p will be the risk neutral probability that value of the business will be ₹ 45 crores if it declines.

Then, 50 = [60p+45 (1 -p)] /1.09 and solving for p we get p = 0.6333 and 1-p = 0.3667. Using these risk neutral probabilities we get the valuation of the OPTION as –

Value of the Real Option = {(60-48) X 0.6333 + 0 X.3667)/1.09 = ₹ 6.97 crores

(b) Coca-Cola's brand name value does not appear in its balance sheet. Of course, there is an item called non-depreciable fixed assets, but it is too small to represent the brand-name value; it's probably land. One way to adjust the balance sheet to reflect the value of this asset (brand-name) is for Coca-cola to set up a separate subsidiary that would buy the right to the brand name. The brand-name value would then show up as an asset for the subsidiary, which would then be reflected in the Coca-cola's balance sheet as well, even if the financial statements were consolidated.

(c) Pricing of the swap is an important issue for two reasons. Banks function as warehouse of swaps and are ready to offer swap to the desired customers. For this they are ready to quote swap rates for paying and receiving fixed rate interest for receiving / paying benchmark variable rate. The other reason for valuing the swap is for the purpose of cancellation of an existing swap. On economic ground, a firm may like to cancel the obligations or part thereof by paying or receiving the value of the swap at that point of time.