Paper 20 – Financial Analysis & Business Valuation

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

Question No. 1 which is compulsory and carries 20 marks and answer any five questions from Question No. 2 to Question No. 8

1. (a) State whether the following statements are true or false: [1×8=8]

(i) Realistic, error free and flexible are not the attributes of a good financial model.

(ii) If EPS of a company is ₹ 15 and the PE ratio is 10, then market value of the share of the company is ₹ 1.5.

(iii) In case of Deep Discount Bond, the issue price is always the face value.

(iv) Cash realized from sale of scrap is grouped under the category of cash from investing activities in Cash flow statement.

(v) A brand is nothing but a glorified product name; hence it has no value.

(vi) The CAPM assumes perfect market competition.

(vii) In a synergistic merger, the post-merger value exceeds the sum of the separate companies' pre-merger values.

(viii) One of the consequences of Efficient Market Hypothesis (EMH) is that the market will always have equilibrium price of a company's share as determined by its fundamentals.

Answer:

(i) False

(ii) False

(iii) False

(iv) False

(v) False

(vi) True

(vii) True

(viii) False

(b) The operating and cost data of ABC Ltd. are:

Sales ₹ 20,00,000

Variable Costs ₹ 14,00,000

Fixed Costs ₹ 4,00,000 (including 15% interest on ₹ 10,00,000)

You are required to:

(i) Calculate its operating, financial and combined leverage and

(ii) Determine the additional sales to double its EBIT. [6]

Answer:

(i) EBIT = Sales-VC-Operative fixed cost

= ₹ (20,00,000 -14,00,000 -2,50,000) = ₹3,50,000.

Net earnings before taxes = EBIT-Interest
= ₹ 3,50,000 - ₹ 1,50,000 = ₹ 2,00,000
Operating leverage = (Sales - VC)/EBIT
= ₹ 6,00,000 ÷ ₹ 3,50,000 = 1.71
Financial leverage = EBIT/(EBIT -Interest)
= ₹ 3,50,000 ÷ ₹ 2,00,000 = 1.75
Combined leverage
= operating leverage × financial leverage =1.71×1.75 =2.99

(ii) Desired sales revenue to earn double EBIT:
The P/V ratio will be —
Contribution/Sales
= (₹ 20,00,000 - ₹ 14,00,000)/ ₹ 20,00,000
= ₹ 6,00,000/ ₹ 20,00,000 = 0.30
Now, the desired sales revenue will be —
(₹ 2,50,000 + ₹ 3,50,000 + ₹ 3,50,000)/ 0.30
= ₹ 31,66,667
Additional sales required = ₹ (31,66,667-20,00,000) = ₹ 11,66,667.

(c) For Goal Ltd. the FCFE projected for next 3 years are stated below along with the immediately past year FCFE. You are required to value equity share by DCF approach. From Year 4 FCFE is expected to grow at 3% p.a. Cost of equity is measured at 15% p.a. Number of shares outstanding is 1,00,000. [6]

	Past Year	Projected		
		Year 1	Year 2	Year 3
FCFE(₹Lakhs)	**160**	**180**	**200**	**220**

Discounting Factor @ 15% p.a. Year 1= 0.869565, Year 2= 0.756144, Year 3= 0.657516.

Answer:

Value of Equity Share of Goal Ltd. by DCF Approach

	Year 0	Year 1	Year 2	Year 3
FCFE (₹ lakh)	#	180	200	220
Discounting Factor		0.869565	0.756144	
PV of Yr 1 FCFE	156.52			
PV of Yr 2 FCFE	151.23			
Terminal Value at the end of Yr. 2*			1833.333	
PV of Terminal Value **	1386.264			
Value of Equity [156.52+151.23+1386.264] (₹ lakh)	1694.01			
Value per share [Value of Equity/Number of Shares] ₹	1694.01			

past year FCFE is irrelevant for valuation.

* Use the formula based on Gordon. Terminal Value of the firm at the end of year 2 = FCFF/(Ke-G)
for the infinite series of FCFFS from year 3 to infinity = 220/(0.15-0.03) = 1833.333.

** PV of Terminal Value at year 0 = $1833.33/(1+0.15)^2$ = 1386.264

Note: the long term growth rate is applicable on the subsequent FCFE and not on the first FCFE of the series. Hence the series starts with Year 3 FCFE and the PV for the infinite series by application of Gordon formula is obtained at the end of Year 2(always 1 year before the starting cash flow.)

Alternative solution:

	Yr 0	Yr 1	Yr 2	Yr 3	Yr 4
FCFE (₹ lakh)		180	200	220	226.6
Discounting Factor		0.869565	0.756144	0.657516	
PV of Yr 1 FCFE	156.52				
PV of Yr 2 FCFE	151.23				
PV of Yr 3 FCFE	144.6535				
Terminal Value at the end of Yr 3				1888.333	
PV of Terminal Value	1241.61				
Value of Equity ∑DCF (₹ lakh)	1694.01				
Value per share ₹	1694.01				

Note: Terminal Value at end of Year 3 = 226.6 ÷ (0.15-0.03) =1888.333

PV of Terminal Value at year 0 = 1888.333 ÷ $(1+0.15)^3$ = 1241.61

2. The Balance Sheets of Maras Ltd. for the years ended on 31.03.2016 and 31.03.2017 are as follows:

(Amount in ₹ Lakh)

	As at 31.03.16	As at 31.03.17
Equity & Liabilities		
Shareholder's Fund:		
Share capital	**696.60**	**726.70**
Equity Share suspense	**30.07**	**------**
Equity Share warrants	**-----**	**841.20**
Reserve & Surplus	**31,256.89**	**39,156.40**
Non-Current Liabilities:		
Secured Loans	**4,784.56**	**3,300.09**
Unsecured Loans	**9,128.31**	**14,939.75**
Deferred Tax liabilities	**3,491.00**	**3,936.27**
Current Liabilities:		
Other current liabilities	**8,432.77**	**10,522.73**
Provisions	**856.44**	**1,496.31**
	58,676.64	**74,919.45**
Assets		
Non-current assets	**-------**	**------**
Fixed Assets (Net)	**31,830.23**	**30,941.81**
Capital work in progress	**3,764.07**	**11,502.92**
Non-Current Investment:		
Investment	**8,125.67**	**11,031.80**
Current Assets:		
Inventories	**6,068.25**	**7,123.77**
Trade receivables	**1,866.21**	**3,113.79**

Cash and bank balance	**917.68**	**2,140.03**
Other current assets	**1.53**	**36.27**
Loans and advances	**6,103.00**	**9,029.06**
	58,676.64	**74,919.45**

Required:

(i) Prepare the Common-Size Balance Sheet of Maras Ltd.

(ii) Present and interpret your observations on the common-size Balance Sheet. [6+10=16]

Answer:

(i) Common Size Balance Sheet of Maras Ltd. (₹ in lakhs)

	As at 31.03.2016	% of Total	As at 31.03.2017	% of Total
EQUITY & LIABILITIES				
Shareholders' Fund:				
Share Capital	696.60	1.187	726.70	0.970
Equity share suspense	30.07	0.051	-	-
Equity share warrants	-	-	841.20	1.123
Reserve and surplus	31,256.89	53.270	39,156.40	52.265
Non-current liabilities:				
Secured loans	4,784.56	8.154	3,300.09	4.405
Unsecured loans	9,128.31	15.557	14,939.75	19.941
Deferred tax liabilities	3,491.00	5.950	3,936.27	5.254
Current Liabilities:				
Other current liabilities	8,432.77	14.372	10,522.73	14.045
Provisions	856.44	1.460	1,496.31	1.997
	58,676.64	100.00	74,919.45	100.00
ASSETS:				
Non-current Assets:				
Fixed assets (Net)	31,830.23	54.247	30,941.81	41.300
Capital work in progress	3,764.07	6.415	11,502.92	15.354
Investments	8,125.67	13.848	11,031.80	14.725
Current assets:				
Inventories	6,068.25	10.342	7,123.77	9.509
Trade Receivables	1,866.21	3.180	3,113.79	4.156
Cash and bank balance	917.68	1.564	2,140.03	2.856
Other current assets	1.53	0.003	36.27	0.048
Loan and advances	6,103.00	10.401	9,029.06	12.052
	58,676.64	100.00	74,919.45	100.00

(ii) Analysis and presentation of observations:

1. The proportion of unsecured loans to total of balance sheet has increased from 15.56% to 19.94%
2. The proportion of secured loans to total of balance sheet has fallen from 8.15% to 4.41% due to redemption of non-convertible debentures and repayment of term loans.
3. The reserves and surplus have stayed nearly flat having marginally reduced from 53.27% at the end of year 31/03/2016 to 52.27% at end of year 31/03/2017.
4. Although the proportion of other current liabilities in total share capital and liabilities has decreased from 14.37% to 14.05% but provisions have slightly increased from 1.46% to 2.00%

5. The deferred tax liabilities have decreased from 5.95% to 5.25%
6. The proportion of net fixed assets have fallen from 54.25% to 41.3%
7. The capital work-in-progress has increased from 6.42% to 15.35%.
8. The investments have increased by nearly 1% over the previous accounting year.
9. The current assets other than loans and advances, have increased from 15.09% to 16.57%
10. The loans and advances have increased from 10.4% to 12.05%.

3.(a) As credit manager of the bank, you have been approached by two companies for a loan of ₹ 1,00,000 for six months, with no collateral offered. Since the bank has almost exhausted its quota for loans of this type, only one of these requests can be granted. The relevant information supplied to you by the two companies is presented below:

Particulars	Company X (₹)	Company Y (₹)
Assets		
Cash	**1,70,000**	**3,00,000**
Sundry Debtors	**2,74,000**	**4,24,000**
Stock	**9,00,000**	**13,50,000**
Total Current Assets	**13,44,000**	**20,74,000**
Other Assets	**10,00,000**	**10,20,000**
	23,44,000	**30,94,000**
Liabilities & Capital		
Current Liabilities	**5,00,000**	**6,40,000**
Long-term Loans	**8,00,000**	**10,00,000**
Equity Share Capital	**8,00,000**	**12,00,000**
Retained Earnings	**2,44,000**	**2,54,000**
	23,44,000	**30,94,000**

Considering the above data specify the company which should be granted the credit. Explain your answer with reasons. [10]

Answer:

Liquidity ratios are relevant to assess the loan applications received by the bank:

Current Ratio = 13,44,000/5,00,000 = 2.69 : 1 (Company X)

= 20,74,000/6,40,000 = 3.24 : 1 (Company Y)

Quick Ratio or Acid Test Ratio = 4,44,000/5,00,000 = 0.89: 1 (Company X)

= 7,24,000/6,40,000 = 1.13: 1 (Company Y)

Company Y is therefore recommended for being granted the loan as its liquidity ratios are better than those of Company X. This is relevant as the loan is for a short period of six months without any collateral hence the acid test ratio assumes greater significance with acid test ratio of 0.89:1 i.e. less than 1 Company X will not be able to meet its short term liabilities in the six months period which position may further decline due to further borrowings, hence Company Y should be selected for grant of loan.

The gross profit rate of Company Y is 40%, which is more than the gross profit rate of Company X which is 30%. Hence the additional sales arising due to the bank finance is also likely to yield higher profit for Company Y.

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

Year	2015-16	2016-17
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 2016-17 has increased by 10% over the year 2015-16. Account for changes in gross profit in the year 2016-17. [6]

Answer:
Let the cost price per unit in 2015-16 be ₹ 100.
Then, the cost price per unit in 2016-17 = ₹ 100 + 10% of ₹ 100 = ₹ 110

Particulars	2015-16	2016-17	Changes
(i) Sales (₹)	2,60,000	3,60,000	(+) 1,00,000
(ii) Cost of Goods Sold (₹)	2,00,000	3,30,000	(+) 1,30,000
Gross Profit (₹) (i-ii)	60,000	30,000	(-) 30,000
(iii) Cost Price Per Unit (₹)	100	110	(+) 10
(iv) Units Sold (ii/iii)	2,000	3,000	(+) 1,000
(v) Selling Price per unit (₹) (i/iv)	130	120	(-) 10

Statement showing changes in Gross 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 years quantity = ((₹ 120 - ₹130) × 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)
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 (decrease) in Gross Profit		(30,000)

Note: Here, the base year is 2015-16.

4.(a) What kind of conditions of a company are represented by the following pattern of cash flows? You are requested to provide your analysis of each case separately:

I. Net cash flows from Operating Activities are positive, net cash flows used in Investing Activities are negative and net cash flows from Financing Activities are positive.

II. Net cash flows from Operating Activities are negative, net cash flows used in Investing Activities are positive and net cash flows from Financing Activities are negative.

III. Net cash flows from Operating Activities are negative, net cash flows used in Investing Activities are negative and net cash flows from Financing Activities are positive.

IV. Net cash flows from Operating Activities are positive, net cash flows used in Investing Activities are negative and net cash flows from Financing Activities are negative.

V. Net cash flows from Operating Activities are negative, net cash flows used in Investing Activities are positive and net cash flows from Financing Activities are positive. **[2×5=10]**

Answer:

I. A firm with positive net cash flows from Operating Activities, negative net cash flows used in Investing Activities and positive net cash flows from Financing Activities is a growing firm as it is raising funds through various financing activities and also using funds generated through operating activities and using them for investment so that it can grow at a higher rate.

II. A firm with negative net cash flows from Operation Activities, positive net cash flows used in Investing Activities and negative net cash flows from Financing Activities is in bad financial position as it is not able to generate funds through operating activities; instead selling its investments to generate funds to meet their financial obligations (that is why it has negative cash flows from financing activities).

III. A firm with negative net cash flows from Operating Activities, negative net cash flows used in Investing Activities and positive net cash flows from Financing Activities is a start-up firm or in its initial stages. It is using funds raised through financing activities and is using these for operations and investment purposes.

IV. A firm with positive net cash flows from Operating Activities, negative net cash flows used in Investing Activities and negative net cash flows from Financing Activities is a cash-cow firm as it is generating huge amount of funds through operation and not only using them to meet its investment requirement, but also using them to pay-off its financial liabilities as cash flows from financing activities are negative.

V. A firm with negative net cash flows from Operating Activities, positive net cash flows used in Investing Activities and positive net cash flows from Financing Activities is a firm which is not going to sustain in future. Its operations are in losses and to meet them the firm is selling its investments and also, raising funds from financing activities.

(b) The following figures relate to two companies:

(₹ lakhs)

Particulars	T Ltd.	V Ltd.
Sales	**500**	**1,000**
Variable costs	**200**	**275**
Contribution	**300**	**725**
Fixed cost	**150**	**425**
Profit before Interest & Taxes (PBIT)	**150**	**300**
Interest	**50**	**100**
Profit before tax (PBT)	**100**	**200**

You are required to calculate - (A) operating, financial and combined leverages of the two companies, and (B) comment on the relative position of the companies in respect of the risk. [3+3=6]

Answer:

(₹ lakhs)

Particulars		T Ltd.	V Ltd.
Operating Leverage	$\frac{\text{Contribution}}{\text{EBIT}}$	$=\frac{300}{150}=2$	$=\frac{725}{300}=2.42$
Financial Leverage	$\frac{\text{EBIT}}{\text{EBT}}$	$=\frac{150}{100}=1.5$	$=\frac{300}{200}=1.5$
Combined Leverage	$\frac{\text{Contribution}}{\text{EBT}}$	$=\frac{300}{100}=3$	$=\frac{725}{200}=3.63$

Comment:

1. The operating leverage is higher for V Ltd. and therefore it is subject to greater degree of business risk than T Ltd. The EBIT will tend to vary more with sales in V Ltd.
2. The financial leverage of both the companies stand at 1.5 times. It conveys that interest burden is proportionately same, and also financial risk is similar for both the companies.
3. The combined leverage of V Ltd. is higher and its overall risk is more as compared to T Ltd.

5. Super Garments Ltd. is a company which produces and sells to retailers certain range of fashion clothing. They have made the following estimates of prudential cash flows for the next 10 years.

₹ in lakhs

Yr.	1	2	3	4	5	6	7	8	9	10
Cash flow	3,750	4,250	5,000	6,250	7,500	8,500	9,500	11,250	12,500	15,000

SONA Ltd. is a company which owns a series of boutiques in a certain locality. The boutiques buy clothes from various suppliers and retail them. Each boutique has a manager and an assistant but all purchasing and policy decisions are taken centrally. An independent cash flow estimate of SONA Ltd. was as follows:

₹ in lakhs

Yr.	1	2	3	4	5	6	7	8	9	10
Cash flow	300	400	500	700	850	1,150	1,300	1,500	1,650	2,000

SUPER Garments Ltd. is interested in acquiring SONA Ltd. in order to get some additional retail outlets. They make the following cost-benefit calculation;

i) Net Value of assets of SONA Ltd.

	₹ in lakhs
Sundry fixed assets	2,000
Investments	500
Stock	1,000
Total	3,500
Less: Sundry creditors	1,000
Net Assets	2,500

ii) Sundry fixed assets amounting to ₹1,25,00,000 cannot be used and their net realizable value is ₹1,12,50,000

iii) Stock can be realized immediately at ₹1,175 lakh

iv) Investments can be disposed off for ₹530 lakhs

v) Some workers of SONA Ltd. are to be retrenched for which estimated compensation is ₹325 lakh.

vi) Sundry creditors are to be discharged immediately

vii) Liabilities on account of retirement benefits not accounted for in the balance sheet by SONA Ld. Is ₹120 lakhs.

viii) Expected cash flows of the combined business will be as follows:

₹ in lakhs

Yr.	1	2	3	4	5	6	7	8	9	10
Cash flow	4,500	4,750	5,750	7,375	8,750	10,000	11,250	13,250	14,500	17,250

Find out the maximum value of SONA Ltd. which SUPER Garments Ltd. can quote. Also show the difference in valuation had there been no merger. Use 20% as discount factor.

Year	1	2	3	4	5	6	7	8	9	10
Discounting	0.8333	0.6944	0.5787	0.4823	0.4019	0.3349	0.2791	0.2326	0.1938	0.1615

factor @20%										

[16]

Answer:

(i) Calculation of operational synergy expected to arise out of merger

Year	1	2	3	4	5	6	7	8	9	10
Projected cash flow of Super Garment Ltd. After merger with Sona Ltd.	4500	4750	5750	7375	8750	10000	11250	13250	14500	17250
Less: Projected cash flows of Super Garment Ltd. Without merger	3750	4250	5000	6250	7500	8500	9500	11250	12500	15000
Projected Cash flows of Sona Ltd individually post merger	750	500	750	1125	1250	1500	1750	2000	2000	2250

(ii) Valuation of Sona Ltd. Ignoring merger

Year	Cash flows (₹ in lakhs)	Discount factor	Discount cash flow (₹ in lakhs)
1	300	0.8333	249.990
2	400	0.6944	277.760
3	500	0.5787	289.350
4	700	.4823	337.610
5	850	.4019	341.615
6	1150	.3349	385.135
7	1300	.2791	362.830
8	1500	.2326	348.900
9	1650	.1938	319.770
10	2000	.1615	323.000
			3235.960

(iii) Valuation of Sona Ltd. Individually in case of merger.

Year	Cash flows (₹ in lakhs)	Discount Factor	Discounted Cash Flow (₹ in lakhs)
1	750	0.8333	624.975
2	500	.6944	347.200
3	750	.5787	434.025
4	1125	.4823	542.588
5	1250	.4019	502.375
6	1500	.3349	502.350
7	1750	.2791	488.425
8	2000	.2326	465.200
9	2000	.1938	387.600
10	2250	.1615	363.375
			4658.113

(iv) Maximum value to be quoted

	₹ in lakhs	₹ in lakhs
Value as per discounted cash flows from operation		4,658.113
Add: Cash to be collected immediately by disposal of assets:		
Sundry Fixed Assets	112.500	
Investments	530.000	
Stock	1175.000	1817.500
		6,475.613
Less: Sundry Creditors	1000.000	
Provision for retirement benefits	120.000	
Retrenchment Compensation	325.000	1445.000
		5,030.613

So, Super Garments Ltd. Can quote as high as ₹50,30,61,300 for taking over the business of Sona Ltd. In this case value arrived at in isolation ₹32,35,96,000 is not providing reasonable value estimate.

6.(a) Soft Solution is a small software firm with high growth rate. It has existing assets in which it has capital invested of ₹100 lakh. The other information about Soft solution is as follows:

The after tax operating Income on assets in place is ₹15 lakh. This return on capital of 15% is expected to be sustained in the future. Cost of capital of Soft Solution is 10%.

At the beginning of each of the next five years Soft Solution is expected to make new investments of ₹10 lakh each. These investments are also expected to earn 15% as a return on capital, and the cost of capital is expected to remain 10%.

After the year 5, Soft Solution will continue to make Investments, and earnings will grow 5% a year, but the new investments will have a return on capital of only 10%, which is also the cost of capital.

All assets and investments are expected to have infinite lives. The assets in place and the investments made in the first five years will make 15% a year in perpetuity, with no growth.

Based on the information given estimate the value of Soft Solution, How much of this value comes from the EVA and how much from capital invested? [8]

Answer:

(₹ in lakhs)

Capital invested in assets in place	100
+ EVA from assets in place [(0.15 – 0.10)/ 0.10] x 100	50
+ PV of EVA from new investments in year 1 (0.15 – 0.10) x 100	5
+ PV of EVA from new investments in year 2 through 5 $\frac{0.15-0.10 \times 100}{1.1+1.1^2+1.1^3+1.1^4}$	15.85
Value of Soft Solution	170.85

The value of existing assets is therefore ₹150 lakhs and the value of future opportunities is ₹20.85 lakhs.

(b) Reliable Industries Ltd. (RIL) is considering a takeover of Sunflower Industries Ltd. (SIL). The particulars of two companies are given below

	RIL	SIL
Earnings After Tax (₹)	**20,00,000**	**10,00,000**
Equity shares (No.)	**10,00,000**	**10,00,000**
EPS (₹)	**2**	**1**

P/E Ratio (Times)	10	5

Required:

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

(ii) Assuming that the management of RIL estimates that the shareholders of SIL will accept an offer of one share of RIL for four shares of SIL. If there are no synergic effects, what is the market value of the post-merger RIL? What is the new price for share? Are the shareholders of RIL better or worse off than they were before the merger?

(iii) Due to synergic effects, the management of RIL estimates that the earnings will increase by 20%. What is the new post-merger EPS and price per share? Will the shareholders be better off or worse off than before the merger? [8]

Answer:

(i) Market value of companies before merger

Particulars	RIL	SIL
EPS (₹)	2	1
P/E ratio	10	5
Market price per share (₹) (EPS × P/E ratio)	20	5
Equity shares (No.)	10,00,000	10,00,000
Total market value (MPS × No. of Eq. Shared)	2,00,00,000	50,00,000

(ii) Post merger effect on RIL

Particulars	₹
Post merger earnings ₹ (20,00,000 + 10,00,000)	30,00,000
Equity shares $\left(10,00,000+10,00,000 \times \frac{1}{4}\right)$ As exchange ratio is 1 : 4	12,50,000
EPS : (30,00,000/ 12,50,000)	2.4
P/E ratio	10.00
Market price per share (₹) (EPS × P/E ratio) i.e., 10 × 2.4	24
Total Market Value (MPS × No. of EqShares) i.e., (12,50,000 × 24)	3,00,00,000

Gains from Merger

Post Merger Market value of the firm	= ₹ 3,00,00,000
Less : Pre-Merger market value	
RIL 2,00,00,000	
SII 50,00,000	= ₹ 2,50,00,000
	= ₹50,00,000

Apportionment of Gains between shareholders

Particulars	RIL	SIL
Post merger market value		
10,00,000 × 24	2,40,00,000	
2,50,000 × 24		60,00,000
Less : Pre merged market value	2,00,00,000	50,00,000
Gain	40,00,000	10,00,000

Thus the shareholders of both the Co. have gained from merger

(iii) Post Merger Earnings

Increase in earning by 20%

New earnings: ₹ 30,00,000 × 120%	= 36,00,000
No. of equity share	= 12,50,000
EPS = ₹ 36,00,000 ÷ 12,50,000	= ₹ 2.88
P/E ratio	= 10
Market price per share = ₹ 2.88 × 10	= ₹ 28.80
Total market value (12,50,000 x 28.80)	= ₹3,60,00,000

Gains from Merger

Post Merger Market Value of the firm	₹3,60,00,000
Less: Pre-Merger market value RIL = ₹2,00,00,000 SIL = ₹50,00,000	₹2,50,00,000
	₹ 1,10,00,000

Apportionment of Gains between Shareholders

Particulars	RIL	SIL
Post merger market value RIL = (10,00,000 x 28.80) SIL = (2,50,000 x 28.80)	2,88,00,000	72,00,000
Less: Pre merged market value	2,00,00,000	50,00,000
Gain	88,00,000	22,00,000

∴ Hence, shareholders will be better off than before the merger situation.

7.(a) Following are the information of two companies for the year ended 31st March, 2016:

Particulars	Company X	Company Y
Equity Shares of ₹10 each	**20,00,000**	**25,00,000**
10% Pref. Share of ₹10 each	**15,00,000**	**10,00,000**
Profit after tax	**7,50,000**	**7,50,000**

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

(i) What is the rate you would pay to the Equity Shares of each company?
   a) If you are buying a small lot.
   b) 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 'X' retains 30% and company 'Y' 10% of the profits? [8]

Answer:

(i) Buying a small lot of equity share: 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:

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

$$\text{Campany X}: ₹\frac{2.4}{18} \times 100 = ₹13.33$$

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

(ii) 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:

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

$$\text{Campany X}: ₹\frac{3}{18} \times 100 = ₹16.67$$

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

(iii) Preference Dividend coverage ratios of both companies are to be compared to make such decision.

Preference dividend coverage ratio is given by:

$$\frac{\text{Profit after tax}}{\text{preference dividend}} \times 100$$

$$\text{Campany X}: ₹\frac{7,50,000}{1,50,000} = 5 \text{ times}$$

$$\text{Company Y}: ₹\frac{7,50,000}{1,00,000} = 7.5 \text{ times}$$

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

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

The new rates will be calculated as follows:

Company X: ₹ (2.1/ 18) x 100 = ₹11.67

Company Y: ₹ (2.34/ 18) x 100 = ₹13.00

Working Notes:

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

	Company X	**Company Y**
Profit after tax	7,50,000	7,50,000
Less: Preference dividend	1,50,000	1,00,000
Earnings available to equity shareholders (A)	6,00,000	6,50,000
Number of Equity Shares (B)	2,00,000	2,50,000
Earnings per share (A/B)	3.0	2.60
Retained earnings 20%	1,20,000	1,30,000

Dividend declared 80% (C)	4,80,000	5,20,000
Dividend per share (C /B)	2.40	2.08

2. Computation of dividend per share (Company X retains 30% and Company Y 10% of profits)

Earnings available for equity shareholders	6,00,000	6,50,000
Number of equity shares	2,00,000	2,50,000
Retained Earnings	1,80,000	65,000
Dividend Distribution	4,20,000	5,85,000
Dividend per share	2.10	2.34

(b) ABC Ltd Company currently sells for ₹32.50 per share. In an attempt to determine if ABC Ltd is fairly priced, an analyst has assembled the following information.

- **The before-tax required rates of return on ABC Ltd debt, preferred stock, and common stock are 7.0 percent, 6.8 percent, and 11.0 percent, respectively.**
- **The company's target capital structure is 30 percent debt, 20 percent preferred stock, and 50 percent common stock.**
- **The market value of the company's debt is ₹145 million and its preferred stock is valued at ₹65 million.**
- **ABC Ltd's FCFF for the year just ended is ₹28 million. FCFF is expected to grow at a constant rate of 4 percent for the foreseeable future.**
- **The tax rate is 35 percent.**
- **ABC Ltd has 8 million outstanding common shares.**

What is ABC Ltd's estimated value per share? Is ABC Ltd's stock under priced? [8]

Answer:

The weighted-average cost of capital for XYZ Ltd Company is:

WACC = 0.30(7.0%) (1 - 0.35) + 0.20(6.8%) + 0.50(11.0%) = 8.225%

The firm value is:

Firm value = $FCFF_0$ (1 + g) / (WACC - g)

Firm value = 28(1.04) / (0.08225 - 0.04) = 29.12/0.04225 = ₹689.23 million

The value of equity is the firm value minus the value of debt minus the value of preferred stock: Equity

= 689.23 - 145 - 65 = ₹479.23 million.

Dividing this by the number of shares gives the estimated value per share of ₹479.23 million/8 million shares = ₹59.90.

The estimated value for the stock is greater than the market price of ₹32.50, so the stock appears to be undervalued.

8. Write a short note on any four of the following: **[4×4=16]**

(a) Financial Modeling
(b) Distress Prediction
(c) Different Methods Of Valuing Self-Generated Brands
(d) Efficient Market Hypothesis
(e) Who are the participants in the Merger and Acquisition Process?

Answer:

(a) Financial Modeling:

Financial modeling is the task of building an abstract representation of a real world financial situation. This is a mathematical model designed to represent the performance of a financial asset or portfolio of a business, project or any other investment. This is the process by which a firm constructs a financial representation of some, or all, aspects of the firm or given security. The model is usually characterized by performing calculations, and makes recommendations based on that information. The model may also summarise particular events for the end user and provide direction regarding possible actions or alternative.

Financial modeling is the task of building a financial model, or the process of using a financial model for financial decision making and analysis. It is an abstract representation of a financial decision making situation. Financial models are not limited to profit making entities. Nonprofits, governments, personal finances, all can be represented by financial models.

Uses of Financial Modeling:
Financial modeling is used to do historical analysis of a company's performance, and to do projections of its financial performance into the future. Project finance is another area that lends itself to financial models. A project (such as a real estate investment or a new factory) can be analyzed using a financial model. It does not have to be complete business.

Financial Modeling is not just for the Accountant or Financial Consultant, who are called upon to develop financial projections, but also for business owners and managers with improved user interfaces and heavy use of graphics, it is now feasible for non-technical people to use a financial model to test option and make decisions based on the projected impact on profits and cash flow.

(b) Distress Prediction:

Distress Prediction is an essential issue in the field of finance. It is a very important tool used for the purpose of prediction of future probable financial condition of a corporate entity so that any financial crisis-that may crop up in the near future can be predicted in advance. Using various models of Distress Prediction, the management of a company comes to know about its future probable financial condition beforehand and accordingly, it may adopt appropriate remedial measures to avoid the financial crisis as predicted through the various models of Distress Prediction. Distress Prediction is considered a very significant tool for sustainment of a company in the long-run. As a company can have a predicted notion about occurrence of its financial hardship in future, it gets a scope to avoid such a situation by taking proper preventive measures in advance. Therefore, Distress Prediction plays a very significant role in the survival of a company in the long-run.

Following are the two types of models generally used for prediction of Corporate Distress/Sickness:

i. Univariate Model: In this model, a single variable is used for Corporate Distress Prediction.
ii. Multivariate Model: In this model, a number of variables are used for Corporate Distress Prediction.

(c) Different Methods Of Valuing Self-Generated Brands:

Important methods in valuation of self generated brands are discussed below:

- **Historical cost method**: Here Brand value is the sum total of Brand Development cost + Brand Marketing and Distribution Cost + Brand Promotion cost including advertising and other cost.
- **Replacement Price Model**: It is the opportunity cost of investment made for replacement of brand, Brand Value = Replacement Brand Cost.
- **Market Price Model**: Here Brand value is net realizable value on sale in the market.
- **Current Cost Model**: According to this approach the current corporate brands are valued at the current value to the group which is reviewed annually and not subject to amortization.
- **Potential Earning Model**: The potential Earning model is based on the estimated potential earning that would be generated by a brand and their capitalization by using appropriate discount rate. The volume of revenues raised by a brand in the market determines its value.

Total market value of brand = Net brand revenue / capitalization rate

Net - Brand revenue = (Brand units x Unit brand price) - (Brand units x Unit brand cost) -(Marketing cost + R & D cost + tax costs)

(d) Efficient Market Hypothesis

The purpose of any stock market of the world is to bring together those people who have funds to invest with those who need funds to undertake investments. Entities which seek to raise equity are asking investor for a permanent investment. Investors may not be incorrect to invest unless they are convinced that they would be able to realize their investments at a fair price at any time in the future.

For these to happen stock market must price shares efficiently. Efficient pricing means incorporating into the share price, determined and or decided for trading, impacts of all factors that could possibly effect. In an efficient market, investors can buy and sell share at a fair price and entities can raise funds at a cost that reflects the risk of the investment they are seeking to undertake.

A considerable body of financial theory has been building a hypothesis that in an efficient market, prices fully and instantaneously reflect all available information. The efficient market hypothesis is, therefore, concerned with information and pricing efficiency.

Three levels or forms of efficiency have been defined. These are depended on the amount of information available to the participants in the market.

(e) Participants in the Merger and Acquisition Process

There are many professionals who play an essential role in the successful completion of a deal.

- **Investment Bankers:** Investment bankers are always at the forefront of the acquisition process. They offer strategic and tactical advice, screen potential buyers and sellers, make initial contact with a seller and buyer and provide negotiation support, valuation and deal structuring.
- **Lawyers:** The legal framework surrounding a typical transaction has become so complicated that no one individual can have sufficient expertise to address all the issues. So, legal teams consist of more than a dozen lawyers each of whom represents a specialised aspect of the law.

- **Accountants:** Accountants perform the role of auditors by reviewing the target's financial statements and operations through a series of interviews with senior and middle level managers.
- Valuation Experts: They build models that incorporate various assumptions such as costs or revenues growth rate.
- **Institutional Investors**: Institutional investors can announce how they intend to vote on a matter and advertise their position in order to seek support and have more influence.
- **Arbitrageurs:** Arbitrageurs provide market liquidity during transactions. With the number of merger arbitrageurs increasing, they are becoming more proactive in trying to anticipate takeover situations. Their objective is to identify the target before the potential acquirer is required by law to announce its intentions