FINAL EXAMINATION

GROUP IV

(SYLLABUS 2012)

SUGGESTED ANSWERS TO QUESTIONS

DECEMBER 2016

Paper- 20: FINANCIAL ANALYSIS AND BUSINESS VALUATION

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

The figures in the margin on the right side indicate full marks.

Please: (1) Answer all bits of a question at one place.

(2) Open a new page for answer to a new question.

SECTION A

In this section Answer Question No. 1(a) and 1(b) which is compulsory.

1. (a) Answer the following: 2×6 = 12

(i) Star Ltd. is presently operating at 40% margin of safety (MOS). Compute its Degree of Operating Leverage (DOL).

(ii) Compute DSCR from the following annual data: [₹ Lakhs] PAT 240, Depreciation 80, Interest expense 80 and principal repayment installment 120.

(iii) Can Net Working Capital of a firm be negative? Support your answer with necessary reason(s).

(iv) If a company has ROE (Return on Equity) of 24%, and its Market to Book Value Ratio is 3.6 : 1, then you are required to determine P/E ratio.

(v) The current ratio of X Ltd. is 2 : 1, while quick ratio is 1.80 : 1. If the current liabilities are ₹40,000, calculate the value of stock.

(vi) The projected cash operating expenditure of a company for the next year is ₹ 1,82,500. It has quick current assets amounting to ₹40,000. Determine the defensive-interval ratio and comment.

(b) State whether the following statements are true or false: 1×8 =8

(i) If EPS (Earnings Per Share) of a firm is negative, then one should take the absolute value of it (that is positive value of EPS) while calculating P/E Ratio.

(ii) If a bond is trading at a discount and assume that its maturity has been increased from 8 years to 10 years, then its price will increase in the bond market.

(iii) Tobin's Q compares the market value of a company with the book value of its assets.

(iv) Beta (β) represents systematic risk.

(v) Higher risk firms will have lower Price Earnings ratio than lower risk firms.

(vi) The higher the Z-Score, there is a greater possibility of bankruptcy.

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

(viii) According to basic valuation model the value of a financial asset is present value of its expected future cash flows.

Answer: 1 (a)

(i) MOS 40% means 40% reduction in sales will bring sales to BEP, i.e. reduce profit by 100% Thus, DOL = Rate of Change in Profits/Rate of Changes in Sales = 100/40 = 2.5

(ii) DSCR = (PAT + Depreciation + Interest)/(Principal Installment + Interest) = (240 + 80 +80) / (120 + 80) = 2

(iii) Net Working Capital of a firm can be negative; it may be possible when the current assets are less than current liabilities. Normally, negative working capital is not considered a good financial position, but if a company is strong enough in negotiation to buy raw material etc. on credit for a longer period as compared to extending credit to their own customers, it may be increasing the profitability of the company.

(iv) P/E Ratio = Price/EPS = (Price/Book Value) × (Book Value/EPS) = Market to Book Value/ROE = 3.6/24% = 15

(v) Value of stock: ₹ 8,000 (Hint: (Current assets-Stock)/current liabilities) = 1.8)

(vi) Defensive interval ratio = 40000/500 = 80 days. The quick current assets are sufficient to meet operating expenses for 80 days.

1 (b)

(i) FALSE; if EPS of a firm is negative, then we do not define P/E Ratio.

(ii) FALSE; when a bond is trading at a discount and its maturity is increased, then its price will fall.

(iii) FALSE; Tobin's Q is the ratio of the market value of a firm (as measured by the market value of its outstanding shares and debt) divided by the replacement cost of the company's assets.

(iv) TRUE

(v) TRUE

(vi) FALSE. The higher the Z-Score, there is a lesser possibility of bankruptcy.

(vii) FALSE. Realistic, error free and flexible are the attributes of a good financial model.

(viii) TRUE

Section – B

In this section answer any five questions from the following.

2. (a) Ms. Nisha is an avid investor in fixed income securities. Her portfolio of Bond does not have bonds from AAA rated companies. She is considering purchase of an AAA rated Bond. Two such bonds of AAA rated companies, Bond-A and Bond-B are available in the market that have following features:

	Bond-A	Bond-B
Face value (₹)	100	100
Coupon rate per annum	15%	12%
Periodicity of coupon	Semi-annual	Semi-annual
Time remaining for maturity	3 years	4 years
Current Market Price (₹)	110	120

Her expectation of return from the investment in AAA rated bonds is 10% p.a. which is slightly above the yields in the government securities.

Ms. Nisha is indifferent to the investment horizon of 3 or 4 years.

Required:

Which of the Bonds should she (Ms. Nisha) buy and why?

[Given: PVIFA (5%, 6 periods) = present value of annuity of ₹1 received for 6 periods discounted at the rate of 5% per period = 5.0757, PVF (5%, 6 periods) = present value of ₹1 received at the end of 6 periods discounted at the rate of 5% per period = 0.7462.

PVIFA (5%, 8 periods) = present value of annuity of ₹1 received for 8 periods discounted at the rate of 5% per period = 6.4632, PVF (5%, 8 periods) = present value of ₹1 received at the end of 8 periods discounted at the rate of 5% per period = 0.6768.] **6**

(b) The Balance Sheets of MARAS LTD. for the years ended on 31.03.2015 and 31.03.2016 are as follows: **(Amount in ₹ Lakh)**

	As at 31.03.15	As at 31.03.16
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 **7+3=10**

Answer: 2 (a)

Fair value of the bond must be compared with the current market price to make a choice of investment:

Computation of Fair value of Bond A and Bond B

Bond-A	Bond - B
Face Value = ₹ 100	Face value = ₹ 100
The number of half yearly period = 6	The number of half yearly period = 8
Half yearly interest payment = 7.5%	Half yearly interest payment = 6%
Discount rate applicable to half yearly period = 5%	Discount rate applicable to half yearly period = 5%
V = PVIFA (5%, 6 period) × 7.50 + 100 × PVF (5%, 6 periods)	V = PVIFA (5%, 8 periods) × 6 + 100 × PVF (5%, 8 periods)
= 7.50 × 5.0757 +100 × 0.7462	= 6.00 × 6.4632 +100 × 0.6768
= ₹112.69	= 38.78 + 67.68
Fair Value = ₹112.69	Fair Value = ₹106.46
Market price: ₹ 110.00	Market price: ₹ 120.00

Decision: Bond A is undervalued by ₹ 2.69 and should therefore, be bought.

But, Bond B being overvalued is not worth the purchase.

2 (b)

(i) COMMON SIZE BALANCE SHEET OF MARAS LTD. (₹ in lakhs)

	As at 31.03.2015	% of Total	As at 31.03.2016	% 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	31256.89	53.270	39156.40	52.265
Non-current liabilities:				
Secured loans	4784.56	8.154	3300.09	4.405
Unsecured loans	9128.31	15.557	14939.75	19.941
Deferred tax liabilities	3491.00	5.950	3936.27	5.254
Current Liabilities:				
Other current liabilities	8432.77	14.372	10522.73	14.045
Provisions	856.44	1.460	1496.31	1.997
	58676.64	**100.00**	**74919.45**	**100.00**
ASSETS:				
Non-current Assets:				
Fixed assets (Net)	31830.23	54.247	30941.81	41.300

Capital work in progress	3764.07	6.415	11502.92	15.354
Investments	8125.67	13.848	11031.80	14.725
Current assets:				
Inventories	6068.25	10.342	7123.77	9.509
Trade Receivables	1866.21	3.180	3113.79	4.156
Cash and bank balance	917.68	1.564	2140.03	2.856
Other current assets	1.53	0.003	36.27	0.048
Loan and advances	6103.00	10.401	9029.06	12.052
	58676.64	**100.00**	**74919.45**	**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 4.405% 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 31/03/2015 to 52.27% at end of year 31/03/2016.
4. Although the proportion of 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) Balance Sheet of AKANSHA LTD. as on 31.03.2015 and 31.03.2016 are as follows:

(Amount in ₹ lakh)

	As at 31.03.15	**As at 31.03.16**
Equity & Liabilities		
Shareholder's Fund		
Share capital	**600.00**	**600.00**
Reserves & Surplus	**450.00**	**480.00**
Non-Current Liabilities:		
Long-term Borrowings:		
6% debentures (Unsecured)	**150.00**	**150.00**
Mortgage on freehold property	**54.00**	**28.50**
Current Liabilities:		
Trade Payables	**90.00**	**90.00**
Proposed dividend (Subject to TDS)	**45.00**	**46.50**
Provision for taxation	**42.00**	**75.00**
Secured overdraft (by a floating charge on assets)	**30.00**	**165.00**
	1,461.00	**1,635.00**

Assets		
Non-Current Assets:		
Freehold property	**450.00**	**480.00**
Plant & Machinery (Net)	**270.00**	**330.00**
Non-Current Investments:		
Unquoted shares-investment	**300.00**	**300.00**
Quoted shares-investment	**225.00**	**225.00**
(Market value ₹240 lakh in 2015 and ₹300 lakh in 2016)		
Current Assets:		
Inventories	**105.00**	**150.00**
Trade receivables	**90.00**	**150.00**
Cash at bank	**21.00**	**------**
	1,461.00	**1,635.00**

The following additional information for the year 2015 – 2016 is relevant:

	₹ lakh
Credit sales	**1,350**
Credit Purchase	**1,040**
Overheads	**171.50**
Depreciation on Plant & Machinery	**35**
Dividend for 2014 – 15 was paid in full.	
Amount paid towards taxation for the year 2014 – 15	**43**

Note: The interest on Mortgage Loan is to be ignored.

You are required to prepare a statement of cash flows for the year ended 31st March, 2016 under indirect method. 10

(b) What are the internal factors responsible for corporate distress? 4

(c) A firm's current assets and current liabilities are ₹16,000 and ₹10,000 respectively. How much can it borrow on a short term basis to purchase inventories without reducing the Current Ratio below 1.25? 2

Answer: 3 (a)

Akansha Ltd.

CASH FLOW STATEMENT FOR THE YEAR ENDED 31st MARCH, 2016 (₹ in lakhs)

Cash flows from operating activities:	₹	₹	₹
Net profit			
Net profit for 2015-16	480		
Less: Net Profit for 2014-15	450	30	
Add: Non - operating expenses			
Depreciation on Plant and Machinery	35		
Debenture interest	9		
Provision for taxation	76		
Proposed dividend	46.50	166.50	
		196.50	
Less: Non-Operating Income		Nil 196.50	
Add: Decrease in Current Assets or Increase in current		Nil	

liabilities		196.50	
Less: Increase in current assets or decrease in current liabilities			
Increases in inventories	45		
Increases in trade receivables	60	(105)	
		91.50	
Less: Income tax paid		43.00	
Net cash flow from operating activities			48.50
Cash flows from investing activities:			
Purchase of plant and machinery	(-)95		
Purchase of freehold property	(-)30		
Net cash flows from investing activities			(-) **125.00**
Cash flows from financing activities:			
Repayment of Mortgage loan	(-) 25.50		
Payment of interest on debentures	(-) 9.00		
Payment of dividend Net cash flows from financing activities	(-) 45.00		**(-) 79.50**
Net decrease in cash or cash equivalent			(-) 156.00
Add: Cash and cash equivalent at the beginning (₹ 21 lakhs - ₹ 30 lakhs)			(-) 9.00
Cash or cash equivalent at the end (31.03.2016)			(-) **165.00**

Working Notes:

(i) Plant and machinery Account

Dr. Cr.

(₹ in lakhs)

	₹		₹
To Balance b/d	270	By Depreciation	35
Bank-Purchase	95	Balance c/d	330
	365		365

(ii) Provision for taxation Account

Dr. Cr.

(₹ in lakhs)

	₹		₹
To bank A/c	43	By Balance b/d	42
Balance c/d	75	Profit & Loss A/c reserve	76
	118		118

3 (b)

Internal factors responsible for corporate distress are primarily as follows:-
Outdated production process, high material cost, poor labour productivity, lack of efficient personnel/skilled labour, high wastage in production process, excessive manpower, high labour turnover, lack of quality leadership, labour agitation, improper staff recruitment policy, huge overhead costs, wrong site selection, wrong estimation of demand, production of goods without market survey, improper sales strategy, poor customer service, defective cash, inventory and receivables management.

3 (c)

(i) Let the maximum short term borrowing be B. The current ratio with this borrowing should be 1.25

(16,000 + B)/ (10,000 + B) = 1.25 or 0.25 B = 16,000 – 12,500

Or $B = \frac{3,500}{0.25} = 14,000$

Maximum permissible short term borrowing is ₹14,000

4. The following are the summarized balance Sheet and Profit & Loss statement of MEGLOW Ltd.

Balance sheet as at 31st March, 2016 **(Amount in ₹ Lakh)**

	As at 31.03.16
Equity & Liabilities	
Shareholder's Fund:	
Share Capital:	
Paid up capital (1,00,00,000 equity shares of ₹10 each fully paid)	**1,000**
Reserves & Surplus	
Retained Earnings	**300**
Non-Current Liabilities:	
Long-term borrowings:	
Debentures	**1,750**
Current Liabilities:	
Trade payables	**450**
Other current liabilities	**250**
Total	**3,750**
Assets	
Non-Current Assets:	
Fixed assets (Net)	**2,000**
Current Assets:	
Inventory	**1,000**
Trade Receivables	**437**
Cash and cash equivalents	**125**
Other current assets	**188**
Total	**3,750**

Profit & Loss statement for the year ended 31st march, 2016

(Amount in ₹ Lakh)

Net Sales		**4,000.00**
Less: Cost of goods sold		**3,275.00**
Gross margin		**725.00**
Less: Administrative and selling expenses	**100.00**	
Less: Finance Costs (interest expenses)	**112.50**	

Total	**212.50**	**212.50**
Earnings before tax		**512.50**
Less: Tax paid		**179.38**
Earnings after tax		**333.12**

The following Additional Information is available:

Market price per share (₹)	**30**
Earnings per share (EPS) (₹)	**3.3312**
Industry's average Ratios are:	
Quick ratio	**1.80 : 1**
Current ratio	**2.40 : 1**
Sales to Inventory	**8 times**
Average collection period	**38 days**
Interest coverage ratio	**7**
Profit margin	**7%**
Debt to Assets Ratio	**40%**
Price to earnings ratio	**16**
Return on Total Assets	**10%**

MEGLOW LTD. would like to borrow ₹125.40 lakh from HDFD Bank for less than a year.

Required:

(i) Evaluate the company's current financial position by calculating ratios that you feel would be useful for the Bank's evaluation.

(ii) Do you think, the bank should grant the loan? 9+7= 16

Answer: 4

Before granting short term loan, the bank should consider liquidity position, profitability position and interest payment ability of the firm. So let us calculate the requisite ratios for this purpose.

Ratio	Formula used	Value of ratio of Meglow Ltd.	Industry' s average ratio	Remarks
(A) Liquid ratio				
(i) Current Ratio	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$	1750/700 = 2.5	2.40	Above standard
(ii) Quick Ratio	$\frac{\text{Current Assets - Inventory}}{\text{Current Liabilities}}$	(1750 -1000)/700 = 1.07	1.80	Below standard
(iii) Inventory turnover ratio	$\frac{\text{Cost of goods sold}}{\text{Inventory}}$	3275/1000 = 3.28	8	Below standard
(iv) Average Collection period	$\frac{\text{Debtors} \times 365 \text{ days}}{\text{Sales}}$	(437 × 365)/4000 = 40 days	38 days	2 days longer
(v) Debt to assets	Debt/Assets	1750/3750 = 46.67%	40%	Above standard
(B) Profitability Ratio				

(i) Profit margin	Net Income after tax × 100 / Sales	(333.12 × 100)/4000 = 8.33%	7%	Above the standard
(ii) Price to earnings ratio	Market Price per Share / Earning per share	30/3.3312 = 9.01	16	Below standard
(iii) Return on total Assets	Net profit after tax / Total assets	(333.12 × 100)/3750 = 8.88%	10%	Below standard
(C) Coverage ratio (i) Interest coverage ratio	Profit before interest and tax / Interest	625/112.50=5.56 times	7	Below standard

Comments on the liquidity, profitability and interest payment capacity of Meglow Ltd:

Liquidity Position: The current ratio *of* Meglow Ltd. is little-bit higher than industry's average ratio. So it may be thought that liquidity position of the firm is sound. But if we look at the quick ratio, we will see that the position is not at all satisfactory. The quick ratio of Meglow Ltd. is lower than industry's average ratio by as much as (1.80 -1.07) × 100/(1.80) = 40.56%

Clearly this has resulted due to high inventory holding which is around 57% of total current assets. That inventory holding is disproportionately high which is evident from inventory turnover ratio. While the industry's average inventory turnover ratio is 8 it is only 3.28 in case of Meglow Ltd. This poor turnover ratio indicates a very inefficient inventory management. The company's debt-equity ratio is only 1.88, signifying satisfactory level of debt financing.

Profitability Position: The profit margin ratio of Meglow Ltd. is slightly better than industry's average. But the return on total assets of the company is far below the industry's average. It is only 8.88% while it should be around 10% as per industry norm; it indicates that Meglow Ltd. is less efficient in utilizing its assets compare to industry average. So to make the return on total assets at par with industry average, Meglow Ltd. has to either reduce the investments in total assets or increase sales volume. The price-earnings ratio of Meglow Ltd. is too lower compared with the industry's average. It indicates that investors' evaluation about the prospect of the firm is very poor.

Interest Payment Capacity: Interest payment capacity of Meglow Ltd. is satisfactory as the interest Coverage ratio is near to industry's average. Further the current ratio is above industry average and quick ratio is more than 1.

(ii) The bank should grant the loan to the company because-

a) Its current and quick ratios are very satisfactory.
b) Its interest coverage ratio is almost at par with industry average and the company is not likely to face any difficulty in meeting the interest liability;
c) Its debt-equity ratio is not high.

However, the bank should probe deep about the cause of high investment in inventory.

5. (a) 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 swap ratio in terms of current market price?
(ii) What is the EPS of M Ltd. after acquisition?
(iii) What is the expected market price per share of M Ltd. after acquisition assuming that P/E ratio of M Ltd. remains unchanged?
(iv) Determine the market value of the merged firm. 12

(b) A Ltd. is planning to acquire T Ltd. and the following information is provided in relation to the acquisition about both the companies:

Particulars	A Ltd.	T Ltd.
Profit after tax (₹ in lakhs)	250	50
Number of shares outstanding (in lakhs)	20	10
P/E Ratio	16	12

Required:

(i) What will be the swap ratio if it is to be determined on the basis of market prices?

(ii) Assuming that the swap ratio is on the basis of market price, what will be the market value of A Ltd. after acquisition if the merged entity is expected to have a P/E ratio of 20? 2+2 = 4

Answer: 5 (a)

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
ESP	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 +. 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
₹ 2400.2 lakhs.

5 (b)

Particulars	A Limited	T Limited
Profit After Tax	₹250.00	₹50.00
Number of Shares Outstanding	20	10
P/E Ratio	16	12
EPS	₹12.50	₹5.00
Price ,	₹200.00	₹60.00
	0.30:1	
Swap Ratio on the basis of Market Price	(That is 0.3 share of A Ltd for one share of T Ltd)	

Assuming that there is no synergy gains, Profits After Tax of the merged entity will be	₹300.00
Given the swap ratio of 0.30 shares of A Limited for one share of T Limited, the number of new shares issued by A Limited will be	3
Total Number of shares outstanding of A Limited after acquisition will be	23
EPS of merged entity will be	₹ 13.04
Given the P/E Ratio of 20, the market price of the merged entity will be	₹260.80

6. (a) Calculate the expected rate of return of the security from the following information:

(i) Beta of a security is 0.5; Expected rate of return on portfolio is 15% p.a.; Risk free rate of return is 6% p.a.

(ii) If another security has an expected rate of return of 18% p.a.; what would be its Beta? 3+3= 6

(b) Determine which of the following two mutually exclusive projects should be selected if they are (i) one-off investments or (ii) if they can be repeated indefinitely: 10

Particulars	Project A	Project B
Investment (₹)	**40,000**	**60,000**
Life (years)	**4**	**7**
Annual net cash inflows (₹)	**15,000**	**16,000**
Scrap value (₹)	**5,000**	**3,000**

Cost of capital is 15% p.a. Ignore taxation. The present value of annuity of ₹ 1 for four years and seven years at 15% p.a. are respectively 2.8550 and 4.1604. Discounting factor at 15% p.a. at four years and seven years are respectively 0.5718 and 0.3759.

Answer: 6 (a)

i) Calculation of expected rate of return of the security-
= 6 + 0.5 (15 - 6)
= 6 + 4.5
= 10.5%

ii) Calculation of Beta of another security whose expected rate of return is 18%
18 = 6+ Beta (15 - 6)
Beta.9 = 18 - 6
Beta = 12/9
=1.33

6 (b)

(i) Calculation of NPV of project A and B

Project A (figures in rupees)

Year	Cash flow	Discounting factor	Present value
0	(40000)	1.00	(40000)
1 to 4	15000	2.855	42825
4	5000	0.5718	2859
NPV = 5684			
Project B			

Year	Cash flow	Discounting factor	Present value
0	(60,000)	1.00	(60,000)
1 to 7	16,000	4.1604	66,566
7	3,000	0.3759	1,128
NPV = 7694			

If project A and B are one-off investments, then project B is preferable, as it has higher absolute NPV.

(ii) Uniform annual equivalent:

Project A= 5684/2.855 = ₹ 1991

Project B =7694/4.1604 = ₹ 1849

Choose Project A for continual repeats.

7. (a) Kovith Ltd. is contemplating to sell a copyright of a book titled 'Valuation' to another publisher. You are required to estimate the value of the copyright from the following data:

The book is expected to generate ₹2,50,000 in after-tax cash flows each year for the next three years and ₹1,50,000 a year for subsequent two years. These are the net cash flows after meeting all expenses like royalties, promotional expenses and production costs. About 60% of these cash flows are from bulk orders of large firms stable and predictable, while the rest is from small orders unstable and unpredictable. The cost of capital to be applied to stable cash flows is 8% and to unstable cash flows is 12%. 6

Discounting Factor	Year 1	Year 2	Year 3	Year 4	Year 5
8%	0.9259	0.8573	0.7938	0.7350	0.6806
12%	0.8929	0.7972	0.7118	0.6355	0.5674

(b) Water Ltd. acquired 100% of Air Ltd. for ₹4,000 lakhs. As on the date of acquisition, the net assets of the companies were:

	(₹ lakhs)	
	Water Ltd.	Air Ltd.
Tangible Fixed Assets	2800	2400
Brand valued by Management	200	600
Net Current Assets	900	700

Compute goodwill on acquisition under the following situations:

(i) Ignore brand value

(ii) Consider brand value 2+2 = 4

(c) Calculate value per share from the following current year data: 6

Earnings per share: ₹50

Capital Expenditure per share: ₹40

Depreciation per share: ₹36

Increase in Non-cash working capital per share: ₹16

Debt financing ratio: 0.25

FCFF is expected to grow at 4% p.a. The Beta for stock is 1.1, Market return 14% p.a. and Treasury bond interest rate is 8% p.a.

Answer: 7 (a)

Year	60% Stable cash flows ₹	40% Unstable cash flows ₹	₹
1	1,50,000	1,00,000	
2	1,50,000	100000	
3	1,50,000	100000	
4	90,000	60000	
5	90,000	60000	
Discounting rate	8%	12%	
Σ DCF	513954	312364	
Value of Copyright			8,26,318

7 (b) **(₹ in lakhs)**

	Air Ltd.	
	(I)	**(II)**
Tangible Fixed Assets	2400	2400
Brand valued by Management	-	600
Net Current Assets	700	700
Net asset value (A)	3100	3700
Cost of acquisition (B)	4000	4000
Goodwill (B - A)	900	300

7 (c)

Cost of equity = 8% + 1.1 (14 - 8)= 14.6%

FCFF = EPS - (I-D/E ratio)(Capital expenditure - Depreciation + Increase in non-cash working Capital)

= 50 -0 .75*(40 – 36 + 16) = 35

Value per share = FCFE* (1+ g)/(Ke - g) = 35 * (1 + 0.04)/(14.6% - 4%) = 36.4/0.106= ₹ 343.40

8. Write short notes on any four of the following: **4 × 4 = 16**

(a) Financial Modeling

(b) Shareholder Value Analysis

(c) Du Pont Analysis

(d) Valuing Synergy

(e) Distress Prediction

Answer: 8

(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) Shareholder value analysis:

Shareholder Value Analysis (SVA) focuses on the creation of economic value for Shareholders, as measured by share price performance and flow of funds.
Shareholders Value is used to link management strategy and decision to the creating of value for shareholders.
Value Drivers: Factors or value Drivers which influence the Shareholder's Value are identified.
Example: Growth in Sales, Profit Margin, Capital Investments Decisions, etc.
Management Responsibilities: Management should pay attention to Value drivers, while taking investment and finance decisions.
Benefit

a) SVA helps the management to concentrate on activities which create value to the shareholders rather than on short-term profitability.
b) SVA and EVA together helps to strengthen the competitive position at the Firm, by focusing on wealth creation.
c) They provide an objective and consistent framework of evaluation and decision making across all functions, departments and units of the Company.

(c) Du Pont Analysis:

Du Pont Analysis is a method of performance measurement that was started by the Du Pont Corporation. The Du Pont analysis breaks down Return on Equity (that is, the returns that investors receive from the firm) into three distinct elements. This analysis enables the analyst to understand the source of superior (or inferior) return by comparison with companies in similar industries (or between industries). The Du Pont identity is less useful for industries, such as investment banking, in which the underlying elements are not meaningful. The company's

return on assets, ROA [=Net income/Assets, can be expressed as: ROA = (Net Income/Revenue) × (Revenue/Assets) = Profit Margin X Asset Turnover]

And the company's return on equity, ROE (= Net income/Equity), can be expressed as ROE = (net income/Revenue) × (Revenue/Assets) × (Assets/Equity) = ROA × Equity Multiplier.

Both the company's profitability (as measured in terms of profit margin) and efficiency (as measured in terms of asset turnover) determine its ROA. This ROA, along with the company's financial leverage (as measured in terms of its equity multiplier), contributes to its ROE. The changes in the company's ROE are to be noted and explained through its profit margin, asset turnover, and equity multiplier over time. The objective is to identify the company's strong area that can be capitalized upon and/or its weak area that must be improved upon.

(d) Valuing synergy:

The most general definition of synergy is a whole that is greater than the sum of its parts. In the context of takeovers, the additional value from synergy can come from a variety of sources, either operational or financial. The key to the existence of synergy is that the target firm controls a specialized resource that becomes more valuable when combined with bidding firm's resources. The specialized resource will vary depending on the type of merger. In case of horizontal merger (it occurs when two firms in the same line of business merge), the synergy must come from some form of economies of scale, which reduces costs, or from increased market power, which increases profit margin and sales. Valuing synergy requires assumptions about future cash flows and growth. The lack of precision in the process does not mean that an unbiased estimate of value cannot be made. Thus, we maintain that synergy can be valued by answering two fundamental questions:

1. What form is the synergy expected to take? Will it reduce costs as a percentage of sales and increase profit margins? Will it increase future growth?
2. When can the synergy be expected to start affecting cash flows instantaneously.

Once these questions are answered, the value of synergy can be estimated using an extension of discounted cash-flow techniques, first, the firms involved in the merger are valued independently by discounting expected cash flows to each firm at the weighted average cost of capital for that firm. Second, the value of the combined firm, with no synergy, is obtained by adding the values obtained for each firm in the first step. Third, the effects of synergy are built into the expected growth rates and cash flows, and the combined firms revalued with synergy. The difference between the values of the combined firm with synergy and the value of the combined firm without synergy provides a value for synergy.

(e) 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.