FINAL EXAMINATION

GROUP IV

(SYLLABUS 2008)

SUGGESTED ANSWERS TO QUESTIONS

DECEMBER 2014

Paper- 18: BUSINESS VALUATION MANAGEMENT

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

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

Answer Question No. 1 which is compulsory carrying 25 marks and any five from the rest.

1. (a) State whether the following statements are true or false: 1x5=5

(i) As per Capital Asset Pricing Model (CAPM), the only relevant risk to price a security is Systematic Risk and not both Systematic as well as Unsystematic Risk.

(ii) 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.

(iii) The method of capitalization of earnings for valuation of a business assumes constant earnings for infinite time.

(iv) Relative valuation is much more likely to reflect market perceptions and moods than DCF valuation.

(v) A firm with high return on equity is likely to command higher stock price for high payout ratio than for a low payout ratio.

(b) Fill in the blanks by using the words / phrases given in the brackets: 1x10=10

(i) A theory of Mergers and Acquisitions that explains the result of the winner's curse, causing a bidder to overpay is called _____. (Synergy/Hubris/Agency)

(ii) If a bond of a company is trading at a premium in the market then its yield-to-maturity will be _____ its current yield. (more than / less than / same as)

(iii) A ratio that presents willingness of the stock market to pay for one rupee of earning per share is called _____. (Price to Earnings Ratio/Earnings to Price Ratio/price to Net Profit Ratio)

(iv) Net asset value relies on _____. (accounting value / economic value)

(v) The _____ can value the company's flexibility to alter its initial operating strategy in order to capitalize on favourable future growth opportunities or to react so as to mitigate losses. (Real option technique approach / DCF approach)

(vi) Business is supposed to have a value for its performances _____ . (done in past / expected in future)

(vii) Relative valuation approach is also known as _____ approach. (market/income)

(viii) A firm having positive EAT but negative EVA is actually _____ Value. (creating/destroying)

(ix) CAPM helps in determining _____ of return. (actual rate/required rate)

(x) If capitalization rate is reduced by growth rate, the Cash Flows should also be reduced by _____. (capital expenditure/dividend payment)

(c) In each of the questions given below one out of the four options is correct. Indicate the correct answer: 2x5=10

(i) Company A has a beta of 0.4 and the cost of equity is 10% while Company B has a beta of 1.2 and the cost of equity is 18%, the prevailing risk free rate and market return are
- **(A) 6%, 12%**
- **(B) 6%, 16%**
- **(C) 7%, 17%**
- **(D) None of the above**

(ii) Which one of the following is not a measure taken by a target firm to avoid acquisition?
- **(A) Poison Puts**
- **(B) Poison Calls**
- **(C) Golden Parachute**
- **(D) Flip Over Pill**

(iii) If higher the risk free interest rate, then value of the European Call Option will be
- **(A) Lower**
- **(B) Higher**
- **(C) Remain unchanged**
- **(D) Nothing can be concluded**

(iv) A Ltd. acquires B Ltd. by exchange of shares. EPS of A Ltd. and B Ltd. shares are ₹ 50 and ₹ 40 respectively. No. of shares of A Ltd. and B Ltd. are 80,000 and 50,000 respectively. What No. of shares A Ltd. requires to issue to B Ltd. in order to ensure that EPS of A Ltd. would remain same after merger? (Assume that earnings of the merged company would be equal to the aggregate of the earnings of the companies before merger)
- **(A) Cannot be computed**
- **(B) 25,000**
- **(C) 40,000**
- **(D) 1,00,000**

(v) If an all equity firm has Cash from Operating Activities amounting to ₹ 60 lakhs, Depreciation ₹ 30 lakhs, increase in non-cash working capital ₹ 25 lakhs and Capital expenditure ₹ 20 lakhs, its Free Cash Flows to Equity amounts to (in ₹ lakhs)
- **(A) 90 lakhs**
- **(B) 45 lakhs**
- **(C) 40 lakhs**
- **(D) 65 lakhs**

Answer:

1. (a) (i) True
(ii) False
(iii) True
(iv) True
(v) False

(b) (i) Hubris
(ii) less than
(iii) Price to Earnings Ratio
(iv) accounting value
(v) Real option technique approach
(vi) expected in future
(vii) market
(viii) destroying
(ix) Required rate

(x) capital expenditure

(c) (i) (A) 6%, 16%
(ii) (B) Poison Calls
(iii) (B) Higher
(iv) (C) 40000 (B Ltd. Earnings/EPS of A Ltd. = 40 x 50000/50 = 40000)
(v) (C) 40 lakhs [60 - 20 = 40] [Dep. and WC change already adjusted in Cash Flows and no adjustment for cost of Debt Capital, the firm being all equity.]

2. Kitkat Ltd. contemplating to make an investment of ₹ 65,000 in a new machine for which the annual cash flows under favourable and unfavourable environment and corresponding probabilities for year 1 and year 2 are given below:
Cash flow for each year under favourable environment is ₹ 52,000 and under unfavourable environment is ₹ 20,000.

Environment in Year 1	Probability	Environment in Year 2	Probability
Favourable	**0.6**	**When year 1 was favourable**	
		Favourable	**0.6**
		Unfavourable	**0.4**
Unfavourable	**0.4**	**When year 1 was unfavourable**	
		Favourable	**0.5**
		Unfavourable	**0.5**

The company has the option to dispose of the machine at ₹ 34,000 at the end of year 1.
[Assume applicable rate of discounting to be 10%. PV of ₹ 1 for 1 year is ₹ 0.909]
(a) Decide whether the project should be discontinued (i.e., whether the machine should be disposed of) (i) under favourable environment in year 1 and (ii) under unfavourable environment in year 1.
(b) Evaluate the project under NPV approach (i) ignoring the option of discontinuing the project; (ii) after due consideration of the option of its discontinuity. 4+4+4+3=15

Answer:

2. (a) (i) When the Year 1 was favorable:

(Amount in ₹)

Environment in Year 2	Probability	Cash flows	Expected cash flows	PV of year 2 cash flows at the end of year 1
Favorable	0.6	52000	31200	28361
Unfavorable	0.4	20000	8000	7272
Value at the end of year 1 for continuing the project				35633
Disposal value at the end of year 1				34000

Since continuing value is greater than disposal value the project should be continued.

(ii) When the Year 1 was unfavorable:

Environment in Year 2	Probability	Cash flows	Expected cash flows	PV of year 2 cash flows at the end of year 1
Favorable	0.5	52000	26000	23634
Unfavorable	0.5	20000	10000	9090
Value at the end of year 1 for continuing the project				32724
Disposal value at the end of year 1				34000

Since continuing value is less than disposal value the project should be discontinued.

(b) (i) NPV of the project ignoring the option of disposal

Environment in Year 1	Probability	Year 1 CF	PV of year 2 CF at the end of year 1	Total	Expected cash flow at the end of year 1	PV of expected CF at year 0
Favorable	0.6	52000	35633	87633	52580[a]	47795[b]
Unfavorable	0.4	20000	32724	52724	21090	19171
Present value of cash flows						66966
Investment						65000
NPV						1966

[a] Expected CF = 87633 × 0.6 = 52580

[b] Discounted value of expected CF = 52580 × 0.909 = 47795

(ii) NPV of the project duly considering the option of disposal

Environment in Year 1	Probability	Year 1 CF	PV of year 2 CF at the end of year 1	Total	Expected cash flow at the end of year 1	PV of expected CF at year 0
Favorable	0.6	52000	35633	87633	52580	47795
Unfavorable	0.4	20000	34000[c]	54000	21600	19634
Present value of cash flows						67429
Investment						65000
NPV						2429

[c] Disposal value opted.

3. For valuation of brand X you have been provided with the following relevant information:

Projection for years 1 to 4	**Year 1**	**Year 2**	**Year 3**	**Year 4**
Market size in units	**75,000**			
Market is growing at 4% in size annually				
Market share of brand X	**0.15**	**0.15**	**0.16**	**0.16**
Price per unit ₹	**10**			
Price growth (annual) = 3%				
Operating cost margin = 60% of sales				
Tax rate = 35%				
Capital Employed (growing by 20% of NOPAT of Preceding year)(₹)	**1,40,000**			
Capital Charge = 8%				
Role of Branding Index = 63%				
Brand Discount Rate = 12%				
Long term growth rate in Brand Earnings from year 5 onwards = 2%.				

Find:

(a) For years 1 to 4

(i) Branded revenue (of brand X)

(ii) NOPAT

(iii) Intangible earnings

(iv) Brand earnings, and

(b) Value of the brand

Discounting Factor at 12% - Year 1 – 0.8929, year 2 – 0.7972, year 3 – 0.7118, year 4 – 0.6355. **4+2+2+2+5=15**

Answer:

3.

Particulars		Year 1	Year 2	Year 3	Year 4
Market (units)		75000	78000	81120	84365
Market share		0.15	0.15	0.16	0.16
Volume (units)		11250	11700	12979	13498
Price per unit (₹)		10	10.30	10.6090	10.9273
(a) (i) Brand Revenue (₹)		1,12,500	1,20,510	1,37,694.2110	1,47,496.6954
EBIT Branded Revenue × (1 – 0.6) (₹)		45,000	48,204	55,077.6844	58,998.6782
(a) (ii) NOPAT(1 – 0.35) (₹)	0.65	29,250	31,332.60	35,800.4949	38,349.1408
Capital Employed (₹)		1,40,000	1,45,850	1,52,116.52	1,59,276.6190
Capital Charge 8% (₹)		11,200	11,668	12,169.3216	12,742.1295
(a) (iii) Intangible Earnings (NOPAT – Capital Charges)		18,050	19,664.60	23,631.1733	25,607.0113
(a) (iv) Brand Earnings at Branding Index 63% (₹)		11,371.50	12,388.698	14887.6392	16,132.4171
(b) Discounting factor at 12%		0.8929	0.7972	0.7118	0.6355
DCF Yr 1 (₹)	10,153.6124				
DCF Yr 2 (₹)	9,876.2700				
DCF Yr 3 (₹)	10,597.0216				
DCF Yr 4 to infinity (₹)	1,14,830.5449			1,61,324.171	
Brand Value (₹)	1,45,457.4489				

Note:

Terminal Value = $\frac{16,132.4171}{12\% - 2\%} = \frac{16,132.4171}{0.10} = ₹\ 1,61,324.171$

Alternative Solution (b):

		Year 1	Year 2	Year 3	Year 4	Year 5
Brand Earnings at Branding Index 63% (₹)		11,371.50	12,388.698	14887.6392	16,132.4171	16,455.0654*
Discounting factor at 12%		0.8929	0.7972	0.7118	0.6355	
DCF Yr 1 (₹)	10,153.6124					
DCF Yr 2 (₹)	9,876.2700					

DCF Yr 3 (₹)	10,597.0216					
DCF Yr 4 (₹)	10,252.1511					
DCF Yr 5 to infinity (₹)	1,04,571.9406				1,64,550.654	
Brand Value (₹)	1,45,450.9957					

*Note = 2% increase over year 4 as given.

Note: Terminal Value = $\frac{16,455.0654}{12\% - 2\%} = \frac{16,455.0654}{0.10} = ₹1,64,550.554$

4. Young Ltd. has decided to takeover Old Ltd. and merged it with itself In this respect, you have been provided the following information:

Balance sheet as on March 31, 2014

	(₹ in Crores)	
Equities and Liabilities	**Young Ltd.**	**Old Ltd.**
Equity Share Capital (₹ 10 par)	**3,500.00**	**2,200.00**
Reserves and surplus	**4,250**	**3,250.00**
Shareholders' Funds	**7,750.00**	**5,450.00**
Non-Current Liabilities:		
Long Term Debt	**2,780.00**	**1,375.00**
Deferred Tax Liabilities (Net)	**550.00**	**450.00**
Current Liabilities	**1,560.00**	**1,340.00**
Total Liabilities	**12,640.00**	**8,615.00**
Assets		
Non-Current Assets:		
Net Fixed Assets	**8,455.00**	**5,360.00**
Investments	**1,125.00**	**375.00**
Current Assets	**3,060.00**	**2,880.00**
Total Assets	**12,640.00**	**8,615.00**

Profit and Loss Account for the year ending on March, 31, 2014

Particulars	**Young Ltd.**	**Old Ltd.**
Income:		
Net Revenue	**22,150.00**	**12,305.00**
Other Income	**425.00**	**865.00**
Total Income	**22,575.00**	**13,170.00**
Less Expenses:		
Total Operating Expenses	**14,557.00**	**5,878.00**
Operating Profit	**8,018.00**	**7,292.00**
Less: Interest	**319.70**	**165.00**
Profit Before Tax	**7,698.30**	**7,127.00**
Less: Tax	**2,540.44**	**2,351.91**
Profit After Tax	**5,157.86**	**4,775.09**
Price/Earning ratio	**22.60**	**16.80**

It is decided that to provide fair deal to the shareholders of both the companies, the exchange ratio (or swap ratio) will be calculated as weighted average of the exchange ratios determined by Book Value, EPS (Earning Per Share) and Market Price of both the companies. The decided weights are 30%, 50% and 20% of exchange ratios of Book Value, EPS (Earning Per Share) and Market Price of both the companies respectively.

On the basis of the above information, you are required to answer the following:

(i) Determine the exchange ratio or swap ratio for the said merger,

(ii) Assuming that there is no change in the Price/Earning Ratio of Young Ltd. and there are no synergy gains, determine the market price of the share of Young Ltd., post merger. 10+5=15

Answer:

4. Calculation of Book Value per Share:

Particulars	Young Ltd.	Old Ltd.
Equity Share Capital (₹ 10 par)	₹ 3,500.00	₹ 2,200.00
Reserves and Surplus	₹ 4,250.00	₹ 3,250.00
Deferred Tax Liability (Net)	550.00	450.00
Net Worth	₹ 8,300.00	₹ 5,900.00
No. of Shares	350	220
Therefore, Book Value per share is	₹ 23.71	₹ 26.82

Swap Ratio as per Book Value 1:1.13

Calculation of Earning Per Share:

Particulars	Young Ltd.	Old Ltd.
Profit After Tax	₹ 5,157.86	₹ 4,775.09
No. of Shares	350	220
Therefore, EPS is say	₹ 14.7367	₹ 21.7050
Swap Ratio as per EPS	1 : 1.47	

Calculation of Market Price per Share:

Swap Ratio as per	Swap Ratio	Weight	Weighted Swap Ratio
Book Value	1.13	30%	0.339
EPS	1.47	50%	0.735
Market Price	1.09	20%	0.218
		Weighted Swap Ratio	**1.292**
Total Profit of Young Ltd after merger			₹ 9,932.95
No. of Shares of Old Ltd.			220
No. of shares to be issued to the shareholders of Old Ltd. as per the weighted Swap Ratio of 1:1.292			284.24
Total No. of shares of Young Ltd. after merger (350+284.24)			634.24
Therefore, EPS of Young Ltd. after merger will be			₹ 15.66
Given P/E Ratio of 22.60, the market price of Young Ltd. after merger will be			**₹ 353.92**

5. (a) An investor is holding 5,000 shares of X Ltd. which is having Current market price of ₹ 75. It is expected that in near future, the risk free rate is going to decrease from 7.75% to 7.50%; the return on an appropriate market index is going to increase from 14.50% to 15.00%; and the beta of X Ltd. is going to reduce from 1.35 to 1.25. In view of the expected changes, you are requested to advice the investor whether he should buy more shares of X Ltd. or sell the existing holding or hold the position. [Assume that Capital Asset Pricing Model (CAPM) holds good in the stock market]. 5

(c) An Indian Bank has classified its total investment on 31.03.2014 into three categories: (a) Held to Maturity (HTM) (b) Available for Sale (AFS) and (c) Held For Trading (HFT). In the Bank's Balance Sheet, Held to maturity investments are carried at acquisition cost less amortised amount. Available for sale are carried at market to market. Held for trading investments are valued at weekly intervals at market rates or as per the prices declared by FIMMAD (Fixed Income Money Market and Derivatives Association of India). Net depreciation, if any, is charged to revenue and net appreciation, if any, is ignored. You are required to comment on the policy of the bank with regard to accounting treatment of investments in accordance with AS – 13. 5

(d) Following statements are not correct; rewrite them correctly: 1x5=5

(i) The increasing convergence between market value (MV) and book value (BV) is largely based on the intangibles of the business providing the foundation for future growth.

(ii) While calculating the WACC (Weighted Average Cost of Capital), one should preferably take the book value weights of debt and equity.

(iii) Presence of real options in investment projects may reduce the NPV of a project.

(iv) Stock Dividends may increase the Market Capitalization of a company.

(v) The more quantitative a model is, the better will be the valuation of a firm.

Answer:

5. (a) **EXPECTED RETURN ON THE SHARE BEFORE CHANGES:**

Future Risk Free Rate	7.750%
Return on Market Index	14.500%
Beta	1.35
Expected Return as CAPM will be	**16.863%**

$E(R_i) = R_f + B_i (E(R_m)-R_f)$
$= 7.75 + 1.35 (14.5 - 7.75) = 16.863\%$

EXPECTED RETURN ON THE SHARE AFTER CHANGES:

Future Risk Free Rate	7.500%
Return on Market Index	15.000%
Beta	1.25
Expected Return as CAPM will be	**16.875%**

$E(R;) = R_f + B, (E(R_m) - R_f) = 7.5 + 1.25 (15 - 7.5) = 16.875\%$

When the investor bought the share, the expected return was 16.863% and after the change the expected return will increase to 16.875%; therefore, it is suggested that the investor should hold on the shares so as to get the benefit of higher return, and not sell the existing holding. Given that the change is likely to be marginal it is not advisable to buy more shares at present.

(b) As per para 2[d] of AS-13, the accounting standard is not applicable to bank, insurance company, mutual funds. In this case, it is a bank, therefore AS-13 does not apply here. For the banks, the RBI has issued guidelines for classification and valuation of the investment. Therefore, the bank should comply with RBI guidelines. The

treatment described in the question follows these guidelines.

(c) (i) **Correct:** The increasing **divergence** between market value (MV) and book value (BV) is largely based on the intangibles of the business providing the foundation for future growth.

(ii) **Correct:** While calculating the WACC (Weighted Average Cost of Capital), one should preferably take the **market** value weights of debt and equity.

(iii) **Correct:** Presence of real options is investment projects may **increase** the NPV of a project.

(iv) **Correct:** Stock Dividends may **not** increase the Market Capitalization of a company.

(v) **Correct:** The more quantitative a model is, the **more complex** will be the valuation of a firm **and it may not be better**.

6. An infrastructure company is thinking of acquiring a cement company for taking benefits of the synergy gains. For that, a probable target company is identified. The following information has been obtained from an equity research firm about the target company.

	Actual	Projected (₹ in Crores)				
EQUITY AND LIABILITIES	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Share Capital	**2,139**	**2,139**	**2,139**	**2,139**	**2,139**	**2,139**
Reserves and Surplus	**25,389**	**26,073**	**26,477**	**26,916**	**27,367**	**27,922**
	27,528	**28,212**	**28,616**	**29,055**	**29,506**	**30,061**
Non-Current Liabilities						
Long-Term Borrowings	**23,560**	**23,560**	**23,560**	**23,560**	**23,560**	**23,560**
Other Long Term Liabilities	**4,215**	**3,793**	**3,825**	**3,852**	**3,818**	**3,827**
	27,775	**27,353**	**27,386**	**27,412**	**27,378**	**27,388**
Current Liabilities						
Trade payable	**7,582**	**3,586**	**3,031**	**6,361**	**6,855**	**6,105**
Short term provisions & Other Current Liabilities	**2,008**	**3,712**	**4,786**	**1,780**	**1,123**	**2,284**
	9,590	**7,299**	**7,817**	**8,141**	**7,978**	**8,389**
Total Liabilities	**64,893**	**62,864**	**63,818**	**64,608**	**64,862**	**65,837**
Assets						
Non-Current Assets						
Gross Block	**23,018**	**21,616**	**21,525**	**21,600**	**22,032**	**22,583**
Less: Depreciation	**3,169**	**3,459**	**3,724**	**3,758**	**3,922**	**4,065**
Net Block	**19,849**	**18,157**	**17,801**	**17,842**	**18,110**	**18,518**
Capital Work-in-Progress	**7,834**	**9,011**	**9,548**	**9,018**	**8,846**	**8,853**
Total Non-Current Assets	**27,683**	**27,169**	**27,349**	**26,860**	**26,957**	**27,370**
Current Assets						
Inventories	**17,646**	**14,999**	**13,287**	**11,700**	**11,475**	**11,291**
Sundry Debtors	**2,987**	**3,095**	**3,401**	**3,666**	**3,965**	**4,392**
Cash and Bank Balances	**5,589**	**5,337**	**9,100**	**11,461**	**11,762**	**12,403**
Loans and Advances	**10,066**	**12,264**	**10,681**	**10,921**	**10,703**	**10,381**
Deferred Tax Asset	**922**	**---**	**---**	**---**	**---**	**---**
Current Assets	**37,210**	**35,695**	**36,469**	**37,748**	**37,905**	**38,467**
Total Asset5s	**64,893**	**62,864**	**63,818**	**64,608**	**64,862**	**65,837**
Other Information:						
Operating Current Assets	**29,210**	**27,696**	**28,469**	**29,748**	**29,906**	**30,466**
Operating Current Liabilities	**4,090**	**1,799**	**2,317**	**2,641**	**2,478**	**2,889**
Face value of Share (in ₹)	**10**	**10**	**10**	**10**	**10**	**10**

	Actual	Projected (₹ in Crores)				
	2014	2015	2016	2017	2018	2019
Total Revenue	**9,095.74**	**8,822.87**	**8,858.16**	**8,999.89**	**9,179.89**	**9,409.38**
Cost of Goods Sold	**80.78**	**42.46**	**42.63**	**43.31**	**44.18**	**45.28**
Gross Profit	**9,014.96**	**8,780.41**	**8,815.53**	**8,956.58**	**9,135.71**	**9,364.10**
Administrative Expenses	**595.71**	**504.23**	**504.89**	**507.52**	**510.88**	**515.15**
Selling and Distribution Expenses	**678.49**	**617.33**	**615.88**	**610.07**	**602.69**	**593.28**
Depreciation	**796.24**	**289.60**	**2.65.32**	**34.47**	**163.29**	**143.21**
EBIT	**6,944.52**	**7,369.24**	**7,429.44**	**7,804.51**	**7,858.85**	**8,112.46**
Marginal Tax Rate	**33.90%**	**33.90%**	**33.90%**	**33.90%**	**33.90%**	**33.90%**

Assuming that the target company is having steady growth rate of 8% in free cash flows after 2019 and relevant Weighted Average cost of Capital (WACC) of 13.50%, determine the value of its share using free cash flow valuation method. Also, determine the book value of the target company share as on March 31, 2014 and give the reasons why both estimates of the value of share are different.

Year	1	2	3	4	5	6	7
Discounting Factor @ 13.50%	**0.881**	**0.776**	**0.684**	**0.603**	**0.531**	**0.468**	**0.412**

8+4+3=15

Answer:

6. **CALCULATION OF FREE CASH FLOWS FOR THE TARGET COMPANY [FIRM'S VIEW]**

	PROJECTED (₹ In Crores)				
	2015	**2016**	**2017**	**2018**	**2019**
EBIT	₹7,369.24	₹7,429.44	₹7,804.51	₹7,858.85	₹8,112.46
Less: Tax @ 33.90%	₹2,498.17	₹2,518.58	₹2,645.73	₹2,664.15	₹2,750.12
EBIT(1-t)	₹4,871.07	₹4,910.86	₹5,158.78	₹5,194.70	₹5,362.34
(+) Depreciation	₹289.60	₹265.32	₹34.47	₹163.29	₹143.21
(-) Change in Operating Working Capital	₹777.00	₹255.00	₹955.00	₹321.00	₹149.00
(-) Capex (Capital Expenditure)	₹1,177.00	₹537.00	₹75.00	₹432.00	₹558.00
FREE CASH FLOW FOR FIRM/ COMPANY (FCFF)	₹3,206.67	₹4,384.18	₹4,163.25	₹4,604.99	₹4,798.55
Discounting Factor® 13.50%	0.881	0.776	0.684	0.603	0.531
PV OF FCFF	₹2,825.07	₹3,402.12	₹2,847.66	₹2,776.81	₹2,548.03
SUM TOTAL OF PV OF FCFF	₹14,399.70				
VALUE OF CASH FLOWS AFTER THE YEAR 2019 GIVEN A GROWTH RATE OF 8%	₹94,226.00				
PV OF CASH FLOWS ORIGINATING AFTER 2019	₹50,034.00				
TOTAL PV OF FCFF	₹64,433.70				

Less the value of Debt:	
Long - Term	₹23,560.00
Borrowing	
Other Long Term Liabilities	₹4,215.00
Total Debt	**₹27,775.00**

THE VALUE OF EQUITY (FCFF-DEBT)	₹36,658.70
NO. OF SHARES	213.90
VALUE PER SHARE AS PER FREE CASH FLOW METHOD	**₹171.38**

Note = Cash flows after 2019 into Perpetuity (terminal value) = $\frac{4798.55 \times 1.08}{(13.5\% - 8\%)}$

$= \frac{5182.434}{0.055}$ = ₹94,226 Crores.

PV = 94226 × 0.531 = ₹50,034 Crores.

Working Note:

Calculation of change in Operating Working Capital:

	ACTUAL	**PROJECTED**				**(₹ In Crores)**
	2014	**2015**	**2016**	**2017**	**2018**	**2019**
Operating Current Assets	₹29,210	₹27,696	₹28,469	₹29,748	₹29,906	₹30,466
Operating Current Liabilities	₹4,090	₹1,799	₹2,317	₹2,641	₹2,478	₹2,889
Net Operating Working Capital	₹25,120	₹25,897	₹26,152	₹27,107	₹27,428	₹27,577
Change in Net Operating Working Capital	**₹ -**	**₹777**	**₹255**	**₹955**	**₹321**	**₹149**

	ACTUAL	**PROJECTED**			**(₹ In Crores)**	
	2014	**2015**	**2016**	**2017**	**2018**	**2019**
Gross Block	₹23,018.00	₹21,616.00	₹21,525.00	₹21,600.00	₹22,032.00	₹22,583.00
Capital Work-in Progress	₹7,834.00	₹9,011.00	₹9,548.00	₹9,018.00	₹8,846.00	₹8,853.00
Increase in Gross Block	₹-	₹-	₹-	₹75.00	₹432.00	₹551.00
Increase in Expenditure on Capital Work-in Progress	₹-	₹1,177.00	₹537.00	₹-	₹-	₹7.00

Total Increase in Capital Expenditure	₹-	**₹1,177.00**	**₹537.00**	₹75.00	**₹432.00**	**₹558.00**

Note:

- It is assumed that Capital Expenditure includes expenditure on fixed assets -final as well as capital work-in-progress.
- It is assumed that any reduction in Gross Block may not result into any free cash flows. For example, there may be some old assets which might be scraped or discarded without generating any inflow of cash from them. It is assumed that a reduction in Capital Work-in-Progress may result in equivalent increase in the value of Gross Block and will not generate any cash inflow and hence is ignored.

CALCULATION OF BOOK VALUE OF THE TARGET COMPANY'S SHARE AS ON MARCH 31, 2014

Share Capital	₹2,139
Reserves and Surplus	₹25,389
Less: Deferred Tax Assets (being a fictitious assets)	₹922
NET WORTH	₹26,606
No. of Shares (Face Value - ₹10)	213.90
Book Value Per Share (Net Worth/ No. of Shares)	₹124.39

The book Value (BV) and the Value as per Calculated using DCF of Free Cash Flows are different; in fact, book value is lower. It is different because BV is historical while DCF based valuation is futuristic; DCF based valuation may take into account the growth of the business which BV does not take into account. Another difference may be due to the fact that BV is based on the 'stock concept' while DCF based valuation based on 'flow concept'.

7. (a) Explain Relative Valuation and give the steps in Relative Valuation. 7

(b) G. D. Pharma has taken up an expansion project of ₹ 240 lakhs, entirely to be funded by right issue at a price of ₹ 60 per share. The financial data of G. D. Pharma before the right issue are as follows:

No. of equity shares	**12,00,000**
EPS (₹)	**12**
PE Multiple	**15**

Your are required to calculate the value of right per share and the market price per share after the right issue. 8

Answer:

7. (a) Relative Valuation?

(i) This approach is based on the premise that the value of any asset can be estimated by analyzing how the market prices 'similar' or 'comparable' assets. The basic belief here is that it is impossible or extremely difficult to estimate the intrinsic value of an asset, and therefore, the value of an asset is whatever the market is willing to pay for it.

(ii) Most valuations in the Stock Market are relative valuations.

(iii) The following data relating to the US Stock Market are quite revealing:
(a) Almost 85% of equity research reports are based upon a multiple and comparables.
(b) More than 50% of all acquisition valuations are based upon multiples.
(c) Rules of thumb based on multiples are not only common but are often the basis for final valuation judgments.

Steps in Relative Valuation:

(i) The following steps have to be followed in carrying out relative valuation:
(a) Identify comparable assets and obtain market values for these assets.
(b) Convert these market values into standardized values, since the absolute prices cannot be compared. This process of standardizing creates price multiples.
(c) Compare the standardized value or multiple for the asset being analyzed with the standardized value for comparable asset, adjusting for any differences between the firms that might affect the multiple, to judge whether the asset is under or overvalued.

(ii) The most commonly used multiples are:
(a) Revenue or sales multiples
(b) EBITDA multiples
(c) Operational multiples
(d) Operating free cash flow multiples
(e) Earnings multiples
(f) Book value multiples

Alternative Answer:

(b)

		No.	Price	Amount (₹)
1	Existing shares	1200000		
2	Project Investment (₹)			24000000
3	Right issue price (₹)		60	
4	EPS (₹)		12	
5	PE Ratio		15	
6	Existing Market price (= EPS×PE) & Market Capitalisation (₹)		180	216000000
7	No. of right shares = 24000000/60	400000		
8	Value of Right [Note 1] (₹)		30	
9	Post right market price [Note 2] (₹)		150	

Right issue rate = 400000/1200000 = 1/3; N1 = 3 and N2 = 1; N1 + N2 = 4
Note 1: Value of right = (market price - right issue price)/ (N1 + N2) = (180-60)/4 = 30
Note 2: Post right market price = (N1× market price + N2× Right issue price)/ (N1 + N2) = (3×180+1×60)/4 = 150; or Post right market price = Existing Market Price - Value of Right = 180-30 = 150;

		No.	Price	Amount (₹)
1	Existing shares	1200000		
2	Project Investment (₹)			24000000
3	Right issue price (₹)		60	
4	EPS (₹)		12	
5	PE Ratio		15	
6	Existing Market price (=EPS×PE) & Market Capitalisation (₹)		180	216000000
7	No. of right shares = (Project Investment/Right Issue Price)	400000		
8	Total no. of shares and Market Capitalisation (Existing + Right)[1200000 + 400000]and [216000000+ 24000000]	1600000		240000000
9	Post right market price = 240000000/1600000		150	
10	Total Value of Right for 400000 shares = (180-60)× 400000			48000000
11	Value of Right per share = 48000000/1600000		30	

8. (a) A Ltd. for acquiring B Ltd. intends to pay ₹ 12,00,000 (i) by cash (ii) by issue of shares. The relevant particulars about the companies are stated below:

Particulars	A Ltd.	B Ltd.
Market price per share (₹)	**50**	**20**
No. of shares	**1,20,000**	**50,000**

Three alternative situations are assumed:

(i) Share price is expected to reflect true value of the company. There is no gain for synergy in acquisition.

(ii) B Ltd. share price includes a speculation premium of ₹ 2 per share.

(iii) There is a gain for synergy amounting to ₹ 4,00,000.

You are required to measure cost/gain to the bidder company for each of the methods of financing acquisition under each of the alternative situations. 11

(b) What are the approaches to Human Resource Valuation? 4

Answer:

8. (i)

	Particulars	A Ltd.	B Ltd.	Merged
	Market price per share (₹)	50	20	
	No. of shares	120000	50000	
	Market Value of the company (₹)	6000000	1000000	7000000
	Cash Payment (₹)		1200000	
Aa	Cost to bidder company (₹) (1200000 - 1000000)		200000	

Ab	Worth of B Ltd. (₹) (20-2) × 50000		900000	
	Cost to bidder company (₹) (1200000 - 900000)		300000	
Ac	Gain due to synergy (₹)			400000
	Value of the merged company (₹)	7000000 + 400000		7400000
	Cash Payment (₹)			1200000
	Worth of the bidder company (₹)	7400000-1200000		6200000
	Market Value of the bidder company before merger(₹)			6000000
	Gain to bidder company (₹)	6200000-6000000		200000
Ba	Payment by shares (₹)		1200000	
	Cost to bidder company (₹) (1200000 - 1000000)		200000	
Bb	Payment by shares (₹)		1200000	
	Cost to bidder company (₹) (1200000 - 900000)		300000	
Bc	No. of Shares to be issued by A Ltd.	1200000/50		24000
	Value of the merged company (₹)	7000000+400000		7400000
	Total No. of shares of the merged company	120000 + 24000		144000
	Value per share (₹)	7400000/144000		51.3889
	Value of 120000 shares of A Ltd (₹)	120000*51.3889		6166668
	Gain to the bidder company (₹)	(6166668 - 6000000)		166668

(ii) Broadly, there are two approaches to human capital valuation — cost-based and economic approach. The cost-based approach is further classified into three - historical cost, replacement cost and opportunity cost. The Lev & Schwartz model along with other methods like Likert, Flamboltz and Jaggi is part of the economic approach.

Though there is little clarity on which of the various human capital valuation models is effective, the L&S model seems to have an edge over others in India.

HR consultants say it gives an opportunity to benchmark the efficiency of their human resources as quite a few Indian companies have adopted this system. Second, the valuation is less subjective as it makes limited assumptions.