Paper-18: BUSINESS VALUATION MANAGEMENT

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

Working Notes should form part of the answer.

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

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)   Market price of firms with high revenue ratios and low profit margins are considered by investors as overvalued.
    (ii)   Firms with higher operating margins, lower reinvestment rates and lower costs of capital will trade at lower value – to - sales multiples.
    (iii) Variable dividend feature makes the computation of share value difficult.
    (iv)   Market value per share is expected to be lower than the book value per share in case of profitable and growing firms.
    (v)   Horizontal mergers are also known as conglomerate mergers.

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

    (i)   The most appropriate method of determining the cost of equity for calculating the Weighted Average Cost of Capital is ……………….(The Dividend Discount Model/ The Capital Asset Pricing Model).
    (ii)   In valuing a firm, the …………tax rate should be applied to earning of every period (marginal/effective/average).
    (iii) Dividend yield ratio is equal to dividend per share divided by…….. and the quotient multiplied by 100. (EPS/market price per equity share).
    (iv)   The value of the patent does not show up if it is …………… generated. (internally/externally).
    (v)   A ………….. is essentially a container for a customer's complete experience with the offer and the company (goodwill/ brand).
    (vi)   Post-merger control and the …………….. are two of the most important issues in agreeing on the terms of a merger (negotiated price/calculated price).
    (vii) β factor does not measure ---------------- risk (systematic/unsystematic).
    (viii) The risk that the cash flows will not be delivered is called --------------- (liquidity risk/default risk).
    (ix)   A real estate investment trust is -------------- investment company that invests only in real estate (closed-end/opened-end).
    (x)   Key to income-based approach of valuation is ------------- (capitalization rate/ internal rate of return)

(c) In each of the questions given below one out of the four options is correct. Indicate the correct answer: **[2×5=10]**

    (i) Identify which of the following is not a financial liability
        (a) X Ltd. has 1 lakh ₹ 10 ordinary shares issued
        (b) X Ltd. has 1 Lakh 8% ₹ 10 redeemable preference shares issued
        (c) X Ltd. has ₹ 2,00,000 of 6% bonds issued
        (d) Both (a) and (b)

    (ii) A firm's current assets and current liabilities are 1600 and 1000 respectively. How much can it borrow on a short-term basis without reducing the current ratio below 1.25?
        (a) ₹ 1,000
        (b) ₹ 1,200
        (c) ₹ 1,400
        (d) ₹ 1,600

    (iii) Rudy's, Inc. and Blackstone, Inc. are all-equity firms. Rudy's has 1,500 shares outstanding at a market price of ₹22 a share. Blackstone has 2,500 shares outstanding at a price of ₹38 a share.
        Blackstone is acquiring Rudy's for ₹36,000 in cash. What is the merger premium per share?
        (a) ₹2.00
        (b) ₹4.25
        (c) ₹6.50
        (d) ₹8.00

    (iv) Dayes Corporation has ₹300 million of common equity on its balance sheet and 6 million shares of common stock outstanding. The company's Market Value Added (MVA) is ₹162 million. What is the company's stock price?
        (a) ₹ 23
        (b) ₹ 32
        (c) ₹ 50
        (d) ₹ 77

    (v) A convertible bond with a face value of ₹1,000 issued at ₹1,300 with a coupon rate of 12%.The conversion rate is 20 shares per bond. The current market price of the bond is ₹1,500 and that of stock is ₹60.The conversion value premium is
        (a) 15%
        (b) 18%
        (c) 20%
        (d) 25%

Answer:

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

    (i)   True

    (ii)   False

    (iii)   True

(iv) False

(v) False

1. **(b)** Fill in the blanks by using words / phrases given in the brackets:

(i) The Capital Asset Pricing Model

(ii) marginal

(iii) market price per equity share

(iv) internally

(v) brand

(vi) negotiated price

(vii) unsystematic

(viii) default risk

(ix) closed-end

(x) capitalization rate

1. **(c)** In each of the questions given below one out of the four options is correct. Indicate the correct answer -

(i) (a) X Ltd. has 1 lakh ₹ 10 ordinary shares issued
A share is an indivisible unit of capital expressing the proprietary relationship between the company and the shareholder.

(ii) (c) ₹ 1400
Amount of borrowing be x. (Current Asset will increase because borrowing will increase the cash amount).
$$\frac{1600+x}{1000+x}=1.25$$
Or, X = 1400

(iii) (a) ₹2.00
Merger premium per share = (₹36,000 ÷ 1,500) – ₹22 = ₹2

(iv) (d) ₹ 77
Stock Price = ₹(300+162) ÷ 6 = ₹77

(v) (d) 25%
Conversion rate is 20 shares per bond. Market price of share ₹ 60.
Conversion Value 20 x ₹ 60 = ₹ 1,200.
Market price of bond = ₹ 1,500
Premium over Conversion Value (₹1,500 – ₹1,200) $= \dfrac{300}{1,200} \times 100 = 25\%$

Q. 2. (a)Describe Price-Book Value Ratio. What are the two measurement issues that you have to confront in computing this multiple? How return on equity and cost of equity can influence this ratio?

(b) Your client is holding the following securities:

Particulars of securities Equity share	Cost (₹)	Dividends (₹)	Market Price (₹)	Beta
Co. Alpha	10,000	1000	10200	0.8
Co. Beta	12,000	1000	12500	0.7
Co. Gama	18,000	1000	24000	0.5
Govt. Bonds	36,000	5400	34300	1.0

Assuming a risk free rate of 14%, calculate

(i) Expected rate of return in each, using the Capital Asset Pricing Model (CAPM)

(ii) Average return of the portfolio. [9+(4+2)=15]

Answer: 2.

(a) The price/book (p/b) ratio, sometimes called the market-to-book ratio, links the stock/share price of a company with the book or accounting value of shareholders' equity per share. It reflects how many times book value investors are ready to pay for a share.

So if the share price is ₹ 10 and shareholders' equity is ₹ 5, investors are ready to pay two times the book value. In an efficient market, the share price should reflect a firm's future value creation potential whereas the accounting or book value of equity reflects the accumulation of past share issues and past retained profits/earnings, i.e. not yet distributed in dividends.

A higher p/b ratio should reflect greater expected future gains because of perceived growth opportunities and/or some competitive advantages and/or lesser risk but at the same time it indicates that the share price is relatively more expensive.

During periods where markets are out of equilibrium, for example during a bubble, high p/b ratios may also reflect over-optimism and over-pricing. Conversely, a lower p/b ratio can reflect either poorer future opportunities or potentially a bargain if the market is over-pessimistic or if one believes the market is not taking into account potential restructuring or a takeover that would improve future prospects.

Example:

A p/b greater than one means the market value of the company is greater than its book value, this difference is sometimes called the market value added or market goodwill. It is because accounting poorly reflects the internally generated intangible assets of new economy firms, they generally have higher p/b ratios than the more traditional 'bricks and mortar' type firms that have more tangible assets sitting on their balance sheet.

The p/b ratio, like other pricing ratios such as the price/earnings, price/sales or price/cash flows, is often used in valuing firms or takeover targets by finding the p/b ratio of a set of comparable companies and applying it to the target's current or forecasted book value.

Sometimes, investors look at the inverse of the ratio, the book/price or book-to-market ratio

The formula for the price to book value ratio is (Price per share)/ (book value of equity per share) Investors find this ratio useful for two reasons:

(i) The book value provides a relatively stable, intuitive measure of value that can be compared to the market price. For investors who instinctively mistrusts cash flow estimates of value the book value is a much simpler benchmark for comparison.

(ii) Given reasonably consistently accounting standards across firms, price-book value ratio can be compared across similar firms for signs of under- or over-valuation.

There are two measurement issues that one has to confront in computing this multiple these are:

It being an accounting measure, the book value gets updated infrequently.
Since the price-book value ratio is a function of the return on equity, a difficult situation arises with the valuation of options outstanding, if any.
The price book value ratio is also influenced by the cost of equity, higher cost of equity leads lower price book value ratio. An analyst has to take care of it.

(b)

(i) Computation of Expected Return on Market Port folio E(R_m): -

Investment	Cost (₹)	Dividends (₹)	Capital Gains (₹)
Co. Alpha	10,000	1,000	200
Co. Beta	12,000	1,000	500
Co. Gama	18,000	1,000	6,000
Govt. Bonds	36,000	5,400	(1,700)
	76,000	8,400	5,000

$$E(R_m) = \frac{(8400 + 5000)}{76000} \times 100 = 17.63\%$$

Calculation of expected rate of return on Individual security:

Co. Alpha	14% + 0.8 (17.63% - 14%) =	16.90%
Co. Beta	14% + 0.7 (17.63% - 14%) =	16.54%
Co. Gama	14% + 0.5 (17.63% - 14%) =	15.82%
Govt. Bonds	14% + 1.0 (17.63% - 14%) =	17.63%

(ii) Calculation of the Average return of the Portfolio:
$$= \frac{16.90\% + 16.54\% + 15.82\% + 17.63\%}{4} = 16.72\%$$

Q. 3. (a) Technostyle with its need to grow and maintain its leadership position in the leather industry is planning to acquire ABC. The recent financial details of the two companies are as follows:

Particulars	Technostyle	ABC
PAT	₹2200 lakhs	₹40 lakhs
MPS(FV₹10)	₹200	₹24
P/E Ratio	18.18	12
Projected Growth Rates(p.a.)	9%	5%

There are two views expressed by two leading consultants on the benefits due to Synergy, one arguing that there can be no benefit from synergy while the other projects a 3% increase in earnings after the acquisition.

(i) If ABC's shareholders want an exchange ratio of 0.4 (i.e. 4 shares for every 1 share of ABC), would that be acceptable to the shareholders of Technostyle, if

   1. There is no synergy due to merger.
   2. There is an increase in earnings of the merged entity by 3% due to synergy.

(ii) If Technostyle accepts an exchange ratio of 0.4 and synergy benefits are not realized, Will there be any dilution in EPS of Technostyle? If so, when will the dilution be wiped off?

(b) Consider a bond portfolio comprising of a zero coupon bond, 8% coupon bond and a 10% coupon bond (all with 10years to maturity). All have a face value of ₹1000. The current prices of these bonds are ₹463.19, ₹1000 and ₹1134.20 respectively. If the yield over the next 1 year period is likely to stay at 8%, what is the current value of the portfolio and what will be the portfolio value at the end of next year? What is the individual return earned on each bond? [(5+4)+6=15]

Answer: 3. (a)

(a) The shareholders of Technostyle would not like their existing EPS to go down. So, they would at least prefer current EPS of 200/18.18= ₹ 11.
Without synergy
Using the given data and equating it to ₹ 11.

$$\frac{EPS_S N_S + EPS_A N_A}{N_S + ER(N_A)} = EPS_{SA} = \frac{200}{18.18} = ₹ \, 11$$

Where, EPS_A = 24/12 = ₹ 2, N_s= 2200/11 = 200 lakhs, N_A = 40/2 = 20 lakh
Therefore

$$₹ \, 11 = \frac{11 \times 200\,lakh + 2 \times 20\,lakh}{200\,lakh + ER\,(20\,lakh)} \quad \text{Therefore, ER = 0.182}$$

With Synergy

$$\frac{\left[EPS_S N_S + EPS_A N_A\right] \times 1.03}{N_S + ER(N_A)} = EPS_{SA} = \frac{200}{18.18} = ₹ \, 11$$

Therefore

₹ 11 = $\dfrac{[11 \times 200\,lakh + 2 \times 20\,lakh] \times 1.03}{200\,lakh + ER\,(20\,lakh)}$ Therefore, ER = 0.487

So, Technostyle shareholders would accept at least the average of these ER.

= 0.5 x 0.182 + 0.5 x 0.487 = 0.335

So, ABC's demand for ER of 0.4 will not be acceptable to Technostyle.

(ii) Projected EPS of the merged entity

$\dfrac{\left[EPS_S N_S + EPS_A N_A\right] \times \left[1+g\right]}{N_S + 0.4(N_A)}$ = EPS_{SA} = Projected EPS of the merged entity

'g' of the merged entity = $\dfrac{200 \times 1.09 + 24 \times 1.05}{200 + 24}$ -1 = ₹ 8.57%

Projected EPS = $\dfrac{[11 \times 200\,lakh + 2 \times 20\,lakh] \times 1.0857}{200\,lakh + 0.4\,(20\,lakh)}$ = ₹ 11.7

Without merger EPS_s = ₹ 11 x 1.09 = ₹ 11.99

Dilution = $\dfrac{\left[11.99 - 11.70\right]}{11.99}$ = 2.42%

The shareholders of Technostyle will never be able to wipe off the dilution since the 'g' of the merged entity is lower than the pre-merger growth rate. So only if the prediction of synergy works and 'g' earnings growth rate increases beyond 9% then only the shareholders can hope for wiping off the dilution of share value.

(b) The zero coupon bond if discounted with 8% for the next 9 years would give us value at the end of 1 year to be = ₹ 500.25. Secondly the 8% bond is currently quoting at ₹ 1,000. It would continue to quote at ₹ 1000 because the yield is slated to remain at 8% = coupon rate. In contrast, the 10% bond is currently quoting at ₹ 1134.20. It would quote cheaper at ₹ 1124.94. This can be calculated as follows:

Price at the end of 1 year = ₹ 100 x PVIFA (8%,n) + ₹ 1000 x PVIF (8%,n) = ₹1124.94

	Zero coupon	8% coupon	10% coupon	Portfolio Value
Current prices	₹ 463.19	₹ 1000	₹ 1134.20	₹ 2597.39
Price one year from now	₹ 500.25	₹ 1000	₹ 1124.94	₹ 2625.19
Price increase	₹ 37.06	₹ 0.00	-₹9.26	₹ 27.80
Coupon income	₹ 0.00	₹ 80.00	₹ 100.00	₹ 180.00
Income	₹ 37.06	₹ 80.00	₹ 90.74	₹ 207.80
Rate of Return	8.00%	8.00%	8.00%	8.00%

We therefore get a portfolio Value of ₹ 2597.39 now and ₹ 2625.19 a year later. With a overall capital gain of ₹ 27.80 and overall coupon income of ₹ 180.00 we have overall return of 8% on the portfolio. Note that this is equal to the yield we expect over the next one year.

Q. 4. (a) Negotiation is going on for transfer of A. Ltd. on the basis of Balance Sheet and the additional information as given below:

Balance Sheet of A. Ltd.

As on 31st March, 2014

Liabilities	Amount (₹)	Assets	Amount (₹)
Share Capital (₹10 fully paid up)	10,00,000	Goodwill	1,00,000
Reserves & Surplus	4,00.000	Land & Building	3,00,000
Sundry Creditors	3,00,000	Plant & Machinery	8,00,000
		Investment	1,00,000
		Stock	2,00,000
		Debtors	1,50,000
		Cash & Bank	50,000
Total	17,00,000	Total	17,00,000

Profit before tax for 2013-14 amounted to ₹6,00,000 including ₹ 10,000 as interest on investment. However, an additional amount of ₹ 50,000 per annum shall be required to be spent for smooth running of the business. Market value of the land & building and plant & machinery are estimated at ₹ 9,00,000 and ₹ 10,00,000 respectively. In order to match the above figures further depreciation to the extent of ₹ 40,000 should be taken into consideration. Income tax rate may be taken at 30%. Return on capital @ 20% before tax may be considered as normal for this business for the present stage.

For the purpose of determining the rate of return profit for this year after the aforesaid adjustments may be taken as expected average profit. Similarly, average trading capital employed is also to be considered on the basis of position in this year.

It has been agreed that a three years purchase of super profit shall be taken as the value of goodwill for the purpose of the deal. You are requested to calculate the value of goodwill for the company.

(b) The Following are the operating results of a firm:

Sales (Units)	25,000
Interest per annum	₹ 30,000
Selling price per unit	₹ 24
Tax rate	35% including education cess
Variable cost per unit	₹ 16
Fixed cost per annum	₹ 80,000

Compute operating leverage and financial leverage.

[10+5=15]

Answer: 4. (a)

Valuation of goodwill	(Amount in ₹)
Capital employed on 31st March, 2014:	
Land and Building	9,00,000
Plant and Machinery	10,00,000
Stock	2,00,000
Debtors	1,50,000
Cash & Bank	50,000
Less: Sundry Creditors	(3,00,000)
	20,00,000

Average maintainable trading profit for the year ended 31st March, 2014

	Amount (₹)	Amount (₹)
Net Profit before tax		6,00,000
Less: Additional depreciation	40,000	
Less: Additional recurring expenses	50,000	
Less: Non operating earnings (Interest on Investment)	10,000	
		1,00,000
		5,00,000
Provision for Taxation @ 30% of ₹ 5,40,000		1,62,000
(Further depreciation provided not tax deductible)		
Average maintainable profit		3,38,000
Closing capital employed 31.03.2014		20,00,000
		1,69,000
Less: 50% of average maintainable profit		
Average Capital employed		18,31,000
		3,38,000
Average maintainable profit		2,56,340
Less: Normal profit 14% on capital employed (₹ 18,31,000)		81,660
Valuation of Goodwill		
Goodwill at 3 years purchase of super profit (₹ 81,660 × 3 years)		2,44,980

(b) Operating Leverage

$$= \frac{\text{Contribution}}{\text{EBIT}} = \frac{₹2,00,000}{₹1,20,000} = 1.67$$

Financial Leverage

$$= \frac{\text{EBIT}}{\text{EBT}} = \frac{₹1,20,000}{₹90,000} = 1.33$$

Note: Contribution = 25,000 × (₹ 24 – ₹ 16) = ₹ 2,00,000.

EBIT = Contribution – Fixed Cost = ₹ 2,00,000 – ₹ 80,000 = ₹ 1,20,000.

EBIT = EBIT – Interest = ₹ 1,20,000 – ₹ 30,000 = ₹ 90,000.

Q. 5. (a) Bikram Ltd has hired a Marketing Consultancy Firm for doing market research and provides data relating to Tyre industry for the next 10 years. The following were the observations and projections made by the consultancy firm —

 I. **The Tyre Industry in the target area i.e., whole of India, is expected to grow at 5% p.a. for the next 3 years, and thereafter at 7% p.a. over the subsequent seven years.**

 II. **The market size in terms of unencumbered basic sales of tyres was estimated at ₹8,000 lakhs in the last year, dominated by medium and large players. This includes roughly 9.0% of fake brands and locally manufactured tyres. Market share of this segment is expected to increase by 0.5%.**

 III. **Cheap Chinese imports accounts for 40% of the business (but 60% of the volume. This is expected to increase by 0.25% over the next decade.)**

 IV. **The other large players account for roughly 35% of the business value, which is expected to go down by 0.5% over the next ten years, due to expansion of Bikram Ltd's product portfolio.**

 V. **The Company is in the process of business re-engineering, which will start yielding results in 2 years time, and increase its profitability by 3% from its existing 12%.**

 If the appropriate discount rate is 16% what is the Brand Value of Bikram Ltd., under Market oriented Approach.

 (b) From the following information taken from the books of Progressive Ltd. relating to staff and community benefits, prepare a statement showing value of benefits to staff and community at large, as required under Corporate Social Reporting.

	₹
Environment Improvements	20,10,000
Medical Facilities to staff and family	45,00,000
Training Programmes conducted in-house	10,25,000
Generation of Job Opportunities in the locality	60,75,000
Municipal Taxes paid	10,70,000

Increase in cost of living in the vicinity due to a thermal power station	16,55,000
Concessional transport, water supply to staff	11,25,000
Extra work put in by company staff and officers for drought relief	18,50,000
Leave encashment and leave travel benefits	52,00,000
Educational facilities for children of staff members	21,60,000
Subsidised canteen facilities on premises	14,40,000
Generation of business in the district	25,00,000

[8+7=15]

Answer: 5. (a)

(i) Current Market Share = 100 – Fake Brands 9% - Chinese Imports 40% - Other Domestic Brands 35% = 16%.

(ii) Increase or Decrease in Market Share: Chinese Imports 0.25% + Local Brands 0.5% - Other Players 0.5% = 0.25% increase other product's market share. Hence, market share is expected to fall by 0.25% every year over the decade, from the current levels of 16%. Therefore, next year it will be 15.75%, the year after 15.50% etc.

Brand valuation under Market Approach

Year	Market Size (₹Lakhs)	Market Share of Bikram Ltd.	Market Share (₹Lakhs)	Expected Profit (₹Lakhs)	Discount Factor at 16%	Discounted Cash Flow
1	8,000.00 + 5% = 8,400.00	15.75%	1,323.00	@ 12% = 158.76	0.862	136.85
2	8,400.00 + 5% = 8,820.00	15.50%	1,367.10	@ 12% = 164.05	0.743	121.89
3	8,820.00 + 5% = 9,261.00	15.25%	1,412.30	@ 15% = 211.84	0.641	135.79
4	9,261.00 + 7% = 9,909.27	15.00%	1,486.39	@ 15% = 222.96	0.552	123.07
5	9,909.27 + 7% = 10,602.92	14.75%	1,563.93	@ 15% = 234.59	0.476	111.66
6	10,602.92 + 7% = 11,345.12	14.50%	1,645.04	@ 15% = 246.75	0.410	101.17
7	11,345.12 + 7% = 12,139.28	14.25%	1,729.85	@ 15% = 259.48	0.354	91.86
8	12,139.28 + 7% = 12,989.03	14.00%	1,818.46	@ 15% = 272.77	0.305	83.19
9	12,989.03 + 7% = 13,898.26	13.75%	1,911.01	@ 15% = 286.65	0.263	75.39
10	13,898.26 + 7% = 14,871.14	13.50%	2,007.60	@ 15% = 301.14	0.227	68.36
	Brand Value					**1049.23**

Brand Value of Bikram Ltd. under market oriented approach is ₹1049.23 lakhs.

(b)

Progressive Ltd.
Statement relating to staff and community benefits

I.   Social Benefits and Cost to Staff

	₹
A. Social Benefits to Staff	
(i) Medical facilities	45,00,000

(ii) Medical facilities	10,25,000
(iii) Concessional transport water supply	11,25,000
(iv) Leave encashment and leave travel benefits	52,00,000
(v) Educational facility for children of staff members	21,60,000
(vi) Subsidised canteen facilities	14,40,000
Total	**1,54,50,000**
B. Social Cost to Staff	
Extra work put in by staff and officers for drought relief	18,50,000
Net Social Benefits to Staff (A – B)	**1,36,00,000**

II. Social Benefits and Cost to community

	₹
A. Social Benefits to Community	
(i) Environmental improvements	20,10,000
(ii) Generation of job opportunities	60,75,000
(iii) Municipal taxes	10,70,000
(iv) Generation of business	25,00,000
Total	**1,16,55,000**
B. Social Cost to Community	
Increase in cost of living in the vicinity due to a thermal power station	16,55,000
Net Social Benefits to Community (A – B)	**1,00,00,000**

Q. 6. (a) S Ltd. gives the following information:

Current Profit	**₹210 lakhs**
Compound growth rate of profit	**7.5%**
Current cash flows from operations	**₹270 lakhs**
Compound growth rate of cash flows	**6.5% p.a.**
Current price earning ratio	**12**
Discount factor	**15%**

Find out the value of S Ltd. taking 10 years projected profit or cash flows based on
    (i) Discounted earning method,
    (ii) Discounted cash flows method.

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

[(5+5)+5=15]

Answer: 6. (a)

(i) Discounted earning method   (₹in lakhs)

Year	Earnings	Discount Factor @ 15%	Present Value
1	225.75	0.8696	196.312
2	242.68	0.7561	183.490
3	260.88	0.6575	171.529
4	280.45	0.5717	160.333
5	301.48	0.4972	149.896
6	324.09	0.4323	140.104
7	348.40	0.3759	130.963
8	374.53	0.3269	122.434
9	402.62	0.2842	114.425
10	432.82	0.2472	106.993
			1476.479

Value of the business ₹1476.479 lakhs

(ii) Discounted Cash flows method   (₹in lakhs)

Year	Earnings	Discount Factor @ 15%	Present Value
1	287.55	0.8696	250.053
2	306.24	0.7561	231.548
3	326.15	0.6575	214.444
4	347.35	0.5717	198.580
5	369.92	0.4972	183.924
6	393.97	0.4323	170.313
7	419.58	0.3759	157.720
8	446.85	0.3269	146.075
9	475.89	0.2842	135.248
10	506.83	0.2472	125.288
			1813.193

Value of the business   ₹1813.193 lakhs.

(b) Jaggi and Lau suggested a model for valuation of human resources. According to them, proper valuation of human resources is not possible unless the contributions of individuals as a group are taken into consideration. They referred group to homogeneous employees whether working in the same department or division of the organization or not. They believed that an individual's expected service tenure in an organization is difficult to predict, but on a group basis, it is relatively easy to estimate the percentage of people in a group likely to leave the organization in future. Accordingly, they developed a model which attempts to calculate the present value of all existing employees in each rank. Such present value is measured with the help of the following steps:
(i) Ascertain the number of employees in each rank.
(ii) Estimate the probability that an employee will be in his rank within the organization on terminated/promoted in the next period. This probability will be estimated for a specified time-period.
(iii) Ascertain the economic value of an employee in a specified rank during each time period.

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

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

Demerit:
(i) This model ignores individual skills of the employees. The varied skills of the employees are not recognized in the valuation process under Jaggi and Lau model.
(ii) The performance of a group may be seriously affected in the event of exit of a single individual.

Q. 7. (a) Discuss how would you value a real estate. List the different levels of market efficiency.

(b) The following information is given for 2 companies that are identical except for their capital structure:

	RICE	WHEAT
Total Invested Capital	1,00,000	1,00,000
Debt/Asset Ratio	0.8	0.5
Shares Outstanding	6,100	8,300
Pre Tax Cost of Debt	16%	13%
Cost of Equity	26%	22%
Operating Income(EBIT)	25,000	25,000
Net Income	8,970	12,350

The tax rate is uniform 35% in all cases.
a) Compute the weighted average cost of capital for each company.
b) Compute the Economic Value Added (EVA) for each company.
c) Based on the EVA, which company would be considered for best investments?
d) If the industry PE ratio is 11, estimate the price for the share of each company.
e) Calculate the estimated market capitalization for each of the companies.

[5+(2+2+1+3+2)=15]

Answer: 7. (a)

For evaluation of a real estate, one can use the cash flow technique. Of course, in order to use the Discounted cash flow technique the valuer should consider cash inflows like rent, reimbursement of rates and utility expenses, terminal value as well as cash outflows like property taxes, insurance, repairs and maintenance, advertising and utility expenses.

Other simpler methods like Standardized Value Measures (e.g. price per square meter) and Comparable Asset Values (gross income multiplier) are also used.

It should be noted the CAPM (Capital Asset Pricing Model) and the APM (Arbitrage Pricing Model) cannot be used easily in valuing a real estate because of some inherent features in real estates e.g., lack of regular trading in real estates, dissimilar nature of any two real estates, terminal values often differing between two real estates, and the like.

Investors determine stock prices on the basis of the expected cash flows to be received from a stock and the risk involved. Rational investors should use all the information they have available or can reasonably obtain. The information set includes beliefs about the future (ie, information that can reasonably be inferred). A market is efficient relative to any information set if investors are unable to earn abnormal profits (returns beyond those warranted by the amount of risk) by using that information set in their investing decisions.

An efficient market is defined as one in which all information is reflected in stock prices quickly and fully. If some types of information are not fully reflected in prices and there is some lag in the information being reflected in prices, the market is not perfectly efficient, though it is certainly not inefficient. According to the efficient market hypothesis (EMH), the market is classified as weak-form efficient, semi strong efficient and strong-form efficient. E. Fama describes these three levels of efficiency as follows:

Weak Form: This part of the efficient market hypothesis states that prices reflect all price and volume data which are all past. As a result, it gives no idea of future price changes. Technical analysis on the basis of past data is thus of little or no value.

Semi strong Form: It involves not only past known market data, but all publicly known and available data, such as earnings, dividends, stock split announcements, new product developments, financing difficulties, and accounting changes. If any lags exist in the adjustment of stock prices to certain announcements, smart investors can exploit these lags and earn abnormal returns.

Strong Form: This is the most stringent form of market efficiency. It assets that stock prices fully reflect all information, public and nonpublic. The strong form focuses not only on the speed of reflection of the information into stock prices (as the semi strong form does), but considers the value of the information as well. In a strong form efficient market no group of investors should be able to earn, over a reasonable period of time, abnormal rates of return by using information in a superior manner.

(b)

	RICE	WHEAT
Wd	0.8	0.5
Kd	10.4	8.45
We	0.2	0.5
Ke	26	22
WACC	13.52	15.225
Invested Capital	100000	100000
EBIT	25000	25000
NOPAT	16250	16250
EVA	2730	1025
(NOPAT – WACC x Invested Capital)		
Best Company	**RICE**	
Shares	6100	8300

Net Income	8970	12350
EPS	1.47	1.49
Price (P/E = 11)	16.17	16.37
Market Cap	98637	135871

Q. 8.(a) A Ltd. has a capitalization rate of 10%. It currently has 100000 shares of ₹100 each. The firm is deciding to pay ₹6 as dividend at the end of the current fiscal year, which has just begun. Answer the following questions based on MM irrelevancy model and assume no taxes:

(i) What will be the price of the share at the end of the year if a dividend is declared?
(ii) What will be the price of the share at the end of the year if a dividend is not declared?
(iii) Assuming that the firm pays dividend, has a net income of ₹10 lakhs and makes new investments of ₹20 lakhs during the period, how many new shares must be issued?

(b) State the reasons for mergers and acquisitions.   [(2+1+7)+5=15]

Answer: 8.(a)

(i) If dividend is declared :
P_O = ₹100
k is the cost of equity capital =10%
D_1 = ₹6
P_1 = the market price at the end of period one =?

$$P_0 = \frac{P_1 + D_1}{1+k} \text{ i.e. } P_1 = ₹104$$

(ii) If dividend is not declared
D_1 = 0 Therefore, P_1 = ₹110.

(iii) Calculation of number of shares to be issued:

	Dividend Declared	Dividend NIL
Net Income	1000000	1000000
Less: Dividends paid	600000	-
Retained Earnings	400000	1000000
New Investments	2000000	2000000
Amount to be raised by issue of new shares (A)	1600000	1000000
Market price per share (B)	₹104	₹110
New shares to be issued (A/B)	15385	9091

Alternatively, use the formula $\Delta N = \dfrac{I - (E - nD_1)}{P_1}$ to get the same answer.

Verification:

	Dividend Declared	Dividend NIL
Existing shares	100000	100000
New shares issued	15385	9091
Total number of shares at year end (i)	115385	109091
Market price per share (ii)	₹104	₹110
Total Market Value (i) × (ii)	₹120 lakhs	₹120 lakhs

Thus dividends paid or not, does not alter the market value of the firm, which is exactly what MM Irrelevance theory states.

(b) There are a number of reasons for mergers and acquisition, why two companies may be worth more together, than when they are apart. These are given below:

(i) **Economies of Scale:** Economies are stated to accrue in terms of sharing central services such as procurement, accounting, financial control, human resources management and development, and top-level management and control.

(ii) **Economies of Vertical Integration:** Organizations seek to attain economies by moving both forward and backward. Reliance Industries is a classic case, as it set up its polymer plants to cater to its textile operations, moved back further to set up petroleum refinery and then moved forward to set up its own outlets for petroleum products. The current trend of all metallurgical companies such as Tata Steel, SAIL, JSW Steel, Vedanta and Hindalco to acquire mines across the globe is a classic example.

(iii) **Complementary Resources**: When two companies have a complimentary resource that is each having what the other needs, they may see some logic to come together. The recently announced decision of HP to acquire EDS appears to be for these reasons.

(iv) **Investible** Surplus **Funds:** When organizations have investible surplus funds, that had not been distributed to the shareholders as higher dividends or bonus stocks, they look for investment opportunities. Organizations that have excess cash and do not payout to their shareholders or invest it through acquisitions may become targets of take-over.

(v) **Eliminating Inefficiencies:** Organizations with unexploited opportunities to cut costs and improve revenues become take-over targets of organizations with better management. Consider Tata Motors' recent acquisition of Jaguar and Land Rover: The key here is the ability of Tata Motors to implement cost savings at JLR. What will help assess the long-term impact of the acquisition 90 the profitability of Tata Motors is how much of the marquee brands' component sourcing can actually be done from India….."