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) Land and building is an example of financial asset.

(ii) Variable dividend feature makes the calculation of share value difficult.

(iii) Stock dividends and stock splits may increase the stock price but not the value of business.

(iv) In constant growth model, the value of equity share is sensitive to growth rates.

(v) A stock with low price-earnings ratio shows that it is undervalued and may earn excess return.

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

(i) A …….. is essentially a container for a customer's complete experience with the offer and the company.(good will/brand)

(ii) A …….. is a contractual agreement under which one party grants the other party the right to sell certain products or services or to use certain trade names or trademarks.(licence/franchise)

(iii) …….. is a research the purpose of which in mergers and acquisitions is to support valuation process, arm the negotiator, test the accuracy of representations and warranties contained in the merger agreement, fulfill disclosure requirements and inform the planners of post-merger integration.(Due diligence/Certification)

(iv) In a debt for equity swap, a firm replacing equity with debt …….. its leverage ratio.(increases/ decreases)

(v) Operating department in manufacturing is a production department that adds value to a product or service that is observable by the …….. (production manager/customer).

(vi) Assets held as stock in trade are not …….. (investments/disinvestments).

(vii) …….. is a Government granted right to authors, sculptures, painters for their creations. (Patent/Copy right)

(viii) Networth of a firm as per Balance Sheet is called its …… (book value, market value).

(ix) If expected rate of return is more than required rate, stock should be …… (bought,sold).

(x) In a conglomerate merger, the concerned companies are in …….. lines of business.(related, unrelated).

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

(i) The price of a company's share is 1100 and the value of growth opportunities is ₹ 25. The company's capitalisation rate is 20%. The E/P Ratio is
(a) 15%
(b) 11.25%
(c) 20%
(d) 5%

(ii) A firm has PAT of ₹ 33.6 lakhs with extraordinary income of ₹6 lakhs. Cost of capital is 20% and the applicable tax rate is 40%. The value of the firm is
(a) ₹ 250 lakhs
(b) ₹ 150 lakhs
(c) ₹ 180 lakhs
(d) ₹ 168 lakhs

(iii) FCFF at the end of last year of explicit forecast period is ₹10 lakhs. If cost of capital is 15% and steady growth rate is 5%, the terminal value of the firm is
(a) ₹ 100 lakhs
(b) ₹ 10 lakhs
(c) ₹ 10.5 lakhs
(d) ₹ 105 lakhs

(iv) A share has a current market price of ₹30. One month call is available at a strike price of ₹29. It is known that after 1 month, the share price may be ₹32 or ₹ 28 If risk free rate is 8%, the value of the call is
(a) ₹3
(b) Nil
(c) ₹1
(d) ₹1.67

(v) The number of shares outstanding as on 31.03.09 for a company is 10 lakhs and it has reported net profit of ₹20 lakhs for the year 2008-09. The company decides to repurchase 20% shares at ₹32 per share. The P/E ratio remains unchanged after repurchase. The post-byeback price/share is
(a) ₹42
(b) ₹32
(c) ₹40
(d) ₹25.6

Answer:

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

(i) False

(ii) True

(iii) True

(iv) True

(v) True

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

(i) brand

(ii) franchise

(iii) Due diligence

(iv) increases

(v) customer

(vi) investments

(vii) Copyright

(viii) book value

(ix) bought

(x) unrelated

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

(i) (a) 15%

(ii) (b) ₹ 150 lakhs

(iii) (d) ₹ 105 lakhs

(iv) (d) ₹1.67

(v) (c) ₹40

Q. 2. (a) The following data relates to Samurai Ltd. profit & loss data

	Year 2012 ₹ in lakhs	Year 2013 ₹ in lakhs
Turnover	19900	23600
Pre-tax accounting Profit	4200	5300
Taxation	1260	1600
Profit after tax	2940	3700
Dividends	1000	1200
Retained Earnings	1940	2500

Balance Sheet Data

	Year 2012 ₹ in lakhs	Year 2013 ₹ in lakhs
Fixed Assets	7400	9600
Net Current Assets	8000	10000
	15400	19600
Finance by shareholders funds	11900	14400
Medium and long term Bank loan	3500	5200
	15400	19600

Pre-tax accounting profit is taken after deducting the economic depreciation of the company's fixed Assets (also the depreciation used for tax purposes)

Additional Information

- **Economic depreciation was ₹1900 lakh in 2012 and ₹2100 lakh in 2013.**
- **Interest expenses were ₹260 lakh in 2012 and ₹360 lakh in 2013.**
- **Other non cash expenses were ₹640 lakh in 2012 and ₹720 lakh in 2013.**
- **The tax rate in 2012 and 2013 was 30%.**
- **Samurai Ltd. has non-capitalized leases valued at ₹700 lakh in each year 2012 – 2013.**
- **The company's pre-tax cost of debt was estimated as 7% in 2012 and 8% in 2013.**
- **The company's cost of equity was estimated as 15% in 2012 and 17% in 2013.**
- **The target capital structure is 80% equity and 20% debt.**
- **Balance sheet capital employed at the end of 2011 was ₹13900 lakh.**

Estimate the economic value added for Samurai Ltd. for 2012 and 2013.

(b) A company belongs to a risk class for which the appropriate capitalization rate is 10 per cent. It currently has outstanding 25000 shares selling at ₹100 each. The firm is contemplating the declaration of dividend of ₹5 per cent share at the end of the current financial year. The company expected to have a net income of ₹2.5 lakhs and has a proposal for making a new investment of ₹5 lakhs.

Show that under the Modigliani and Millar assumptions, the payment of dividend does not affect the value of the firm. [7+8]

Answer: 2. (a)

EVA = NOPAT – (capital employed × cost of capital)

Computation of NOPAT

	Year 2012 ₹in lakhs	Year 2013 ₹in lakhs
Profit after tax	2940	3700
Add: Non Cash expenses	640	720
Interest after tax (1 – 0.30)	182	252
	3762	4672

Computation of capital employed

	Year 2012 ₹in lakhs	Year 2013 ₹in lakhs
Capital employed at end of 2011 + leases [13900 + 700]	14600	
Book value of shareholders fund + Bank loan + Leases [11900 + 3500 + 700]		16100

Computation of Weighted average

	Year 2012 ₹in lakhs	Year 2013 ₹in lakhs
Cost of capital:		
0.80 x 0.15 + 0.20 x 0.07 (1 – 0.30)	12.98%	
0.80 x 0.17 + 0.20 x 0.08 (1 – 0.30)		14.72%

Computation of EVA

	Year 2012 ₹in lakhs	Year 2013 ₹in lakhs
[3762 – (14600 x 12.98%)]	1866.92	
[4672 – (16100 x 14.72%)]		2302.08

The company has created significant value in both 2012 and 2013.

Answer: 2. (b)

As per MM Model

When dividends are paid

$$P_o = \frac{1}{1+K_e} x\ (D_1+P_1)$$

Or, $100 = \frac{1}{1+0.10} x\ (5+P_1)$

Or, $P_1 = 105$

New shares to be issued

$mP_1 = I - (E - nD_1)$

or, m 105 = 5,00,000 – (2,50,000 – 1,25,000)

m = 3571 shares approx

Therefore, current value of the firm

$$nP_o = \frac{1}{1+K_e}\{(n+m)\ P_1 - I + E\}$$

$$= \frac{1}{1+0.10}\{(25,000 + 3,571) \times 105 - 5,00,000 + 2,50,000\}$$

nP_o = ₹24,99,959 or ₹25,00,000 (approx)

When dividends are not paid

$$P_o = \frac{1}{1+K_e} x\ (D_1+P_1)$$

Or, $100 = \frac{1}{1+0.10} x\ (0+P_1)$

Or, P_1 = ₹110

New shares to be issued

$mP_1 = I - (E - nD_1)$

or, m 110 = 5,00,000 – (2,50,000 – n x 0)

m = 2273 shares

Therefore, current value of the firm

$$nP_o = \frac{1}{1+K_e}\{(n+m)\ P_1 - I + E\}$$

$$= \frac{1}{1+0.10}\{(25,000 + 2,273) \times 110 - 5,00,000 + 2,50,000\}$$

nP_o = ₹25,00,027 or ₹25,00,000 (approx)

Comment:

Thus under this approach the payment of dividend or otherwise, does not affect the value of the firm.

Q. 3. (a) SUN Ltd. acquire 40% of MOON Ltd's shares on April 2, 2013, the price paid was ₹ 2,80,000. MOON Ltd's shareholder equity shares are as follows:

Equity Shares (Paid-up)	1,00,000
Share Premium	3,00,000
Retained Earning	1,00,000
	5,00,000

Further MOON Ltd. reported a net income of ₹ 60,000 and paid dividends of ₹ 20,000. SUN Ltd. has subsidiary on 31.03.2011. Calculate the amount at which the investment in MOON Ltd. should be shown in the consolidated Balance Sheet of SUN Ltd as on 31.03.2014.

(b) State with reference to accounting standard, how you will value the inventories in the following cases:

(i) In a production process, normal waste is 5% of input 10,000 MT of input were put in process resulting in a wastage of 600 M.T. cost per MT of input is ₹2000. The entire quantity of waste is on stock at the end of the year.

(ii) Per Kg. of finished goods consisted of :

Material Cost	₹50 per Kg.
Direct labour cost	₹10 per Kg.
Direct variable production overhead	₹5 per Kg.

Fixed production charges for the year on normal capacity of 50,000 Kgs. are ₹5,00,000. 1,000 Kgs of finished gods are on stock at the year end.

(c) NIZAM Ltd. has substantial cash flow and until the surplus funds are utilized to meet the future capital expenditure, likely to happen after several months, are invested in a portfolio of short-term investments, details for which are given below:

Investment	No. of Shares	Beta	Market Price per share	Expected yield
A	8,000	1.16	4.29	19.50%
B	10,000	2.28	2.92	24.00%
C	11,200	0.90	2.17	17.50%
D	14,500	1.50	3.14	24.00%

The current Market Return is 20% and the Risk Free Rate is 12%

Required to:

(i) Calculate the Risk of NIZAM's short-term investment portfolio relative to that of the market;

(ii) Whether NIZAM should change the composition of its portfolio.

(d) A company has purchased plant and machinery in the year 2010-11 for ₹90 lakhs. A balance of ₹10 lakhs is still payable to the supplier for the same. The suppler waived off the balance amount during the financial year 2013-14. The company treated it as income and credited to profit and loss account during 2013-14. Whether accounting treatment of the company is correct. If not, state with reasons. [4+(2+3)+(2+2)+2]

Answer: 3. (a)

As per AS-23 when the investor company prepares the consolidated Balance Sheet, the investment in associate i.e., MOON Ltd. shall be carried by equity method and goodwill and capital reserve to be identified and disclosed.

Extract of consolidated Balance Sheet of SUN Ltd. as on 31.03.2014

Liabilities	₹	Assets	₹
		Investment in MOON Ltd.	
		Associates 2,16,000	
		Goodwill 80,000	2,96,000

Goodwill identified = (2,80,000 – 40% of 5,00,000) = ₹80,000

Carrying amount of investment on 31.03.2013 as per equity method.

= ₹ (2,80,000 + [40% of 60,000] – [40% of 20,000])

= ₹ (2,80,000 + 24,000 – 8,000)

= ₹ 2,96,000.

Answer: 3. (b)

(i) As per para 13 of AS 2 (Revised), abnormal amounts of waste materials, labour or other production costs are excluded from cost of inventories and such costs are recognized as expenses in the period in which they are incurred.
In this case, normal waste is 500 MT and abnormal waste is 100 MT. The Cost of 500 MT. will be included in determining the cost of inventories (finished goods) at the year end. The cost of abnormal waste amounting to ₹2,00,000 (100MT x ₹2000) will be charged in the profit and loss statement.

(ii) In accordance with paras 8 and 9 of AS 2 (Revised), the costs of conversion include a systematic allocation of fixed and variable production overheads that that are incurred in converting materials into finished goods. The allocation of fixed production overhead for the purpose of their inclusion in the costs of conversion is based on the normal capacity of the production facilities.

Thus, cost per Kg. of finished goods can be computed as follows:

Particulars	Amount (₹)
Material cost	50
Direct labour cost	10
Direct variable production overhead	5
Fixed production overhead = $\left(\frac{5,00,000}{50,000}\right)$	10
	75

Thus the value of 1000 Kgs. of finished goods on stock at the yearend will be
= (₹75 x 1000 Kgs.) = ₹75,000.

Answer: 3. (c)

(i) Computation of risk of NIZAM short term investment:

Investment	No. of Shares	MPS	Value of Portfolio
A	8,000	4.29	34320
B	10,000	2.92	29200
C	11,200	2.17	24304
D	14,500	3.14	45530
			133354

$$\beta = \left[1.16x\frac{34320}{133354}\right]+\left[2.28x\frac{29200}{133354}\right]+\left[0.90x\frac{24304}{133354}\right]+\left[1.50x\frac{45530}{133354}\right] = 1.47$$

(ii) Composition of NIZAM's Portfolio:

Investment	$K_e = R_F + \beta (R_M - R_F)$	Expected Yield	Comment
A	= 12% + 1.16 (20% - 12%) = 21.28%	19.50%	Overpriced = Sell
B	= 12% + 2.28 (20% - 12%) = 30.24%	24%	Overpriced = Sell
C	= 12% + 0.90 (20% - 12%) = 19.20%	17.50%	Overpriced = Sell
D	= 12% + 1.50 (20% - 12%) = 24%	24%	Correctly Price = Buy/Hold

Answer: 3. (d)

As per para 9.1 of AS – 10 the changes subsequent to its acquisition or construction on account of exchange fluctuation, price adjustments, changes in duties or similar factors. After considering the above the treatment done by the company is not correct. ₹10 lakhs should be deducted from the cost of fixed assets.

Q. 4. (a) A Ltd. is considering the proposal to acquire B Ltd. and their financial information is given below:-

Particulars	A Ltd.	B Ltd.
No. of equity shares	**10,00,000**	**6,00,000**
Market price per share (₹)	**30**	**18**
Market Capitalisation (₹)	**3,00,00,000**	**1,08,00,000**

A Ltd. intends to pay ₹1,40,00,000 in cash for B Ltd. if B Ltd's market price reflects only its value as a separate entity. Calculate the cast of merger.

(i) When merger is financed by cash

(ii) When merger is financed by stock and A Ltd. agrees to exchange 5,00,000 shares in exchange of shares in B Ltd.

(b) Calculate the price of 3 month PQR futures, if PQR (FV ₹10) quotes ₹ 300 on NSE, and the 3 month futures prices quotes at ₹ 306, and the one month borrowing rate is given as 15% and the expected annual dividend yield is 25% p.a. payable before expiry.

(c) 2COMS Consulting Ltd. is a firm that specializes in offering management consulting services to software companies.

2COMS Ltd. reported operating income (EBIT) of ₹306 lakh and net income of ₹135 lakh in the most recent year. however, the firms expenses include the cost of recruiting new consultants and the cost of training which amounts to ₹60 lakh. A consultant who joins 2COMS Consulting Ltd. stays with the firm, on an average, for 4 years. Recruitment and training expenses are amortizable over 4 years immediately following the year in which they are incurred. Over the past 4 years the expenses are:

Year	Training, Recruitment Expenses (₹in lakh)
Current	60
Year 1	48
Year 2	45
Year 3	36
Year 4	30

Assuming a linear amortization schedule (over 4 years)

Estimate:

(i) The value of human capital asset and the amount of training and recruitment expenses amortization for this year.

(ii) The adjustment to operating income. **[(2+5)+(4+2)+2]**

Answer: 4. (a)

(i) Cost of merger when it is financed by cash.

Cost of merger = (Cash - Pv_B)

= (1,40,00,000 – 1,08,00,000)

= ₹3,20,000

If the cost of merger becomes negative, then the equity share holder of Firm A gain higher by acquiring Firm B in terms of its market value.

ii) Cost of Merger when it is financed by stock:

Cost of merger $\propto$ = $Pv_{A\beta}$ - Pv_β

Where, $\propto$ $Pv_{A\beta}$ = Value in firm A that firm B's shareholders get

If firm A agrees to pay by way of 5,00,000 equity shares instead of cash of ₹1,40,00,000, now the apparent cost would be as follows:

Particulars	₹
5,00,000 shares @ ₹30 each	1,50,00,000
Less: Market value of Firm B	1,08,00,000
	42,00,000

$Pv_{A\beta} = Pv_A + Pv_\beta$ = 3,00,00,000 + 1,08,00,000 = 4,08,00,000

Proportion that firm B's shareholders get in firm A's capital structure will be

$= \frac{5,00,000}{10,00,000 + 5,00,000} = 0.33$ i.e., $\frac{1}{3}$

True cost of merger = $\propto Pv_{A\beta} - Pv_\beta = (\frac{1}{3} \times 4,08,00,000) - 1,08,00,000 = 28,00,000$

The apparent cost as calculated above is ₹42,00,000, where as true cost is ₹28,00,000 i.e., apparent cost is more than true cost and merger is beneficial to Firm B.

Answer: 4. (b)

Future's Price = Sport + Cost of carry – Dividend

= 300 + 300 x 0.15 x 0.25 – 2.5

= ₹ 308.75

Note: Entire 25% dividend is payable before expiry, which is ₹2.50.

Analysis:

Thus we see that futures price by calculation is ₹ 308.75 and is quoting at ₹ 306 in the exchange.

Hence, fair value of futures more than the actual future price.

Futures undervalued in the market and it is advised to buy.

Answer: 4. (c)

2COMS Consulting Ltd.

Year	Training, Recruitment Expenses (₹in lakh)	Unamortization portion (₹in lakhs)	Amortization this year (₹in lakhs)
Current	60	60 (100%)	---
Year 1	48	36 (75%)	12
Year 2	45	22.5 (50%)	11.25
Year 3	36	9 (25%)	9
Year 4	30	0	7.5
Total		127.50	39.75

(i) The value of human capital assets as at the end of current year is ₹127.50 lakhs and amount of training and recruitment expenses amortization by debit to P&L account this year is ₹39.75 lakhs.

(ii) Adjusted Operating Income.
= Operating Income + training & recruitment expenses – amortization of expenses this year
= (306 + 60 – 39.75) lakhs
= ₹326.25 lakhs.

Q. 5. (a) Following information's are available in respect of Bengal Aerotroplis Project Ltd. which is expected to grow at a higher rate for 4 years after which growth rate will stabilize at a lower level:

Base year information:

Particulars	₹in lakhs
Revenue	20,000
EBIT	3,000
Capital Expenditure	2,800
Depreciation	2,000

Information for high growth and stable growth period are as follows:

Particulars	High Growth	Stable Growth
Growth in Revenue & EBIT	20%	10%
Growth in capital expenditure and depreciation	20%	Capital expenditure are offset by depreciation
Risk free rate	10%	9%
Equity beta	1.15	1
Market risk premium	6%	5%
Pre tax cost of debt	13%	12.86%
Debt equity ratio	1:1	2:3

For all time, working capital is 30% of revenue and corporate tax rate is 35%.
What is the value of the firm?

(b) The following financial share date pertaining to ALPHA LTD on IT company are made valuable to you:

Year ended March 31st	2014	2013	2012
EBIT (₹)	696.03	325.65	155.86
Non-branded Income (₹)	53.43	35.23	3.46
Inflation compound factor @ 8%	1.000	1.087	1.181
Remuneration of Capital	5% of average Capital employed		
Average Capital Employed (₹)	1200.00		
Corporate Tax Rate	35%		
Capitalization Factor	14%		

You are required to calculate the Brand Value for ALPHA Ltd. [10+5]

Answer: 5. (a)

High growth phase

$K_e = R_f + \beta (R_m - R_f)$
$K_e = 0.10 + 1.15 \times 0.06 = 0.169$ or 16.9%

$K_d = I (1 - t)$
$K_d = 0.13 \times (1 - 0.35) = 0.0845$ or 8.45%

WACC = 0.50 x 0.169 + 0.50 x 0.0845 = 0.12675 or 12.68%

Stable growth phase

$K_e = R_f + \beta (R_m - R_f)$
$K_e = 0.09 + 1 \times 0.05 = 0.14$ or 14%

$K_d = I (1 - t)$
$K_d = 0.1286 \times (1 - 0.35) = 0.08359$ or 8.36%

WACC = 0.60 x 0.14 + 0.40 x 0.08359 = 0.117436 or 11.74%

Determination of forecasted Free Cash Flow of the Firm (FCFF)

Particulars	Year 1	Year 2	Year 3	Year 4	Terminal Year
Revenue	24,000	28,800	34,560	41,472	45,619.2
EBIT	3,600	4,320	5,184	6,220.8	6,842.88
EAT = EBIT (I – t)	2,340	2,808	3,369.6	4,043.52	4,447.87
Add: Depreciation	2,400	2,880	3,456	4,147.20	---
Less: Capital Expenditure	(3,360)	(4,032)	(4,838.4)	(5,806.08)	---
Less: Change in working capital	(1,200)	(1,440)	(1,728)	(2,073.60)	(1,244.16)
Free Cash Flow (FCF)	180.00	216.00	259.20	311.04	3,203.71

Note: Computation of change in working capital

Particulars	Year 0	Year 1	Year 2	Year 3	Year 4	Terminal Year
Revenue	20,000	24,000	28,800	34,560	41,472	45,619.2
Working Capital (30% of Revenue)	6,000	7,200	8,640	10,368	12,441.6	13685.76
Change in Working Capital	-	1,200	1,440	1,728	2,073.60	1,244.16

Present value of FCF during the explicit forecast period is:

FCF (₹ in lakhs)	PVF @ 12.68%	PV (₹ in lakhs)
180.00	0.8875	159.75
216.00	0.7876	170.12
259.20	0.6989	181.15
311.04	0.6203	192.94
		703.96

Pv of terminal value is $\frac{₹\,3,203.71}{0.1174 - 0.10} \times \frac{1}{(1.1268)^4}$ = 184121.26 x 0.6203 = 114210.42 lakhs.

Therefore, the value of the firm is ₹(703.96 + 1,14,210.42) lakhs = ₹1,14,914.38 lakhs

Answer: 5. (b)

ALPHA LTD.

Year ended March 31st	2014	2013	2012
EBIT (₹)	696.03	325.65	155.86
Less: Non-brand income(₹)	53.43	35.23	3.46
Adjusted Profits (₹)	642.60	290.42	152.40
Inflation Compound Factor @ 8%	1.000	1.087	1.181
Present Value of Profits for the brand (₹)	642.60	315.69	179.98
Weight age Factor	3	2	1
Weight age profits (₹)	1927.80	631.38	179.98
Profits (₹)	456.53		
Remuneration of Capital (5% of Average capital employed)	60.00		
Brand Related	396.53		
Corporate tax @ 35%	138.79		
Brand Earning	257.74		
Capitalization Factor	14%		

$$\text{Brand Value} = \left(\frac{\text{Brand Earning}}{\text{Capitalization Factor}}\right) = \left(\frac{₹257.74}{0.14}\right) = ₹\,1,841\,\text{crore}$$

Q. 6. (a) X Ltd. expects that a plant has become useless which is appearing in the books at ₹40 lakhs gross value. The company charges SLM – depreciation on a period of 10 years estimated life and estimated scrap value of 3%. At the end of the 7th year the plant has been assessed as useless. Its estimated net realizable value is ₹12,40,000. Determine the loss/gain on retirement of the fixed assets.

(b) An unquoted long term investment is carried in the books at a cost of ₹4 lakhs. The published accounts of the unlisted company received in May 2013 showed that the company was incurring cash losses with declining market share and the long term investment may not fetch more than ₹ 40,000. How would you deal with this in financial statements.

(c) An equipment is leased for 3 years and its useful life is 5 years. Both the cost and the fair market value of the equipment are ₹6,00,000. The amount will be paid in 3 installments and a the termination of lease, lessor will get back the equipment. The unguaranteed residual value at the end of 3 year is ₹80,000. The (internal rate of return) IRR of the investment is 10%. The present value of annuity factor of Re. 1 due at the end of 3rd year at 10% IRR is 2.4868. the present value of Re. I due at the end of 3rd year at 10% rate of interest is 0.7513.

(i) State with reason whether the lease constitutes finance lease.

(ii) Calculate unearned finance income.

(d) M/s. Gopi Industries is planning to issue a bond series on the following terms –

Face value ₹100

Terms of maturity 10 years

Yearly coupon rate

Years	Rate
1-4	8%
5-8	9%
9-10	13%

The current market rate of similar bonds is 14% per annum. The company proposes to price the issue in such a manner that is can yield 15% compounded rate of return to the investors. The company also proposes to redeem the bonds at 5% premium on maturity. You are required to determine the issue price of the bonds.

Year	1	2	3	4	5	6	7	8	9	10
P.V. factor of ₹1 @ 15%	0.8695	0.7561	0.6575	0.5717	0.4971	0.4323	0.3759	0.3269	0.2842	0.2471

[3+3+(2+3)+4]

Answer: 6. (a)

	₹
Cost of the plant	40,00,000
Estimated realizable value (4000000 x 3%)	(1,20,000)
Depreciable amount	38,80,000

Depreciation per year = 3,88,000

Written down value at the end of 7th year = 40,00,000 – (3,88,000 x 7) = ₹12,84,000

As per para 14.2 of AS – 10, items of fixed assets that have been retired from active use and are held for disposal are stated at the lower of their net book value and net realizable value and are shown separately in the financial statements. Any expected loss is recognized immediately in the profit and loss statement. Accordingly, the loss of ₹(12,84,000 – 12,40,000) = ₹44,000 to be shown in the profit and loss account and asset of ₹12,40,000 to be shown in the balance sheet separately.

Answer: 6. (b)

Investments classified as long term investments should be carried in the financial statements at cost. However, provision for diminution shall be made to recognize a decline, other than temporary, in the value of the investments, such reduction being determined and made for each investment individually.

Para 17 of AS-13 Accounting for investments states that indicators of the value of an investment are obtained by reference to its market value, the investee's assets and results and the expected cash flows from the investment. On these bases, the facts of the given case clearly suggest that the provision for diminution should be made to reduce the carrying amount of long-term investment to ₹40000 in the financial statements for the year ended 31st March, 2014.

Answer: 6. (c)

(i) Situations under which a lease can be classified as finance lease are –

(a) Transfer of ownership by the end of the lease term.

(b) Leassee being given the purchase option at lower price.

(c) Lease term is for the major part of the economic life of the asset.

(d) Lease is non-cancellable

(e) Present value of the MLP is substantially equal to FV of leased asset.

Since the present value of MLP is substantially equal to FV of leased asset, the lease appears to be finance lease.

(ii) P_v of MLP = FV - P_v of residual value = 6,00,000 – (80,000 x 0.7513) = ₹5,39,896.

Gross investment in lease = MLP + GRV + UGRV = (539896 / 2.4868 x 3 years) + 0 + 80,000
= 7,31,314

Unearned Finance Income (UFI) = GIL - P_v of GIL

Where, P_v of GIL = P_v of MLP + P_v of UGRV
= 539896 + (80000 X 0.7513)
= 6,00,000

Unearned Finance Income = 731314 – 600000
= ₹131314

Answer: 6. (d)

The issue price of the bonds will be the sum of present value of interest payments during 10 years up to its maturity and present value of redemption value of bonds, discounted at the rate of planned yield.

Year	Cash outflow	P_{VIF} @ 15%	P_V
1	8	0.8695	6.956
2	8	0.7561	6.0488
3	8	0.6575	5.26
4	8	0.5717	4.5736
5	9	0.4971	4.4739
6	9	0.4323	3.8907
7	9	0.3759	3.3831
8	9	0.3269	2.9421
9	13	0.2842	3.6946
10	13 + 105 = 118	0.2471	29.1578
			70.3806

Therefore, bonds should be priced at issue price of Bonds ₹70.38.

Q. 7. (a) How would you value a real estate? What are the different levels of market efficiency?

(b) Discuss various aspects of computation of Economic Value Added and its application in business planning and valuation. When the EVA will increase? [(4+3)+(5+3)]

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.

Answer: 7. (b)

The EVA presents the analysis of the Economic Value Added, an advanced evaluation method that measures the performance and the profitability of the business, taking in account the cost of capital that the business employs.

This method, invented by Stern Stewart & Co. is used today by more and more companies as a framework for their financial management and their incentive compensation system for the managers and the employees.

The EVA is calculated by the following formula:

EVA =NP-TC × WACC

Where:

NP = Net Operating Profit after Tax

TC = Total Capital Employed = Total Equity and Liabilities of the Company

WACC = Weighted Average Cost of Capital

The Weighted Average Cost of Capital (WACC) is calculated as follows:

WACC = (E×CE+SL×CS+LL×CL)/TC

Where:

E = Owners Equity

CE = Average cost of Owners Equity

SL = Short Term Liabilities

CS = Average cost of Short Term Liabilities

LL = Long Term Liabilities

CL = Average cost of Long Term Liabilities

EVA will rise if operating efficiency is improved, if value adding investments are made, if uneconomic activities are curtailed, and if the cost of capital is lowered. In more specific terms, EVA rises when:

- The rate of return on existing capital increases because of improvement in operating performance. This means that operating profit increases without infusion of additional capital in the business,
- Additional capital is invested in projects that earn a rate of return greater than the cost of capital,
- Capital is withdrawn from activities which earn inadequate returns,
- The cost of capital is lowered by altering the financing strategy.

The EVA financial management system is based on the premise that EVA provides a single, unified, and accurate measure of value as well as performance. It links well forward looking valuation and capital budgeting analysis with actual performance measurement. For these reasons and more, EVA is considered as the right measure for goal setting and business planning, performance evaluation, bonus determination, investor communication, capital budgeting and valuation.

Economic Value Added will increase if:

(i) Operating profits can be made to grow without employing capital, ie, with increase in efficiency & without using additional resources,

(ii) Additional capital is invested in projects that return more than the cost of obtaining new capital, i.e, in projects with profitable growth,

(iii) Capital is curtaild that do not cover the cost of capital, i.e, by liquidating unproductive capital,

(iv) Growth is maintained by retained profit so long as its return will exceed the Weighted Average Cost of Capital,

(v) Better financing policy is adopted with reduced cost of capital.

Q. 8. The following is the extract from the Balance Sheets of X Ltd.:

Liabilities	31.03.2013 ₹ lakhs	31.03.2014 ₹ lakhs	Assets	31.03.2013 ₹ lakhs	31.03.2014 ₹ lakhs
Share capital	5000	5000	Fixed Assets	5500	6500
General reserve	4000	4250	10% investment	2500	2500
Profit & Loss A/c	600	900	Stock	2600	3000
18% term loan	1800	1650	Debtors	1700	1100
Sundry Creditors	350	450	Cash at bank	460	450
Provision for tax	110	130	Fictitious Assets	100	80
Proposed dividend	1000	1250			
Total	12860	13630	Total	12860	13630

Additional information:

(i) Replacement values of fixed assets were ₹11000 lakhs on 31.03.2013 and ₹12500 lakhs on 31.03.2014 respectively.

(ii) Rate of depreciation adopted on fixed assets was 5% p.a.

(iii) 50% of the stock is to be valued at 120% of its book value.

(iv) 50% of investments were trade investments.

(v) Debtors on 31st March, 2014 included foreign debtors of $ 350000 recorded in the books at ₹45 per U.S. Dallar. The closing exchange rate was $ 1 = ₹49.

(vi) Creditors on 31st march, 2014 included foreign creditors of $ 600000 recorded in the books of $ 1 = ₹43. The closing exchange rate was $ 1 = ₹49.

(vii) Profits for the year 2013-14 included ₹600 lakhs of government subsidy which was not likely to recur.

(viii) Future maintainable profits (pre-tax) are likely to be higher by 10%.

(ix) Tax rate during 2013-2014 was 50%, effective future tax rate will be 45%.

(x) Normal rate of return expected is 13%

One of the directors of the company Sudip fears that the company does not enjoy a good will in the prevalent market circumstances.

Critically examine this and establish whether X Co. has or has not any goodwill. If your answer were positive on the existence of goodwill, show the leverage effect it has on the company's result.

Industry average return was 10% on long term funds and 13% on equity funds. [15]

Answer: 8.

Calculation of Future Capital Employed

Particulars	**₹in lakhs**	**₹in lakhs**
Profit made during the year:		
Increase in general reserve [4250 – 4000]	250	
Increase in Profit and loss A/c [900 – 600]	300	
Proposed dividend	1250	
Add: current year tax [1800 x $\frac{0.50}{0.50}$]		1800
		1800
Profit before tax		3600
Less: Additional depreciation required [12500 – 6500] x 5%		(300)
Less: Loss on increased valuation of opening stock [2600 x 50% x 20%]		(260)
Add: Profit on increased valuation of closing stock [3000 x 50% x 20%]		300
Less: Income from non trade investment s [2500 x 50% x 10%]		(125)
Add: Profit on restatement of Debtors [350000 x (49-45)]		14
Less: Loss on restatement of creditors [600000 x (49 – 43)]		(36)
Less: Govt. subsidy non-recurring)		(600)
Add: R&D expenses written off (non-recurring)		1250
Add: Fictions assets written off (non-recurring) [100 – 80]		20
Add: Future reduction in interest $\frac{1800+1650}{2}$ x 18% = 310.5		

Future interest (1650 x 18%) = 297.0 Difference = 13.5		
Future maintainable profit (before tax)		13.5
Add: Expected increase @ 10%		3876.50
		387.65
		4264.15
Less: Tax @ 45% (workings)		(2053.87)
Future maintainable profit on equity capital		2210.28
Add: Interest on long term loan (after tax) [1650 x 18%]		297.00
Future maintainable profit on long term capital employed		2507.28

Workings:

Adjusted profit before tax	4264.15
Add: Additional depreciation written back (not tax deductible)	300
Taxable profit	4564.15

Tax on ₹4564.15 lakhs @ 40% = 2053.87

Computation of Capital Employed

	31-03-2013 **₹in lakhs**	**31-03-2014** **₹in lakhs**
Fixed Assets	11000	12500
Trade investments	1250	1250
Stock [50% of 2600 + (50% of 2600 x 1.20)]	2860	
[50% of 3000 + (50% of 3000 x 1.20)]		3300
Debtors	1700	1114
Cash at Bank	460	450
Total Assets	17270	18614
Less: Liabilities		
Term loan from bank	(1800)	(1650)
Creditors	(350)	(486)
Provision for tax	(110)	(130)
Capital Employed (Equity Approach)	15010	16348
Add: Term loan from bank	1800	1650
Capital Employed (Long term Fund approach)	16810	17998

Average capital Employed (Equity Approach) = $\frac{15010+16348}{2}$ = 15679

Average capital employed (long term fund Approach) = $\frac{16810+17998}{2}$ = 17404

Valuation of Goodwill [Equity Fund Approach]

	₹in lakhs
Future maintainable profits	2210.28
Normal capital employed = $\frac{2210.28}{0.13}$	17002.15
Less: Actual capital employed	15679.00
Goodwill	1323.15

Valuation of Goodwill [Long Term Fund Approach]

	₹in lakhs
Future maintainable profits	2507.28
Normal capital employed = $\frac{2507.28}{0.10}$	25072.80
Less: Actual capital employed	17404.00
Goodwill	7668.80

Comment

As actual capital employed is less than normal capital employed, goodwill exists.

Adverse effect on goodwill = (7668.80 – 1323.15) = ₹6345.65 lakhs.

This means that the leverage ratio of this entity, as computed with reference to normal long-term capital employed, is lower than the industry standard.