

## FINAL EXAMINATION

### GROUP IV

(SYLLABUS 2012)

## SUGGESTED ANSWERS TO QUESTIONS

JUNE 2015

### Paper-20 : FINANCIAL ANALYSIS & BUSINESS VALUATION

Time Allowed : 3 Hours

Full Marks : 100

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

#### SECTION A

*In this section, Answer Question No. 1 (a) and 1(b) which is compulsory and any two parts out of Question No. 2(a), 2(b) and 2(c).*

1. (a) You are analyzing the financial statement of Sky Ltd. using ratio accounting tools. Extracts of the financial information for the year ended on 31.03.2014 are summarized as follows:

#### Abridged Balance Sheet as at 31.03.2014

<i>Liabilities</i>	₹ Lakhs	<i>Assets</i>	₹ Lakhs
Equity share capital	160	Fixed Assets	600
Reserves	260	Inventory	75
12% Bank Loan	200	Receivables	90
Creditors	200	Cash and Bank	55
Total	820	Total	820

#### Abridged Statement of profit for y.e. 31.03.1014

<i>Particulars</i>	₹ Lakhs
Sales (all on credit)	750
Cost of Goods Sold	500
Sundry Expenses	66
Depreciation	40
Interest Expenses	24
Tax Expenses (25%)	30
Profit after tax	90

Daily operational expenses (₹ lakhs) 2; Annual loan repayment installment (₹ lakhs) 20; The management of the company claims that the liquidity position of the company is sound although the current ratio is poor.

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(i) Compute Current ratio, Quick ratio, Interval Defensive ratio, working capital turnover ratio, receivables turnover ratio, creditors turnover ratio and inventory turnover ratio and examine the liquidity position of the company paying due regard to cash flow information and give your comment as to tenability of the views of the management. 7

(ii) Assess the company's ability to service debt by use of interest coverage ratio and debt service coverage ratio. 3

## Answer:

1. (a) (i) Current ratio = CA/CL = 220/200 = 1.1;

Quick ratio = Liquid Assets/Liquid Liabilities = 145/200 = 0.725;

Interval Defensive ratio = Liquid Assets/Daily operational expenses = 145/2 = 72.5 days;

Working Capital turnover ratio = Sales/Working Capital = 750/20 = 37.5;

Receivables turnover ratio = Sales (Credit)/Receivables = 750/90 = 8.33;

Creditors turnover ratio = Cost of Goods Sold (in absence of Purchase value)/Creditors = 500/200 = 2.5;

Inventory turnover ratio = Cost of Goods Sold/ Inventory = 500/75 = 6.67.

Cash from operating activities are positive and high in magnitude (₹ lakhs) 130.

The firm is able to meet daily expenses for 72.5 days, a pretty long time. The firm enjoys long period credit from suppliers and allows short period credit to customers. It blocks investments in inventory for a period far shorter than suppliers' credit period. As a result current assets value has become relatively low in comparison to current liabilities. In spite of poor current and quick ratios the firm is not poor in liquidity. Rather the Interval Defensive ratio, turnover ratios and high operating cash flows clearly show the firm's strength in liquidity. The contention of the management that the liquidity of the firm is sound appears to be tenable.

(ii) Interest Coverage Ratio = EBIT/Interest = 144/24 = 6 times. It is sound.

Debt service coverage ratio = (EAT + Depreciation + Interest)/(Interest + Principal Loan repayment in Installment) = (90+40+24)/(24+20) = 3.5;

The firm generates cash flows 3.5 times the debt to be serviced. It is sound.

The firm is comfortably able to service its debt.

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

Year	2013	2014
Sales (₹)	2,60,000	3,60,000
Cost of Goods Sold (₹)	2,00,000	3,30,000
Gross Profit (₹)	60,000	30,000

It is learnt that cost price for the year 2014 has increased by 10% over the year 2013. Account for changes in gross profit in the year 2014. 6

(ii) During the past financial year, M & N Ltd., had net income of ₹1,00,000 and paid dividends of ₹52,000 to its preferred stockholders. M & N's equity share account showed the following:

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		No. of shares
April 1	Shares issued and outstanding at the beginning of the year	10,000
July 1	Shares issued for cash	4,000
December 1	Shares repurchased for the treasury	3,000
<b>Compute the weighted average number of equity shares outstanding during the year, and compute EPS.</b>		<b>4</b>

**Answer:**

1. (b) (i) Let the cost price per unit in 2013 be ₹ 100.

Then, the cost price per unit in 2014 = ₹ 100 + 10% of ₹ 100 = ₹ 110

Particulars	2013	2014	Changes
(a) Sales (₹)	2,60,000	3,60,000	(+) 1,00,000
(b) Cost of Goods Sold (₹)	2,00,000	3,30,000	(+) 1,30,000
Gross Profit (₹) (a-b)	60,000	30,000	(-) 30,000
(c) Cost Price Per Unit (₹)	100	110	(+) 10
(d) Units Sold (b/c)	2,000	3,000	(+) 1,000
(e) Selling Price per unit (₹) (a/d)	130	120	(-) 10

### Statement showing changes in Gross Profit

Particulars	₹	₹
Changes in Profit due to Changes in sales:		
1. Increase in profit due to increase in quantity (Change in quantity x Base year's unit selling price = (3,000 - 2,000) x ₹ 130)		1,30,000
2. Decrease in profit due to decrease in unit selling price (Change in unit selling price x Base years quantity = ((₹ 120 - ₹130) x 2,000)		(20,000)
3. Decrease in profit due to change in price and quantity (Changes in unit selling price x Change in quantity = (₹120 - ₹130) x (3,000 - 2,000))		(10,000)
Changes in Profit due to changes in cost:		
1. Decrease in profit due to increase in quantity (Change in quantity x Base year's unit cost price = (3,000 - 2,000) x ₹ 100)	(1,00,000)	
2. Decrease in profit due to increase in unit cost price (Change in unit cost price x Base year's quantity = ((₹ 110 - ₹ 100) x 2,000)	(20,000)	
3. Decrease in profit due to change in price and quantity (Change in unit cost price x Change in quantity = (₹ 110 - ₹100) x (3,000 - 2,000)	(10,000)	
		(1,30,000)
Net increase (decrease) in Gross Profit		(30,000)

**Note:** Here, the base year is 2013.

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(ii) Step 1: Compute the weighted average number of shares outstanding :

Initial Shares	10,000 x 12 months outstanding	1,20,000
Issued Shares	4,000 x 9 months outstanding	36,000
Retired treasury shares	-3,000 x 4 months retired	-12,000
Total share month		1,44,000
Average shares	1,44,000/12	12,000

**Step 2 :** Compute basic EPS:

$$\text{Basic EPS} = \frac{\text{net income} - \text{preference dividend}}{\text{weighted average no. of equity shares}} = \left( \frac{1,00,000 - 52,000}{12,000} \right) = ₹ 4$$

2. (a) From the following extracts of the GAAP statements prepare Reformulated Profit and Loss Statement dividing items into operating, financing and other comprehensive income categories for the year ended on 31.03.2014 and Reformulated Statements of Shareholders' Equity showing Owners' transaction and Comprehensive Income separately as at 31.03.2014 in order to facilitate financial analysis: (all amounts are in ₹ lakhs)

	Statement of Shareholder's Equity		
	Equity Shares	Other Comprehensive Income	Retained Earnings
Balances at 31st March, 2013	260	154	288
Repurchase of shares	(24)		
Dividend			(15)
Issue of shares to employees	36		
Net Income			204
Foreign Currency Transaction		25	
Gain on hedging instruments		74	

### Profit and Loss statement for the year ended on 31.03.2014

	Note No.	31.03.2014
Revenue from operations		3,785
Other income		
Cost of material consumed		
Purchase of product for sale		
Changes in inventory		
Employee costs		
Finance cost	1	23
Depreciation		
Other expenses	2	3,490
Tax expenses		68

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<b>Note 1: Finance costs</b>	<b>31.03.2014</b>
Interest expenses	26
Interest income	13
Loss on retirement of debt	10
<b>Total</b>	<b>23</b>

<b>Note 2: Other Expenses</b>	<b>31.03.2014</b>
Cost of Sales	2,287
Selling, general and administrative expenses	1,203
<b>Total</b>	<b>3,490</b>

**Footnote: Tax on investment income/(loss) is at 37.5% effect of which is included in tax expenses. 9+6=15**

**Answer:**

**2. (a)**

(all amounts are in ₹ lakhs)

### Reformulated Profit and Loss Statement for the year ended on 31-03-2014

I	Operating revenue		3785
II	Cost of Sales		2287
III	Gross Margin (I-II)		1498
IV	Selling, general and administrative expenses		1203
V	Operating Income from Sales (before Tax)(III-IV)		295
VI	Tax reported	68	
VII	Tax on Financial Items (37.5%)	5	
VIII	Total Tax		73
IX	Operating Income from Sales (after Tax)(V-VIII)		222
X	Operating Income (after Tax)		222
XI	Finance (Expense)/Income:	(26)	
XII	Interest income	13	
XIII	Net Interest expenses XI + XII	(13)	
XIV	Tax effect	5	
XV	Net Interest expense (after tax) XIII + XIV	(8)	
XVI	Loss on retirement of debt	(10)	
XVII	Finance Expenses/(Income) : XV + XVI		(18)
XVIII	Net Income		204
	Other Comprehensive Income (Net of Tax)		
XIX	Foreign Currency Transaction	25	
XX	Gain on hedging instruments	74	
XXI	Other Comprehensive Income (net of tax)		99
XXII	Other Comprehensive Income to Equity shareholders		303

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### Reformulated Statement of Shareholders' Equity for the year ended on 31-03-2014

	Equity shares	Other Comprehens ive Income	Retained Earnings	Total	Total
Balances at 31st March 2013	260	154	288		702
Owners' transaction:					
Repurchase of share	(24)			-24	
Dividends			(15)	-15	
Issue of shares to employees	36			36	
Owners' transaction					-3
Comprehensive Income					
Net Income			204	204	
Foreign Currency Transaction		25		25	
Gain on hedging instruments		74		74	
Total Comprehensive Income					303
Closing Equity	272	253	477		1002

- (b) Growel Ltd. is contemplating an expansion by taking over the business of Subwel Ltd. at a price of ₹100 crore to be paid in cash. The estimated financial performance for the current year, on the verge of completion, and the projected performance after proposed expansion are presented below:

	Current Year	After Expansion
<b>EBIT ₹ lakh</b>	<b>2,300</b>	<b>3,800</b>
<b>Interest ₹ lakh</b>	<b>1,000</b>	-
<b>No. of Shares (lakh)</b>	<b>100</b>	-
<b>P/E Multiple</b>	<b>12</b>	-

Growel Ltd. considers three alternatives for funding acquisition-A: All Equity funding, B: Equal amounts of Debt and Equity, and C: All Debt option.

Equity shares have to be offered at ₹95 per share. Loans are available at 10% rate of interest.

P/E ratio would vary on the basis of financing of the expansion: 11.6 for all equity, 11 for equal debt and equity and 9 for all debt option.

Advise management of Growel Ltd. as to its expansion and financing thereof if the tax rate is 35%.

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**Answer:**

**2. (b)**

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**Growel Ltd.**  
**Statement showing analysis for decision making**

Business Strategy Financing Alternative	No Expansion	Expansion		
		A	B	C
Funds Required ₹ lakhs		10000	10000	10000
Fresh Equity ₹ lakhs		10000	5000	0
New Debt ₹ lakhs		0	5000	10000
EBIT ₹ lakhs	2300	3800	3800	3800
Existing Interest ₹ lakhs	1000	1000	1000	1000
Additional Interest ₹ lakhs		0	500	1000
Total Interest ₹ lakhs	1000	1000	1500	2000
EBT ₹ lakhs	1300	2800	2300	1800
Tax rate	0.35	0.35	0.35	0.35
Tax ₹ lakhs	455	980	805	630
EAT ₹ lakhs	845	1820	1495	1170
Existing Shares (lakhs)	100	100	100	100
Equity Issue Price ₹	95	95	95	95
Fresh Issue No. of Shares (lakh)	-	105.2632	52.63158	0
Total No. of shares (lakh)	100	205.2632	152.6316	100
EPS ₹	8.45	8.867	9.795	11.7
P/E Multiple	12	11.6	11	9
Expected Price ₹	101.4	102.8572	107.7450	105.3

Recommended:

1. Expansion as it increases both EPS and expected share price.
2. Equal Equity and Debt Financing (Alternative B) since it maximizes expected price per share although EPS is maximum at All Debt Financing (Alternative C.)

(c) (i) Using Altman's (1968) model compute the Z value of business 'A Ltd.', from the provided data (Balance Sheet extract) and comment whether it is on the verge of financial ruin.

**A Ltd. Balance Sheet (extract)**

(All Figures in ₹)

<i>Liabilities</i>		<i>Assets</i>	
Share capital of ₹10 each	1,00,000	Fixed Assets	2,10,000
Reserves & Surplus	30,000	Inventories	90,000
10% Debentures	1,50,000	Book Debts	35,000
Sundry Creditors	40,000	Loans and advances	10,000
Outstanding Expenses	30,000	Cash and bank	5,000
	<b>3,50,000</b>		<b>3,50,000</b>

Additional information:

- (i) Market value per share ₹15
  - (ii) Operating profit (25% on sales) ₹2,00,000 13
- (ii) What do you mean by 'Corporate Distress Prediction'? 2

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**Answer:**

**2. (c)**

As per Altman's model (1968) of Corporate Distress Prediction

$$Z = 1.2x_1 + 1.4x_2 + 3.3x_3 + 0.6x_4 + 1.0x_5$$

Here the five variables are as follows:

$$X_1 \text{ Working capital to total assets} = 70000/350000 = 0.20$$

$$X_2 \text{ Retained earnings to total assets} = 30000/350000 = 0.09$$

$$X_3 \text{ EBIT to total assets} = 200000/350000 = 0.57$$

$$X_4 \text{ Market value of shares to book value of total debts} = 150000/220000 = 0.68$$

$$X_5 \text{ Sales to total assets} = 800000/350000 = 2.29$$

**Notes:**

1. Working capital = Current assets - current liabilities = 140000 - 70000 = 70,000
2. Total assets = 210000+90000+35000+10000+5000 = 350000
3. Retained earnings. = Reserves & surplus = 30000
4. EBIT = operating profit = 200000
5. Market value of shares = 10000 x 15 = 150000
6. Book value of total debts = Long term liabilities + current liabilities = 150000 + 70000 = 220000.
7. Sales = 200000 x 4 = 800000, since operating profit is 25% on sales.

Conclusion:

$$Z = 1.2 \times 0.20 + 1.4 \times 0.09 + 3.3 \times 0.57 + 0.6 \times 0.68 + 1.0 \times 2.29 = 4.945, \text{ say } 4.95$$

As the calculated value of z score is much higher than 2.99, it can be strongly predicted that the company is a non bankrupt company (i.e. non-failed company) and is not on the verge of financial ruin.

**(ii) Answer:**

Distress prediction is an essential issue in the field of finance.

It is a very important tool used for the purpose of prediction of future probable financial condition of a corporate entity so that any financial crisis that may crop up in the near future can be predicted in advance. Using various models of Distress Prediction, the management of a company comes to know about its future probable financial condition before hand and accordingly, it may adopt appropriate remedial measures to avoid the financial crisis as predicted through the various models of Distress Prediction. Distress Prediction is considered a very significant tool for sustainment of a company in the long-run. Traditional ratio analysis, Z score and revised Z score, Emerging Market Scoring are some of the models used for corporate distress prediction.



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## SECTION B

*In this section, Answer Question No. 3 (a) and 3(b) which is compulsory and any two parts out of Question No. 4(a), 4(b) and 4(c).*

3. (a) (i) From the following extracts of financial data pertaining to HS Ltd., an IT company, you are required to calculate the value of the brand of the company:

Year ended on 31st march	2014	2013	2012
EBIT ₹ lakhs	750	525	280
Non-branded income ₹ lakhs	60	45	15
Inflation (%)	8	15	11
Remuneration of capital	6% of Average Capital Employed		
Average capital employed ₹ lakhs	1,450		
Corporate tax rate	30%		
Capitalization factor	15%		

- (ii) The following information is available of a concern. Calculate Economic Value Added (EVA).

12% Debt ₹2,000 crores  
 Equity capital ₹ 500 crores  
 Reserves and Surplus ₹ 7,500 crores  
 Risk-free rate 9%  
 Beta factor 1.05  
 Market rate of return 19%  
 Equity (market) risk premium 10%  
 Operating profit after tax ₹ 2,100 crores  
 Tax rate = 30%

**Answer:**

3. (a) (i)

HS Ltd

Calculation of Brand Value as at 31-3-2014 (₹ in lakhs)

Year ended on 31st March	2014	2013	2012
EBIT ₹ lakhs	750	525	280
Less Non-branded income ₹ lakhs	60	45	15
Adjusted profit ₹ lakhs	690	480	265
Inflation (%)	8	15	11
Inflation compound factor	1	1.08	1.242
PV of profit	690	518.4	329.13
Weight	3	2	1
Weighted Profits	2070	1036.8	329.13
Weighted Average profit	572.655 = 573		

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Remuneration of capital	6% of Average Capital Employed
Average Capital employed ₹ lakhs	1450
Remuneration of capital	87
Brand related profit	486
Corporate tax rate	30%
Corporate Tax	146
Brand Earning	340
Capitalization factor	15%
Brand Value ₹ lakhs	2,266.67

**Answer:**

### 3. (a) (ii)

Particulars	
Cost of Debt ( $K_d$ ) = Interest $\times$ (1-tax rate)	$12\% \times (1-0.3) = 8.40\%$
Cost of Equity ( $K_e$ ) = Risk free rate + (Beta $\times$ Market Risk Premium)	$9\% + 1.05(19\% - 9\%) = 19.5\%$
Debt equity ratio (as given in the question)	20% & 80%
WACC = [( $K_d$ ) $\times$ Debt% + ( $K_e$ ) $\times$ Equity %]	$(8.40 \times 20\%) + (19.5 \times 80\%)$ $= 17.28\%$
Operating Profit before tax	₹2100 crores

$$\begin{aligned}
 \text{EVA} &= \text{NOPAT} - \text{Cost of Capital Employed} \\
 &= [(\text{₹ } 2100 \text{ cr.}) - (17.28\%) \times \text{₹ } 10,000 \text{ cr.}] \\
 &= \text{₹ } 2100 \text{ cr.} - \text{₹ } 1728 \text{ cr.} \\
 &= \text{₹ } 372 \text{ cr.}
 \end{aligned}$$

**(b) (i) National Textile Corporation belongs to a risk-class for which the appropriate PE ratio is 15. It currently has 75,000 outstanding shares selling at ₹ 150 each. The corporation is contemplating declaration of dividend @ ₹ 12 per share at the end of the current fiscal year, which has just started. Given the assumption of Modigliani Miller approach, answer the following questions:**

**(i) What will be the price of the share at the end of the year, if:**

- (a) dividend is not declared?**
- (b) dividend is declared?**

**(ii) Assuming that the corporation pays dividend, has net income of ₹ 7,50,000 and makes new investments of ₹ 15,00,000 during the period, how many new shares must be issued?** 3+3=6

**(ii) What is Valuation Multiple? Give examples of any four multiples.** 4

**Answer:**

### 3. (b) (i)

Given

$$\begin{aligned}
 \text{P/E} &= 15 \\
 \text{N} &= 75,000 \text{ shares}
 \end{aligned}$$

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P <sub>0</sub>	= 150
DI	= ₹ 12
E	= ₹ 7,50,000
I(Investment)	= ₹ 15,00,000
K <sub>e</sub>	= 1/(P/E Ratio)

**(i) (a) If dividend is not declared:**

$$P_0 = (D_1 + P_1)/(1 + K_e)$$

$$D_1 = 0, \therefore P_0 = P_1/(1+K_e); \text{ or } P_1 = P_0 (1+K_e)$$

$$\therefore P_1 = 150 (1 + \frac{1}{15}); \text{ or } P_1 = ₹ 160$$

**(b) If dividend is declared:**

$$\text{Then, } P_0 = (D_1 + P_1)/(1 + K_e)$$

$$\text{or } 150 = (12 + P_1)/(1 + \frac{1}{15})$$

$$\text{or } 12 + P_1 = 150 \times \frac{16}{15}; \text{ or } P_1 = 160 - 12 = ₹ 148$$

**(ii) If the Corporation pays Dividend:**

$$P_1 = ₹ 148; \text{ No. of shares to be issued: } \Delta n = (I - E + nD_1)/P_1$$

$$\text{No. of New shares, } \Delta n = \frac{(15,00,000 - 7,50,000 + 75,000 \times 12)}{148}$$

$$\text{or, } \Delta n = \frac{(7,50,000 + 9,00,000)}{148}; \text{ or } \Delta n = \frac{16,50,000}{148} = 11,148.65 \text{ (11,149) shares}$$

**Answer:**

**3. (b) (ii)**

**Valuation Multiples**

A valuation multiple is the ratio of firm value or equity value to some aspect of the firm's economic activity, such as cash flow, sales, or EBITDA. The table below lists the most common multiples used to value firms, together with the terminology that is used to describe the multiple.

**Multiples Used in Finance**

Quantity	X	Multiple	Terminology = Value
Cash Flow	X	Firm Value / Cash Flow of Firm	"Cash flow multiple" = Value of Firm
EBITDA	X	Firm Value / EBITDA of Firm	"EBITDA multiple" = Value of firm
Sales	X	Firm Value / Sales Value of Firm	"Sales multiple" = Value of Firm
Customers	X	Firm Value / Customers	"Customers multiple" = Value of Firm
Earnings	X	Price per Share / Earnings	"Price earnings ratio" = Share Price

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The technique for applying a valuation of multiple is identical to that of applying a price-per-square-foot multiple to value real estate, or a price per Kilogram to a purchase of fish. If you are studying a firm with cash flows of ₹ 5 Crores and you believe it should be valued at a cash flow multiple of 10, you will determine that the firm is worth  $(5 \times 10) = ₹ 50$  Crores.

The multiples can also be arrived at by using industry benchmarks developed using average of multiples of comparable companies in the industry.

#### 4. (a) The following is the Balance Sheet of N. Ltd. as on 31<sup>st</sup> March, 2015:

<i>Liabilities</i>	₹	<i>Assets</i>	₹
4,00,000 Equity shares of ₹ 10 each fully paid	40,00,000	Goodwill	4,00,000
13.5% Redeemable preference Shares of ₹ 100 each fully paid	20,00,000	Building	24,00,000
General Reserve	16,00,000	Machinery	22,00,000
Profit and Loss Account	3,20,000	Furniture	10,00,000
Bank Loan (Secured against Fixed assets)	12,00,000	Vehicles	18,00,000
Bills payable	6,00,000	Investments	16,00,000
Creditors	31,00,000	Stock	11,00,000
		Debtors	18,00,000
		Bank Balance	3,20,000
		Preliminary Expenses	2,00,000
	<u>1,28,20,000</u>		<u>1,28,20,000</u>

#### Further information:

- (i) Return on capital employed is 20% in similar businesses.
- (ii) Fixed assets are worth 30% more than book value. Stock is overvalued by ₹ 1,00,000. Debtors are to be reduced by ₹ 20,000. Trade investments, which constitute 10% of the total investments are to be valued at 10% below cost.
- (iii) Trade investments were purchased on 01-04-2014, 50% of non-trade investments were purchased on 01-04-2013 and the rest on 01-04-2012. Non-trade investments yielded 15% return on cost.
- (iv) In 2012-2013 new machinery costing ₹ 2,00,000 was purchased but wrongly charged to revenue. This amount should be adjusted taking depreciation at 10% per year on written down value method.
- (v) In 2013-2014 furniture with a book value of ₹ 1,00,000 was sold for ₹ 60,000, which was a one time disposal.
- (vi) For calculating goodwill two years purchase of super profits based on simple average profits of last four years are to be considered. Profits of last four years are as under:  
2011-2012 ₹16,00,000, 2012-2013 ₹18,00,000, 2013-2014 ₹ 21,00,000, 2014-2015 ₹ 22,00,000.
- (vii) Additional depreciation provision at the rate of 10% on the increase in book value of Plant and Machinery alone may be considered for arriving at average profit.
- (viii) Preference dividend has been paid till date.

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Find out the intrinsic value of the equity share given that Income tax and dividend tax are not to be considered. 15

Answer:

4. (a)

**Option I**

Since the date of purchase of new machinery and put to use is not mentioned in the question. Half year depreciation for 2012-13 is to be considered.

Solution considering the above is given below:

**Calculation of Intrinsic value of equity shares of N Ltd.**

**1. Calculation of Goodwill**

**(i) Capital employed**

	₹	₹
Fixed Assets		
Building	24,00,000	
Machinery (22,00,000 + 1,53,900)	23,53,900	
Furniture	10,00,000	
Vehicles	18,00,000	
	75,53,900	
Add: 30% increase	22,66,170	
	98,20,070	
Trade Investment (₹16,00,000 × 10% × 90%)	1,44,000	
Debtors (₹18,00,000 - ₹20,000)	17,80,000	
Stock (₹11,00,000 - ₹1,00,000)	10,00,000	
Bank Balance	3,20,00	1,30,64,070
Less: Outside liabilities		
Bank Loan	12,00,000	
Bills payable	6,00,000	
Creditors	31,00,000	49,00,000
Capital Employed		81,64,070

**(ii) Future maintainable profit**

Calculation of average profit	2011-12 (₹)	2012-13 (₹)	2013-14 (₹)	2014-15 (₹)
Profit Given	16,00,000	18,00,000	21,00,000	22,00,000
Add: Capital expenditure of machinery charged to revenue	-	2,00,000	-	-
Loss on sale of furniture	-	-	40,000	-
	16,00,000	20,00,000	21,40,000	22,00,000
Less: Depreciation on machinery	-	10,000	19,000	17,100
Income from non-trade investments	-	1,08,000	2,16,000	2,16,000
Reduction in value of stock				1,00,000
Bad Debts adjusted profits	-	-	-	20,000
Adjusted Profit	16,00,000	18,82,000	19,05,000	18,46,900

## Suggested Answer\_Syl12\_June 2015\_Paper\_20

	₹
Total adjusted profit for four years (2011-2012 to 2014-2015)	72,33,900
Average profit (₹72,33,900/4)	18,08,475
Less: Depreciation at 10% on additional value of machinery (22,00,000 + 1,53,900) × 30/100 i.e. ₹7,06,170	70,617
<b>Adjusted average Profit</b>	<b>17,37,858</b>

### (iii) Normal Profit

20% on capital employed i.e. 20% on ₹ 81,64,070                      ₹ 16,32,814

### (iv) Super profit

Expected profit - normal profit

₹ 17,37,858 - ₹ 16,32,814 = ₹ 1,05,044

### (v) Goodwill

2 year's purchase of super profit

₹ 1,05,044 × 2 = ₹ 2,10,088

## 2. Net assets available to equity shareholders

	₹	₹
Goodwill as calculated in 1 (v)		2,10,088
Sundry fixed assets		98,20,070
Trade and Non-trade investments		15,84,000
Debtors		17,80,000
Stock		10,00,000
Bank balance		3,20,000
		1,47,14,158
Less: Outside liabilities		
Bank loan	12,00,000	
Bills payable	6,00,000	
Creditors	31,00,000	49,00,000
Preference share capital		20,00,000
<b>Net assets for equity shareholders</b>		<b>78,14,158</b>

## 3. Valuation of equity shares

Value of equity share =  $\frac{\text{Net assets available to equity shareholders}}{\text{Number of equity shares}}$

$$= \frac{₹78,14,158}{4,00,000}$$

$$= ₹ 19.53$$

# Suggested Answer\_Syl12\_June 2015\_Paper\_20

## Option II

Since the date of purchase of new machinery and put to use is not mentioned in the question. Full year depreciation for 2012-13 is to be considered.

Solution considering the above is given below:

### Calculation of Intrinsic value of equity shares of N Ltd.

#### 1. Calculation of Goodwill

##### (i) Capital employed

Fixed Assets	₹	₹	
Building	24,00,000		
Machinery (₹ 22500,000 + ₹ 1,45,800)	23,45,800.		
Furniture	10,00,000		
Vehicles	18,00,000		
	75,45,800		
Add: 30% increase	22,63,740		
	98,09,540		
Trade investment (₹16,00,000 x 10% x 90%)	1,44,000		
Debtors (₹ 18,00,000 - ₹ 20,000)	17,80,000		
Stock (₹ 11,00,000 - ₹ 1,00,000)	10,00,000		
Bank Balance	3,20,000	1,30,53,540	
Less: Outside liabilities			
Bank Loan	12,00,000		
Bills payable	6,00,000		
Creditors	31,00,000	49,00,000	
Capital Employed		81,53,540	

##### (ii) Future maintainable profit

Calculation of average profit	2011-12 ₹	2012-13 ₹	2013-14 ₹	2014-15 ₹
Profit given	16,00,000	18,00,000	21,00,000	22,00,000
Add: Capital expenditure of machinery charged to revenue		2,00,000		
Loss on sale of furniture			40,000	
	16,00,000	20,00,000	21,40,000	22,00,000
Less: Depreciation on machinery		20,000	18,000	16,200
Income from non-trade investments		1,08,000	2,16,000	2,16,000
Reduction in value of stock				1,00,000
Bad debts				20,000
Adjusted profit	16,00,000	18,72,000	19,06,000	18,47,800

	₹
Total adjusted profit for four years (2011 -2012 to 2014-2015)	72,25,800
Average profit (₹ 72,25,800/4)	18,06,450
Less: Depreciation at 10% on additional value of machinery (22,00,000 + 1,45,800) x 30/100 i.e. ₹ 7,03,740	70,374
Adjusted average profit	17,36,076

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## (iii) Normal Profit

20% on capital employed i.e. 20% on ₹ 81,53,540

₹ 16,30,708

## (iv) Super profit

Expected profit - normal profit

₹ 17,36,076 - ₹ 16,30,708 = ₹ 1,05,368

## (v) Goodwill

2 year's purchase of super profit

₹ 1,05,368 x 2 = ₹ 2,10,736

## 2. Net assets available to equity shareholders

	₹	₹
Goodwill as calculated in 1 (v) above		2,10,736
Sundry fixed assets		98,09,540
Trade and Non-trade investments		15,84,000
Debtors		17,80,000
Stock		10,00,000
Bank balance		3,20,000
		<hr/>
		1,47,04,276
Less: Outside liabilities		
Bank Loan	12,00,000	
Bills payable	6,00,000	
Creditors	31,00,000	49,00,000
Preference share capital		20,00,000
Net assets for equity shareholders		<hr/>
		78,04,276

## 3. Valuation of equity shares

Value of equity share =  $\frac{\text{Net assets available to equity shareholders}}{\text{Number of equity shares}}$

$$= \frac{\text{₹ } 78,04,276}{4,00,000}$$

$$= \text{₹ } 19.51$$



## Suggested Answer\_Syl12\_June 2015\_Paper\_20

(b) (i) Futuristic Limited has the following portfolio of investments as on March 31, 2015:

(₹ in lakhs)

Particulars	Purchase Price	Market Price
<b>Non -Current Investments</b>	₹	₹
10 Years 10% Bonds (Current Market Yield is 9%)	1,160.00	1,064.00
Shares of X Limited (Subsidiary Company)	10.00	80.00
Shares of Y Limited (Subsidiary Company)	100.00	90.00
Shares of Z Limited (Subsidiary Company)	10.00	8.00
Shares of A Limited	120.00	110.00
Shares of B Limited	350.00	500.00
<b>Current Investments</b>		
Shares of XYZ Limited	250.00	260.00
Shares of ABC Limited	890.00	820.00
Units of Money Market Mutual Fund	15.00	12.00
Units of Growth Fund	22.00	25.00

You are required to compute the value of investment for balance sheet purpose assuming that the fall in value of investment Y Limited is temporary and that of Z Limited is permanent as per the relevant accounting standard. 5

(ii) There are a number of factors both macro economic and micro economic which have an impact on business. Valuation of a business involves making forecasts for the future. Comment on the sources of uncertainties in business valuation in the light of the above. 5

(iii) Assume that there are two firms—U (Unlevered) firm and L (Levered) firm. L has 10% Debentures of ₹ 5 crores, EBIT of both the firms are same, that is, ₹ 1 crores. The cost of equity of L and U are 16% and 12.50% respectively. Show, as per the MM Hypothesis, that there exists an arbitrage process which will make the value of both the firms same. 5

Answer:

4. (b) (i)

	Valuation for Balance Sheet	
<b>Non-Current Investments</b>		
10 Years 10% Bonds (Current Market Yield is 9%) Face Value = ₹ 1,000	₹ 1,160.00	
Less: Amortization of Premium over the life of the Bond (Note 1)	₹ 16.00	₹ 1,144.00
Shares of X Limited (Subsidiary Company)		₹ 10.00
Shares of Y Limited (Subsidiary Company)		₹ 100.00
Shares of Z Limited (Subsidiary Company)	₹ 10.00	
Less : Provision for permanent diminution	₹ 2.00	₹ 8.00
Shares of A Limited		₹ 120.00
Shares of B Limited		₹ 350.00
<b>Current Investments: (Cost or Market Price whichever is lower)</b>		
Shares XYZ Limited		₹ 250.00
Shares ABC Limited		₹ 820.00
Unit of Money Market Mutual Fund		₹ 12.00

# Suggested Answer\_Syl12\_June 2015\_Paper\_20

Units of Growth Fund		₹ 22.00
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As per AS 13, the Current Investment are valued as thus:

- The carrying amount for current investments is the lower cost and fair value. In respect of investments for which an active market exists, market value generally provides the best evidence of fair value. The valuation of current investments at lower of cost and fair value provides a prudent method of determining the carrying amount to be stated in the balance sheet.

As per AS 13, the Non-Current (Long - Term) Investments are valued as thus:

- Long-term investments are usually carried at cost. However, when there is a decline, other than temporary, in the value of a long term investment, the carrying amount is reduced to recognise the decline. 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. The type and extent of the investor's stake in the investee are also taken into account. Restrictions on distributions by the investee or on disposal by the investor may affect the value attributed to the investment.

Note 1) Premium paid on acquisition of bond ₹ (1,160-1000) = ₹ 160. Amortization per year = ₹ 16 (For 10 years).

**Answer:**

**4. (b) (ii)**

### **Sources of Uncertainties:**

Uncertainty is part and parcel of the valuation process both at the point of time the valuation is made and also on basis of how the business evolves over time.

The valuation involves a process where the valuer has to make forecasts about the future both in terms of general economic conditions as well as how the firm will perform individually.

Uncertainties caused by these various conditions and factors can be broadly categorized into the following three groups based on the reasons/sources of these uncertainties

- **Estimation Uncertainty:** Even if our information sources are impeccable, we have to convert raw information into inputs and use these inputs in models. Any mistakes or mis-assessments that we make at either stage of this process will cause estimation error.
- **Firm-specific Uncertainty:** The path that we envision for a firm can prove to be hopelessly wrong. The firm may do much better or much worse than we expected it to perform, and the resulting earnings and cash flows will be very different from our estimates.
- **Macroeconomic Uncertainty:** Even if a firm evolves exactly the way we expected it to, the macroeconomic environment can change in unpredictable ways. Interest rates can go up or down and the economy can do much better or worse than expected. These macroeconomic changes will affect value.

## Suggested Answer\_Syl12\_June 2015\_Paper\_20

Answer:

4. (b) (iii)

Calculation of Market Value of Firms	Firm-L	Firm-U (₹ in lakhs)
EBIT	₹ 100.00	₹ 100.00
Less: Interest	₹ 50.00	
<b>Earnings Available to Equity</b>	₹ 50.00	₹ 100.00
Equity Capitalization Rate (Cost of Equity)	16%	12.50%
Market Value of Equity	₹ 312.50	₹ 800
Value of Debt	₹ 500.00	
<b>Value of Firm</b>	₹ 812.50	₹ 800.00
<b>Effect of Arbitrage:</b>		
Buying Equity (10% of the Firm)	₹ 31.25	₹ 80.00
Buying Debt or Lending Money at 10%	₹ 48.75	
	₹ 80.00	₹ 80.00
<b>Income:</b>		
From Dividend	₹ 5.00	₹ 10.00
From Interest	₹ 4.88	
<b>Total Income</b>	₹ 9.88	₹ 10.00

The above calculation show that Firm-L is overvalued as compared to Firm-U and hence, if an investor short-sells 10% shares of Firm-L, borrows ₹ 48.75 lakhs at 10% interest and invest ₹ 80 lakhs so obtained will result into a gain of ₹ 0.12 lakhs with ZERO investment which means that there is an arbitrage opportunity. Exploiting this opportunity means sell the shares of Firm-L and buy the shares of Firm-U will result into arbitrage gains to an investor and this process will make the market price of both the firms equal.

(c) The bidding company B Ltd. is contemplating a merger with the target company, T Ltd. so as to form the merged B Ltd. under two distinct situations X and Y. You are provided with the following information about the proposed merger:

Company	B Ltd.	T Ltd.
EAT (₹ lakh)	40	12.5
No. of Equity Shares (in lakh)	5	2
P/E ratio	12.5	20

**Situation X:**

There is no synergy in earnings, but P/E of merged B Ltd. will stand at 15. Merger is based on market value of shares.

**Situation Y:**

Post merger P/E stands at that of stand-alone B Ltd., but earnings of the merged entity rises by 20% over the aggregate earnings of B Ltd. and T Ltd. Swap ratio is 1.3 for every share of T Ltd.

Find for both the situations X and Y:

(i) Post merger EPS.

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## Suggested Answer\_Syl12\_June 2015\_Paper\_20

- (ii) Post merger market value per share. 2
- (iii) Synergy due to merger. 2
- (iv) Gain/loss for merger to shareholders of B Ltd. and T Ltd. (a) in value of share holdings and (b) in earnings available to them. 4+4=8

**Answer:**

**4. (c)**

	X			Y		
	B	T	Merged	B	T	Merged
EAT (₹ lakh)	40	12.5	52.5	40	12.5	63
No. of Equity Shares (n) (Lakhs)	5	2		5	2	
P/E (Given)	12.5	20	15	12.5	20	12.5
EPS (EAT/n)	8	6.25		8	6.25	
P = Market value per share (P/E*EPS)	100	125		100	125	
Market Capitalization (MC) (n*P) (₹ Lakh)	500	250	787.5@	500	250	787.5@
No. of shares to be issued to T (Lakh)#			2.5			2.6
No. of shares to Merged B Ltd. (n) [(5+2.5) & (5+2.6)] (Lakh)			7.5			7.6
EPS for Merged B Ltd. (EAT/N)\$			7			8.29
Synergy (Merged Value - Aggregate MC) [787.5-(500+250)]			37.5			37.50
Share of Pre-merger B in Merged B			0.667			0.6579
Share of Pre-merger T in Merged B			0.333			0.3421
Value to B [share * merged MC]			525			518.09
Gain in Value to B [Value to B - MC of stand-alone B Ltd]			25			18.09
Value to T [share * merged MC]			262.5			269.41
Gain in Value to T [Value to T - MC of stand-alone T Ltd]			12.5			19.41
Share of Earnings from Merged B**	35	17.5	52.5	41.45	21.55	
Gain /(loss) [Earnings from Merged -Stand alone Earnings]	(5)	5	0	1.45	9.05	10.50
Market value per Share of Merged B [Merged MC/Merged Number of Shares] (787.5/7.5 & 787.5/7.6)			105			103.62

@ MC = EAT × P/E = 52.5 × 15 = 787.50 & 63 × 12.5 = 787.50

# (125/100) × 2 = 2.5 for X and 1.3 × 2 = 2.6 for Y

\$ (52.5/7.5) = 7 for X and (63/7.6) = 8.29 for Y

\*\* (0.667 × 52.5) = 35 (rounded off) for B and (0.333 × 52.5) = 17.5 (rounded off) for T under X;

(0.6579 × 63) = 41.45 (rounded off) for B and (0.3421 × 63) = 21.55 (rounded off) for T under Y.

## **Suggested Answer\_Syl12\_June 2015\_Paper\_20**

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