FINAL EXAMINATION

GROUP IV

(SYLLABUS 2008)

SUGGESTED ANSWERS TO QUESTIONS

JUNE 2014

Paper- 18 : BUSINESS VALUATION MANAGEMENT

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

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

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

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

(i) While valuing a company, one has to use financial information from its financial statements after making a number of adjustments for items like Extraordinary write-off; deferred tax assets and liabilities; etc.
(ii) When a company is publicly traded, the value of equity equals the market capitalization of the company.
(iii) Mutually exclusive investments serve the same purpose and compete with each other.
(iv) In condition of rising prices for change from LIFO to FIFO method, earnings should rise.
(v) A lower discount would be applied to the cash flows of the government bonds, as compared to shares of a company.

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

(i) A ratio between the market value of a company to the replacement value of its assets is known as _______________ Ratio. (Market Value to Book Value/Tobin's Q/ Price to Book Value)
(ii) Net Operating Profit After Taxes — (Capital Employed x the Cost of Capital) is called _____________ . (Book Value Added/Market Value Added/ Economic Value Added)
(iii) Production capacity is a _____________ variable for valuation. (operational / financial)
(iv) Replacement cost is current cost of replacing _____________ assets of a company. (current/all)
(v) The required rate of return may also be called _____________ of capital. (cost / opportunity cost)
(vi) For firms with negative FCFE and positive FCFF the present value of _____________ is the suitable model of valuation of equity. (FCFE/FCFF).
(vii) Super profit is the excess of future maintainable profits over _____________ expected profits. (normally/abnormally)
(viii) _____________ measures the variation of distribution for the expected returns. (Standard deviation/ Regression)
(ix) Dividend yield ratio is equal to dividend per share divided by _____________ and

the quotient multiplied by 100. (EPS/market price per equity share)

(x) Current liabilities are payable ___________ (within/beyond) a period of 1 year.

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

(i) In the context of an acquisition of a firm, which one of the following concepts of value is least relevant?
(A) Market Value
(B) Opportunity Cost
(C) Synergy Value
(D) Value Gap

(ii) Assume that in a Stock Market, the CAPM is working. A company has presently beta of 0.84 and its going to finance its new project through debt. This would increase its Debt/Equity Ratio to 1.56 from the existing 1.26. Due to increased Debt/Equity Ratio, the Company's beta would
(A) Increase
(B) Decrease
(C) Remain unchanged
(D) Nothing can be concluded

(iii) The dividend per share is ₹2 and its market value is ₹25 the dividend yield ratio will be
(A) 5%
(B) 7%
(C) 12.25%
(D) 8%

(iv) If Cash Flows amount to ₹60 lakhs, Depreciation ₹30 lakhs and capital expenditure ₹40 lakhs, FCFF in ₹ lakhs will be
(A) 90
(B) 50
(C) 30
(D) 20

(v) Shareholders of target companies are typically paid in
(A) Government bonds held by the target company
(B) Government bonds held by the acquiring company
(C) Cash and / or shares of the acquiring company
(D) None of the above

Answer:

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

(b) (i) Tobin's Q
(ii) Economic Value Added
(iii) Operational
(iv) All
(v) Opportunity Cost
(vi) FCFF

(vii) Normally
(viii) Standard Deviation
(ix) Market price per equity share
(x) Within

(c) (i) (B) Opportunity Cost
(ii) (C) Remain unchanged (Because as per CAPM, the company specific risk has no impact on the systematic risk).
(iii) (D) 8%
(iv) (D) 20
(v) (C) Cash and/or shares of the acquiring company.

2. ABC Limited wants to takeover XYZ Limited in all equity deal. For that purpose, Mr. K. S. Goel, CFO of ABC Limited has collected the following financial information.

Summarized Balance Sheet as on March 31, 2014

(₹in crores)

Particulars	ABC LIMITED	XYZ LIMITED
EQUITY AND LIABILITIES		
Share Capital (Face Value ₹10)	**100.00**	**80.00**
Reserves and Surplus	**26.00**	**5.00**
Non-Current Liabilities	**50.00**	**30.00**
Current Liabilities	**64.00**	**35.00**
TOTAL LIABILITIES	**240.00**	**150.00**
ASSETS		
Non-Current Assets	**145.00**	**102.00**
Current Assets	**95.00**	**48.00**
TOTAL ASSETS	**240.00**	**150.00**

Summarized Statement of Profit and Loss for the year ending on March 31, 2014

(₹in crores)

Particulars	ABC LIMITED	XYZ LIMITED
Sales	**345.00**	**170.00**
Less: Cost of Goods Sold	**276.00**	**136.00**
Gross Profit	**69.00**	**34.00**
Depreciation	**19.69**	**10.10**
Profit Before Interest and Tax	**49.31**	**23.90**
Interest	**6.97**	**4.61**
Profit Before Tax	**42.34**	**19.29**
Tax @ 35%	**14.82**	**6.75**
Profit After Tax	**27.52**	**12.54**
Additional Information:		
• **Estimated Cost of Equity**	**15%**	**18%**
• **Dividend Rate for the FY 2014**	**13.75%**	**6.40%**
• **Market Price**	**₹52.25**	**₹24.00**
• **Both the companies are following constant Dividend - Payout Policy.**		

Mr. K. S. Goel wants to explore the possibility that if the exchange ratio is determined on the basis of the companies respective intrinsic values, then what would be the scenario.

Assume that you are working in ABC Limited and Mr. Goel requests you to determine the following:

(i) On the basis of the intrinsic values of the shares of both the companies, determine the exchange ratio. **7**

(ii) Determine the post-merger EPS of ABC Limited assuming the exchange ratio

calculated above and there are no synergy gains. **5**

(iii) Assuming that ABC Limited P/E Ratio will continue to be the same post-merger and the exchange ratio calculated in (i) above, determine the expected post-merger market price of ABC Limited. **3**

Answer:

2. (i)

Particulars	ABC LIMITED	XYZ LIMITED
Profit after Tax	₹27.52	₹12.54
Share Capital	₹100.00	₹80.00
Reserves and Surplus	₹26.00	₹5.00
Net Worth	₹126.00	₹85.00
No. of Shares (Face value - ₹10)	10.00	8.00
EPS	₹2.75	₹1.57
Return on Equity (ROE)	21.85%	14.75%
Dividend Rate for the F.Y.2014	13.75%	6.40%
DPS (Face Value x Dividend Rate)	₹1.38	₹0.64
Dividend Payout Ratio (DPS/EPS)	50%	41%
Retention Rate (1- DPS)	50%	59%
Growth Rate (ROE x Retention Rate)	10.93%	8.70%
Cost of Equity	15.00%	18.00%
Intrinsic Value of the Share	₹37.59	₹7.53

According to the intrinsic values of both the companies, the exchange ratio will be ₹7.53/₹37.59 = 0.20; it means that for every 5 shares held in XYZ LIMITED, one share of ABC LIMITED will be issued.

Note: Intrinsic Value is calculated using the formula $[D_0 (1+g)] / [r-g]$, g = growth rate
r = required rate of return
D_0 = dividend for the year

(ii) Post- Merger Scenario

Summarized Statement of Profit and Loss - Post Merger

Particulars	ABC LIMITED
Sales	515.00
Less: Cost of Goods Sold	412.00
Gross Profit	103.00
Depreciation	29.79
Profit Before Interest and Tax	73.21
Interest	11.58
Profit Before Tax	61.63
fax @ 35%	21.57
Profit After Tax	40.06

• Existing no. of shares of ABC LIMITED	10.00
• Additional shares issued to the shareholders of XYZ LIMITED at an exchange ratio of 0.2.	1.60
• Total no of shares after merger	11.60
EPS - POST MERGER	3.45

(iii)

EPS of ABC LIMITED – Pre – Merger	₹2.75
Market Price	₹52.25
P/E Ratio	19
Post Merger – EPS of ABC LIMITED	₹3.45
Assuming same P/E Ratio of ABC LIMITED, the ABC Share Market Price should be	₹65.55

3. (a) ₹100 shares of SBC Ltd. were being quoted at ₹180. The company launched an expansion programme worth ₹25 crores and decided to make a public issue. Part of the issue was to be rights. Members were offered one right share for every six ordinary shares held by them, at a premium of ₹50 per share.
Determine the minimum price that can be expected of the shares after the issue. 4

(b) Vipul Ltd. has a surplus cash of ₹90 lakhs and wants to distribute 30% of it to the shareholders. The company decides to buyback shares. The finance manager of the company estimates that its share price after repurchase is likely to be 10% above the buyback price, if the buyback route is taken. The number of shares outstanding at present is 10 lakhs and the Current EPS is ₹3.
Find—
(i) The price at which the shares can be repurchased, if the market capitalization of the company should be ₹200 lakhs after buyback. 5
(ii) The number of shares that can be repurchased. 2
(iii) The impact of share repurchase on the EPS, assuming the net income remains same. 4

Answer:

3. (a) Valuation of Rights Share of SBC Ltd.

$$P = \frac{MN + SR}{N + R} = \frac{(180 \times 6)(150 \times 1)}{6 + 1} = ₹175.71$$

The minimum expected price of the share after the rights issue would be ₹175.71.

(b) (i) Calculation of Buyback Price if Market Capitalization should be ₹200 lakhs

Surplus cash available = 90 lakhs

Estimated share price after repurchase = 10% above the buyback price
Let price for buyback be 'P'
Then market price of share after buyback will be '1.10 P'

Market capitalization

$$= 1.10\ p\ (10,00,000 - \frac{30\%\ of\ ₹90,00,000}{P})$$

= 11,00,000 P – 29,70,000

Market capitalization rate after buy back is ₹2,00,00,000.

Then,

11,00,000 P – 29,70,000	= 2,00,00,000
11,00,000 P	= 2,00,00,000 + 29,70,000
P	= 2,29,70,000/11,00,000
	= 20.88

Buyback price is to be fixed at ₹20.88

(ii) Number of shares to be bought back = ₹27,00,000/₹20.88 =1,29,310 Shares.

(iii) Impact on EPS due to buyback

No. of equity shares outstanding after buy – back
= 10,00,000 – 1,29,310
= 8,70,690 shares

Net income = existing shares x current EPS = 10,00,000 x 3

New EPS =
$\frac{10,00,000 \times ₹3}{8,70,690}$ =₹3.45.

The EPS has increased from ₹3 to ₹3.45 after the buy – back of shares.

4. You are provided with particulars about A Ltd. and four other firms in the same industry.

Firms	Book Value (₹)	EPS (₹)	DPS (₹)	CFPS (₹)	Number of shares	Price per share
B. Ltd.	20,00,000	10	5	8	1,00,000	30
C. Ltd.	28,80,000	6	5	5	2,00,000	16.2
D Ltd.	12,00,000	2	2	2	1,00,000	15
E Ltd.	40,00,000	20	8	15	2,00,000	28
A Ltd.	30,00,000	8	5	6	1,50,000	

EPS = Earnings Per Share, DPS = Dividend Per Share, CFPS = Cash Flow Per Share,

(a) You are required to compute values of the following variables for each of the other firms from the above table: 8
(i) Market Value to Book Value
(ii) Dividend Yield
(iii) Price Earning ratio (P/E)
(iv) Price to Cash Flow

(b) You are also required to compute the market value of Equity and value per share of A Ltd. under relative valuation method based on each of the four variables above. Use simple average of values of four other firms to form the relative valuation bases for A Ltd. 6

(c) Should you buy A Ltd. share at ₹40? 1

Answer:

4. (a)

	MV	MV/BV	DPS/P	P/E	P/CFPS
B Ltd	30,00,000	1.5	0.16666667	3	3.75
C Ltd	32,40,000	1.125	0.30864198	2.7	3.24
D Ltd	15,00,000	1.25	0.13333333	7.5	7.5
E Ltd	56,00,000	1.4	0.28571429	1.4	1.8666667

Note : MV = Price per share x No of shares

(b)

	MV/BV	DPS/P	P/E	P/CFPS
Average	1.31875	0.22358907	3.65	4.0891667

Market Value of Equity of A Ltd	30,00,000× 1.31875 =39,56,250	1,50,000× 22.3624527 =33,54,368	1,50,000× 29.2 =43,80,000	1,50,000× 24.535 =36,80,250
Value per share	39,56,250/1,50,000 =26.375	5/0.22358907 =22.3624527	8×3.65=29.2	6×4.0891667 =24.535

(c) As the price offered/quoted for buying shares of A Ltd of ₹40 per share is much higher than the market value on the basis of all the relative valuation methods, it should not be purchased at ₹40.

5. X Ltd. is contemplating to acquire B Ltd. The following information is available:

Company	**X Ltd.**	**B Ltd.**
EAT(₹)	**25,00,000**	**9,00,000**
No. of equity shares	**5,00,000**	**3,00,000**
Market Value per share (₹)	**21**	**14**

(Assume no synergy in earnings or value due to merger)

(a) If merger has to take place through such an exchange of shares that earnings available to shareholders of B Ltd. remains unchanged.
- **(i) What number of shares has to be issued by X Ltd. to B Ltd.? 2**
- **(ii) What would be the EPS of X Ltd. after merger? 1**
- **(iii) What would be the post merger market capitalization? 1**
- **(iv) What would be the post merger price of equity share? 1**

(b) If merger takes place by exchange of shares on the basis of market price
- **(i) What number of shares has to be issued by X Ltd. to B Ltd.? 2**
- **(ii) What would be the EPS of X Ltd. after merger? 2**
- **(iii) What earnings would be available to the equity shareholders of B Ltd.? 2**

(c) Between (a) and (b) which exchange ratio would be more beneficial to the shareholders of B Ltd. from the view point of earnings and from the view point of market value? 2+2

Answer:

5.

			Merged X Ltd	
Company	X Ltd	B Ltd	Under (a)	Under (b)
EAT (₹)	25,00,000	9,00,000	34,00,000	34,00,000
No. of equity shares	5,00,000	3,00,000	6,80,000	7,00,000
Market Value per share (₹)	21	14	21.61,76,471	
EPS	5	3	5	4.85,71,429
Market cap	1,05,00,000	42,00,000	1,47,00,000	1,47,00,000

a (i)	No. of shares to be issued	EAT of B/EPS of X	1,80,000
	Exchange ratio	EPS of B/EPS of X	0.6
	No. of Shares to be issued Exchange ratio × No. of shares of B	06. × 3,00,000	1,80,000

a(ii)	Merged EAT/Total No. of shares	
	34,00,000/6,80,000	5

a(iii)	Market cap of X + Market cap of B	1,47,00,000

a(iv)	Post merger price = Post merger Market cap/total no. of shares
	1,47,00,000/6,80,000 = 21.6176

b(i)	Exchange ratio	Price of B/Price of A	2/3
	No. of shares to be issued	2/3 × 3,00,000	2,00,000

b(ii)	Post merger EPS	Post merger EAT/total No. of shares	
		34,00,000/7,00,000	4.85714286

b(iii)	Post merger EPS×No. of shares issued to B	
	4.857143×2,00,000	9,71,429

c	B shareholders' earnings under (a)	9,00,000
	B shareholders' earnings under (b)	9,71,429
(b) is better for higher earning		
	B shareholders' value under (a)	38,91,176
	B shareholders' value under (b)	42,00,000
(b) is better for higher market value		

6. (a) D Ltd. is currently an unlevered firm. The company expects to generate ₹153.85 lakh in earnings before interest and taxes (EBIT), in perpetuity. The corporate tax rate is 35%. The after tax earnings is ₹100 lakh. All earnings after tax are paid out as dividends.
The firm is considering a capital restructuring to allow ₹200 lakh of debt. Its cost of debt capital is 10%. Unlevered firm in the same industry have a cost of equity capital of 20%.
What will the new value D Ltd. be? 5

(b) Wizard Investment Consultants have been following Hercules Limited for a long time and found that the company has negative valuation for growth opportunities. They suggested Hercules Limited as a potential target to Mr. N. Prabhu, Managing Director, Stronghold Limited — as the latter has the capabilities and the expertise of converting the negative growth opportunities values into the positive ones. Wizard Investment Consultants provided the following summarized information about Hercules Limited for the FY-2013.

Summarized Statement of Profit and Loss of Hercules Limited for the period ending on 31.03.2013

Particulars	**Amount (₹in Crores)**
Sales	**168.08**
Less: Cost of Goods Sold	**99.28**
Gross Profit	**68.80**
Depreciation	**3.53**
Profit Before Interest and Tax	**65.27**
Interest	**6.78**
Profit Before Tax	**58.49**
Tax @ 30%	**17.55**
Profit After Tax	**40.94**

Summarized Balance Sheet of Hercules Limited as on March 31, 2013.

Particulars	**Amount (₹in Crores)**

EQUITY AND LIABILITIES	
Share Capital	**73.13**
Reserves and Surplus	**277.88**
Non-Current Liabilities	**87.56**
Current Liabilities	**45.95**
TOTAL LIABILITIES	**484.52**
ASSETS	
Non-Current Assets	**195.65**
Current Assets	**288.87**
TOTAL ASSETS	**484.52**

Additional Information:

- **Face Value of a Share ₹10.00**
- **Estimated Cost of Equity 15%**
- **Hercules Limited follows constant Dividend-Payout Policy and has a Dividend Payout Ratio of 40%**

Assume that you are attached with Mr. N. Prabhu who requested you that on the basis of the above information, show that the present value of growth opportunities is negative. Also, you are required to give the reasons why should Stronghold Limited takeover Hercules Limited. 10

Answer:

6. (a) The value of D Ltd is equal to

$$VL = \frac{EBITX(1-Tc)}{r_O} + TcB$$

$$= \frac{₹100}{0.20} + (0.35 \times ₹200)$$

= ₹500 + ₹70

= ₹570

The value of the levered firm is ₹570, which is greater than the unlevered value of ₹500. Because $V_L = B + S$, The value of levered equity, S, is equal to ₹(570 - 200) = ₹370.

(b)

PAT (Profit after Tax)	₹40.94
Dividend Pay Out Ratio	40.00%
Retention Ratio	60.00%
Share Capital	₹73.13
Reserves and Surplus	₹277.88
Net Worth	₹351.01
Return on Equity (ROE)	11.66%
Growth rate (ROE x Retention Rate)	7.00%
No. of Shares (Face value - ₹10)	7.313
EPS	₹5.60
Dividend Per Share	₹2.24
Cost of Equity	15.00%
Intrinsic Value of the Share	₹29.96

Assuming that there is no growth, then the value of
The share will be - EPS/ke = 5.60/0.15 =₹37.33.

Present Value of Growth Opportunities (PVGO) = Value of share as per Growth Model – Value of a share if there is no growth (i.e. 100% Dividend Payout Ratio) = ₹29.96 -

₹37.33 = (₹7.37) and it is NEGATIVE.

Normally, the Present Value of Growth Opportunities (PVGO) is negative when the firm is not able to generate sufficient return on equity; it is much less than the cost of capital. Such companies are cheaper to buy and if the buyer does not do further investment and simply declare the dividend, they can create value for the shareholders. Since Stronghold Limited has the capabilities and the expertise of converting the negative growth opportunities values into the positive ones and the target company is cheaper, it is advisable for Stronghold Limited to takeover Hercules Limited.

7. Gupta Balance Scorecard Consultant LLP is a limited liabilities partnership firm providing consultancies regarding the development and the implementation of Balance Scorecard for corporate in India. Their summarized financial statements for the FY 2014 are given below:

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

Particulars	Amount (₹in Lakhs)
Revenue	**150.00**
Less:	
Employee Cost	**45.00**
Annual Rent of Office	**15.00**
Lease Rentals of the assets taken on Operating Lease	**12.00**
Insurance	**13.50**
Depreciation	**2.00**
Other Expenses	**1.50**
Total Expenses	**89.00**
Profit Before Tax	**61.00**
Tax @40%	**24.40**
Profit After Tax	**36.60**

Summarized Balance Sheet as on March 31, 2014

Particulars	Amount (₹in Lakhs)
LIABILITIES	
Capital	**20.00**
Reserves and Surplus	**35.00**
Non-Current Liabilities	**7.50**
Current Liabilities	**5.25**
Total Liabilities	**67.75**
ASSETS	
Non-Current Assets	**22.75**
Current Assets	**45.00**
Total Assets	**67.75**

Mr. K. Roy and his friend want to buy the LLP It is estimated that the free cash flows of LLP will grow at a rate of 5% per annum for the next five years; and after that they will grow at a rate of 8% per annum if Guptas do not remain in this line of consultancy. However, if Mr. Roy runs the LLP with his friend and Guptas are allowed to run parallel the same consultancy business in some other name, then first two years, free cash flows will fall by 10% and 5% respectively over the immediately preceding year, but after that they will grow at a rate of 6% for ever. If Mr. Roy wants to enter into a non-compete agreement with Guptas, then determine what will be maximum amount he should offer to them as compensation for the agreement. (Assume that the cost of capital is 15%) 15

Years	1	2	3	4	5	6	7

P.V. at Discounting Factor @ 15%	**0.870**	**0.756**	**0.658**	**0.572**	**0.497**	**0.432**	**0.376**

Answer:

7. Free Cash Flows of Gupta Balance Scorecard Consultant LLP
Profit After Tax ₹36.60
Add: Depreciation ₹2.00
Free Cash Flows ₹38.60
(In absence of information, it is assumed that there is no CAPEX and no change in Net Working Capital of the LLP)

Scenario # 1: When Guptas are not competing

	Actual	Projected				
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Free Cash Flows (Projected Growth Rate = 5%)	₹38.60	₹40.53	₹42.56	₹44.68	₹46.92	₹49.26
Discounting Factor @ 15%		0.870	0.756	0.658	0.572	0.497
PV of Free Cash Flows		₹35.26	₹32.18	₹29.40	₹26.84	₹24.48

Free Cash Valuation after five year (growing for ever at a rate of 8%) Discounting factor PV of Free Cash Flows after 5 years Sum of PV of Free Cash Flows upon 5 years	₹760.01 0.497 ₹377.73 ₹148.17
Total Value	₹525.90 lakhs

Scenario#2: When Guptas are competing

	Actual	Projected	
	2013-14	2014-15	2015-16
Free Cash Flows (Projected Growth Rate = fall by 10% for first year and fall by 5% for second year)	₹38.60	₹34.74	₹33.00
Discounting Factor @ 15%		0.870	0.756
PV of Free Cash Flows		₹30.22	₹24.95

Free Cash Valuation after two years (growing for ever at a rate of 8%) Discounting Factor PV of Free Cash Flows after 5 years Sum of PV of Free Cash Flows upto 5 years	₹388.67 0.756 ₹293.83 ₹55.17
Total Value	₹349.00 lakhs

Since the difference is (₹525.90 – ₹349.00) i.e. ₹176.90 lakhs, Mr. Roy may pay maximum an amount not exceeding this for non-compete agreement with Guptas.

8. **A Company had nearly completed a job relating to construction of a specialized equipment, when it discovered that the customer had gone out of business. At this stage, the position of the job was as under-**

a. Original cost estimate ₹1,75,200
b. Costs incurred so far ₹1,48,500
c. Costs to be incurred ₹ 29,700
d. Progress payments received from original customer ₹1,00,000

After searches, a new customer for the equipment has been found. He is interested to take the equipment, if certain modifications are carried out. The new customer wanted

the equipment in its original condition, but without its control device and with certain other modification. The costs of these additions and modifications are estimated as under-

Direct Material (at cost)	**₹1,050**
Direct Wages Deptt. A	**15 man days**
Deptt. B	**25 man days**
Variable overheads	**25% of direct wages in each department**
Delivery cost	**₹1,350**

Fixed overheads will be absorbed at 50% of direct wages in each department. The following additional information is available:

(i) The direct materials required for the modification are in stock and if not used for modification of this order they will be used in another job in place of materials that will now cost ₹2,250.
(ii) Department A is working normally and hence any engagement of labour will have to be paid at the direct wage rate of ₹120 per man day.
(iii) Department B is extremely busy. Its direct wages rate is ₹100 per man day and it is currently yielding a contribution of ₹3.20 per rupee of direct wages.
(iv) Supervisory overtime payable for the modification is ₹1,050.
(v) The cost of the control device that the new customer does not require is ₹13,500. If it is taken out, it can be used in another job in place of a different mechanism. The latter mechanism has otherwise to be bought for ₹10,500. The dismantling and removal of the control mechanism will take one man day in department A.
(vi) If the conversion is not carried out some of the materials in the original equipment can be used in another contract in place of materials that would have cost ₹12,000. It would have taken 2 man days of work in department A to make them suitable for this purpose. The remaining materials will realize ₹11,400 as scrap. The drawings which are included as part of the job, can be sold for ₹1,500.

You are required to calculate the minimum price which the company can afford to quote for the new customer as stated above, using opportunity cost to value the same. 15

Answer:

8. Working notes:

A. Cost of control device to be used in another job: (₹)

Cost of control device	10,500
Less: Dismantling & Removal cost of control mechanism(man day x ₹120)	120
Less : Variable cost (25% x ₹120)	30
Balance cost of control device	10,350

B. Net loss on material cost saving of equipment: (₹)

Loss on material cost saving of equipment	12,000
Less: Conversion cost (2 man days x ₹120)	240
Less: Variable overheads (25% x ₹240)	60
Net loss on material cost saving of equipment	₹11,700

C. Statement of minimum price which the company can afford to quote for the new customer (based on relevant cost): (₹)

Cost to be incurred to bring the equipment in its original condition		29,700
Opportunity cost of the direct material		2,250
Direct wages :		
Dept. A	(15 man days x ₹120)	1,800
Dept. B	(25 man days x ₹100)	2,500
Opportunity cost of contribution lost by department B (₹2,500 x ₹3.20)		8,000
Variable overheads	[25% x (₹1,800 + 2,500]	1,075
Delivery costs		1,350
Supervisory overtime payable for modification		1,050
Control device to be used in another job		(10,350)
Net loss on material cost savings, in the original equipment		11,700
Opportunity cost of remaining materials which can be sold as scrap		11,400
Opportunity cost of sale of drawings		1,500
Total minimum price which may be quoted		₹61,975