10

Developments in Financial Reporting

BASIC CONCEPTS

VALUE ADDED STATEMENT

Value Added (VA) is the wealth; a reporting entity has been able to create through the collective effort of capital, management and employees. In economic terms, value added is the market price of the output of an enterprise less the price of the goods and services acquired by transfer from other firms. VA can provide a useful measure in gauging performance and activity of the reporting entity.

The conventional VA statement is divided into two parts – the first part shows how VA is arrived at and the second part shows the application of such VA.

Gross Value Added (GVA): GVA is arrived at by deducting from sales revenue the cost of all materials and services which were brought in from outside suppliers. Besides sales revenue, any direct income, investment income and extraordinary incomes or expenses are also included in calculation of GVA. Including these items the equation, we get

(Sales revenue + Direct incomes) – Bought in cost of materials and services + Investment incomes + Extraordinary items = Retained profit + Depreciation + Wages + Interest + Tax + Dividend

Net Value Added (NVA): NVA can be defined as GVA less depreciation.

The various advantages of the VA statement are:

(a) Reporting on VA improves the attitude of employees towards their employing companies.

(b) VA statement makes it easier for the company to introduce a productivity linked bonus scheme for employees based on VA.

(c) VA based ratios (e.g. VA/Payroll, Taxation/VA, VA/Sales etc.) are useful diagnostic and predictive tools. Trends in VA ratios, comparisons with other companies and international comparisons may be useful. However, it may be noted that the VA ratios can be made more useful if the ratios are based on inflation adjusted VA data.

(d) VA provides a very good measure of the size and importance of a company.

(e) VA statement links a company's financial accounts to national income. A company's VA indicates the company's contribution to national income.

It is generally found that value addition is highest for service companies and lowest for a trading business.

ECONOMIC VALUE ADDED

EVA as a residual income measure of financial performance is simply the operating profit after tax less a charge for the capital, equity as well as debt, used in the business.

EVA helps to :

- Measure the financial performance.
- Take important managerial decisions.
- Equate managerial incentives with shareholder's interest.
- Improve financial & business literacy throughout the firm.

Cost of Capital

The term 'Cost of Capital' means the cost of long term funds of a company. It is the multiple of 'Capital Employed' and Weighted Average Rate of Cost of Debt Capital, Cost of Equity Capital and Cost of Preference Share Capital. This is why cost of capital is known as Weighted Average Cost of Capital (WACC). WACC is post tax. Capital Employed represents the total of Debt Capital, Equity Capital and Preference Share Capital.

Cost of Debt Capital

Cost of Debt Capital is the discount rate that equates the present value of after tax interest payment cash outflows to the current market value of the Debt Capital. Due to the tax-benefit on interest payment on debt capital, Cost of Debt is, generally, lower than the cost of Equity Capital,

Cost of Equity Capital

Cost of Equity Capital is the market expected rate of return. Equity capital and accumulated reserves and surpluses which are free to equity shareholders carry the same cost. Cost of Preference Capital is the discount rate that equates the present value of after tax interest payment cash outflows to the current market value of the Preference Share Capital.

Factors involved in calculating EVA:

$$\text{Cost of Debt } (K_d) = \frac{\text{Interest on Long Term Borrowings (1-Tax rate)}}{\text{Long Term Borrowings}} \times 100$$

$$\text{Cost of Preference Capital } (K_p) = \frac{\text{Preference Divind}}{\text{Preference Share Capital}}$$

Cost of Equity (K_e) = Risk free rate (R_f) + Beta [Market rate (R_m)– Risk free rate (R_f)]

Cost of Retained Earnings (K_r)

Beta

Ungeared Beta = Industry Beta / [1 + (1–Tax Rate) (Industry Debt Equity Ratio)]

Geared Beta = Ungeared Beta/[1 + (1 – tax rate) (Debt Equity Ratio)]

Equity Risk Premium = Market rate(R_m) – Risk free rate (R_f)]

Market Rate of Return (R_m) =

$$\frac{\text{Stock exchange index (at the end of the year} - \text{at the beginning of the year}}{\text{Stock exchange index at the beginning of the year}}$$

Overall cost of capital = $K_d \, X \frac{\text{Debt}}{\text{Total funds}} + K_p \, X \frac{\text{PSC}}{\text{Total funds}} + K_e X \frac{\text{Equity}}{\text{Total funds}}$

Total Funds = Debt + Preference Capital + Equity Funds.

Capital Asset Pricing Model

Capital Asset Pricing Model (CAPM) is the most widely used method of calculating the Cost of Equity Capital. Under CAPM cost of Equity Capital is expressed as

Risk Free Rate + Specific Risk Premium = Risk Free Rate + Beta X Equity Risk Premium

= Risk Free Rate + Beta X (Market Rate - Risk Free Rate)

Specific Risk Premium is a multiple of Beta and Equity Risk Premium.

Beta: Beta is a relative measure of volatility that is determined by comparing the return on a share to the return on the stock market. In simple terms, the greater the volatility, the riskier the share and the higher the Beta. For the companies, which are not listed in stock exchanges, beta of the similar industry may be considered after transforming it to un-geared beta and then re-gearing it according to the debt equity ratio of the company. The formula for un-gearing and gearing beta is shown below.

Ungeared Beta = Industry Beta / [1 + (1–Tax Rate) (Industry Debt Equity Ratio)]

Geared Beta = Ungeared Beta/[1+ (1 – tax rate) (Debt Equity Ratio)]

Equity Risk Premium: Equity Risk Premium is the excess return above the risk free rate that investors demand for holding risky securities. It is calculated as "Market rate of Return (MRR) minus Risk Free Rate". Market rate may be calculated from the movement of share market indices over a period of an economic cycle basing on moving average to smooth out abnormalities. Many of them do not calculate the MRR but on an ad-hoc basis they assume 8% to 12% as the equity risk premium.

MARKET VALUE ADDED

Market Value Added (MVA) is the difference between the current market value of a firm and the capital contributed by investors. If MVA is positive, the firm has added value. If it is negative the firm has destroyed value.

To find out whether management has created or destroyed value since its inception, the

firm's MVA can be used:

MVA = Market Value of Capital - Capital employed

SHAREHOLDERS VALUE ADDED

Shareholders' Value Added is a value-based performance measure of a company's worth to shareholders. The basic calculation is net operating profit after tax (NOPAT) minus the cost of capital from the issuance of debt and equity, based on the company's weighted average cost of capital (WACC).

HUMAN RESOURCE REPORTING

Human resource reporting is an attempt to identify, quantify and report investments made in human resources of an organisation that are not presently accounted for under conventional accounting practice. However, "human resources" are not yet recognised as 'assets' in the balance sheet.

Value Added Statement

Question 1

What are the advantages of preparation of Value Added (VA) statements? Explain in brief.

Answer

Various advantages of preparation of Value Added (VA) Statements are as under:

1. Improves the attitude of employees -Reporting on VA improves the attitude of employees towards their employing companies. This is because the VA statement reflects a broader view of the company's objectives and responsibilities.
2. Productivity linked bonus -VA statement makes it easier for the company to introduce a productivity linked bonus scheme for employees based on VA. The employees may be given productivity bonus on the basis of VA / Payroll Ratio.
3. Ratio Analysis-VA based ratios (e.g. VA / Payroll, taxation / VA, VA / Sales etc.) are useful diagnostic and predictive tools. Trends in VA ratios, comparisons with other companies and international comparisons may be useful.
4. Reflect Corporate Significance-VA provides a very good measure of the size and importance of a company. To use sales figure or capital employed figures as a basis for company's rankings can cause distortion. This is because sales may be inflated by large bought-in expenses or a capital-intensive company with a few employees may appear to be more important than a highly skilled labour–intensive company.
5. Contribution to Economy-VA statement links a company's financial accounts to national income. A company's VA indicates the company's contribution to national income.
6. Strong Conceptual-VA statement is built on the basic conceptual foundations which are currently accepted in balance sheets and income statements. Concepts such as going

concern, matching, consistency and substance over form are equally applicable to VA statement.

Question 2

From the following Profit and Loss Account of Kalyani Ltd., prepare a Gross Value Added Statement. Show also the reconciliation between Gross Value Added and Profit before Taxation.

Profit and Loss Account for the year ended 31st March, 2017

Income	*Notes*	*Amount (₹ in lakhs)*	*Amount (₹ in lakhs)*
Sales			*206.42*
Other Income			*10.20*
			216.62
Expenditure			
Production and Operational Expenses	*1*	*166.57*	
Administration Expenses	*2*	*6.12*	
Interest and Other Charges	*3*	*8.00*	
Depreciation		*5.69*	*186.38*
Profit before Taxes			*30.24*
Provision for taxes			*(3.00)*
			27.24
Investment Allowance Reserve Written Back			*0.46*
Balance as per Last Balance Sheet			*1.35*
			29.05
Transferred to:			
General Reserve		*24.30*	
Dividend		*3.00*	*27.30*
Surplus Carried to Balance Sheet			*1.75*
			29.05

Notes:

			(₹ in lakhs)
(1)	*Production and Operational Expenses*		
	Decrease in Stock		*30.50*
	Consumption of Raw Materials		*80.57*
	Consumption of Stores		*5.30*
	Salaries, Wages, Bonus and Other Benefits		*12.80*
	Cess and Local Taxes		*3.20*

	Other Manufacturing Expenses		*34.20*
			166.57
(2)	*Administration expenses include inter-alia Audit fees of ₹ 1 lakh, Salaries and commission to directors ₹ 2.20 lakhs and Provision for doubtful debts ₹ 2.50 lakhs.*		
			(₹ in lakhs)
(3)	*Interest and Other Charges:*		
	On Fixed Loans from Financial Institutions		*3.90*
	Debentures		*1.80*
	On Working Capital Loans from Bank		*2.30*
			8.00

Answer

Kalyani Ltd.
Value Added Statement
for the year ended 31st March, 2017

	₹ in lakhs	₹ in lakhs	%
Sales		206.42	
Less: Cost of bought in material and services:			
Production and operational expenses	150.57		
Administration expenses	3.92		
Interest on working capital loans	2.30	(156.79)	
Value Added by manufacturing and trading activities		49.63	
Add: Other income		10.20	
Total Value Added		59.83	
Application of Value Added:			
To Pay Employees:			
Salaries, Wages, Bonus and other benefits		12.80	21.39
To Pay Directors:			
Salaries and Commission		2.20	3.68
To Pay Government:			
Cess and Local Taxes	3.20		
Income Tax	3.00	6.20	10.36
To Pay Providers of Capital:			
Interest on Debentures	1.80		
Interest on Fixed Loans	3.90		
Dividend	3.00	8.70	14.54

To Provide for maintenance and Expansion of the company:			
Depreciation	5.69		
General Reserve (₹ 24.30 – ₹ 0.46)	23.84		
Retained profit (₹ 1.75 – ₹ 1.35)	0.40	29.93	50.03
		59.83	100.00

Reconciliation Between Total Value Added and Profit Before Taxation:

	(₹ in lakhs)	*(₹ in lakhs)*
Profit before tax		30.24
Add back:		
Depreciation	5.69	
Salaries, Wages, Bonus and other benefits	12.80	
Directors' Remuneration	2.20	
Cess and Local Taxes	3.20	
Interest on Debentures	1.80	
Interest on Fixed Loans	3.90	29.59
Total Value Added		59.83

Question 3

From the following Profit & Loss Account of Brightex Co. Ltd., prepare a gross value added statement for the year ended 31.12.2016:

Show also the reconciliation between gross value added and profit before taxation.

Profit and Loss Account for the year ended 31.12.2016

	Notes	*(₹'000)*	*(₹'000)*
Income:			
Sales			*6,240*
Other Income			*55*
			6,295
Expenditure:			
Production and operational expenses	*1*	*4,320*	
Administration expenses (Factory)	*2*	*180*	
Interest & Other charges	*3*	*624*	
Depreciation		*16*	*(5,140)*
Profit before tax			*1,155*
Provision for tax			*(55)*

			1,100
Balance as per last Balance Sheet			*60*
			1,160
Transferred to fixed assets replacement reserve		*400*	
Dividend paid		*160*	*(560)*
Surplus carried to Balance Sheet			*600*

Notes:

1. *Production & Operation expenses:*

Consumption of raw materials	*3,210*
Consumption of stores	*40*
Local tax	*8*
Salaries to administrative staff	*620*
Other manufacturing expenses	*442*
	4,320

2. *Administration expenses include salaries and commission to directors* *5*
3. *Interest on other charges include:*
   - *(a) Interest on bank overdraft (Overdraft is of temporary nature)* *109*
   - *(b) Fixed loan from I.C.I.C.I.* *51*
   - *(c) Working capital loan from I.F.C.I.* *20*
   - *(d) GST amount to one-tenth of total value added by manufacturing and trading activities.*

Answer

Brightex Co. Ltd
Value Added Statement
For the year ended 31st December, 2016

	(₹ in thousands)	*(₹ in thousands)*	*% thousands*
Sales			6,240
Less: Cost of bought in material and services:			
Production and operational expenses			
₹ (4,320 – 8 – 620)		3,692	

Administration expenses ₹ (180 – 5)		175	
Interest on bank overdraft		109	
Interest on working capital loan		20	
GST (Refer to working note)		180	
Other/miscellaneous charges ₹ (444–180)		264	(4,440)
Value added by manufacturing and trading activities			1,800
Add: Other income			55
Total Value Added			1,855
Application of Value Added:			
To Pay Employees :			
Salaries to Administrative staff		620	33.42
To Pay Directors:			
Salaries and Commission		5	0.27
To Pay Government:			
Local Tax	8		
Income Tax	55	63	3.40
To Pay Providers of Capital :			
Interest on Fixed Loan	51		
Dividend	160	211	11.37
To Provide for Maintenance and Expansion of the Company:			
Depreciation	16		
Fixed Assets Replacement Reserve	400		
Retained Profit ₹ (600 - 60)	540	956	51.54
		1,855	100.00

Reconciliation between Total Value Added and Profit before Taxation:

	(₹ in thousands)	*(₹ in thousands)*
Profit before Tax		1,155
Add back:		
Depreciation	16	
Salaries to Administrative Staff	620	

Director's Remuneration	5	
Interest on Fixed Loan	51	
Local Tax	8	700
Total Value Added		1,855

Working Note:

Calculation of GST

		(₹ in thousands)
Interest and other charges		624
Less : Interest on bank overdraft	109	
Interest on loan from ICICI	51	
Interest on loan from IFCI	20	(180)
GST and other/miscellaneous charges		444

Assuming that these miscellaneous charges have to be taken for arriving at Value Added

(In the first part of Value Added Statement), the GSTwill be computed as follows:

Let GST be x; thus miscellaneous/ other charges = ₹ 444 -x

Thus x = 1/10 x [₹ 6,240 - {₹ 3692+ ₹ 175+ ₹ 109+ ₹ 20+ x + (₹444-x)}]

= 1/10 x [₹ 6240 - ₹ 4440] = ₹ 180

Other/ miscellaneous charges = ₹ 444 - ₹ 180 = ₹ 264

The above solution is given accordingly.

However, if other/miscellaneous charges are taken as any type of application of Value Added (i.e, to be taken in the application part), then GST (x) will be computed as follows:

x = 1/10 x [₹ 6240 - ₹ (3692 + 175 + 109 + 20 + x)]

x = 1/10 x [₹ 2244 -x]

11x = ₹ 2244

x = ₹ 204

And thus total value added will be ₹ 2040 + ₹ 55 (other income) = ₹ 2095

And accordingly, application part will be prepared, taking miscellaneous charges.

₹ ('000) 240 [i.e, ₹ 444 - ₹ 204] as the application of value added.

Question 4

On the basis of the following income statement pertaining to Brite Ltd., you are required to prepare:

(a) Gross value added statement; and

(b) Statement showing reconciliation of gross value added with Profit Before Taxation.

Profit and Loss Account of Brite Ltd.
for the year ended 31st March, 2017

	(₹ in thousands)	(₹ in thousands)
Income		
Sales less returns		*15,27,956*
Dividends and interest		*130*
Miscellaneous income		*474*
(A)		*15,28,560*
Expenditure		
Production and operational expenses:		
Decreases in inventory of finished goods	*26,054*	
Consumption of raw materials	*7,40,821*	
Power and lighting	*1,20,030*	
Wages, salaries and bonus	*3,81,760*	
Staff welfare expenses	*26,240*	
GST	*14,540*	
Other manufacturing expenses	*32,565*	*13,42,010*
Administrative expenses:		
Directors' remuneration	*7,810*	
Other administrative expenses	*32,640*	*40,450*
Interest on:		
9% Mortgage debentures	*14,400*	
Long-term loan from financial institution	*10,000*	
Bank overdraft	*100*	*24,500*
Depreciation on fixed assets		*50,600*
(B)		*14,57,560*
Profit before Taxation (A) — (B)		*71,000*
Provision for Income-tax		*25,470*
Profit after Taxation		*45,530*

Balance of account as per last Balance Sheet		*6,300*
		51,830
Transferred to:		
General reserve 40% of ₹ 45,530	*18,212*	
Dividend @ 22%	*22,000*	
Tax on distributed profits @ 16.995%	*3,739*	*(43,951)*
Surplus carried to Balance Sheet		*7,879*

Answer

Brite Ltd.
Value Added Statement for the year ended 31st March, 2017

	(₹ in thousands)	*(₹ in thousands)*
Sales less returns		15,27,956
Less: Cost of bought in materials and services, as per working note	9,34,010	
Administrative expenses	32,640	
Interest on bank overdraft	100	(9,66,750)
Value added by manufacturing and trading activities		5,61,206
Add: Dividends and interest		130
Miscellaneous income		474
Total value added		5,61,810

Application of valued added

	(₹ in thousands)	*(₹ in thousands)*	*%*
To pay Employees:			
Wages, salaries and bonus	3,81,760		
Staff welfare expenses	26,240	4,08,000	72.62
To pay Directors:			
Directors' remuneration		7,810	1.39
To pay Government:			
Income tax	25,470		
Tax on distributed profits	3,739	29,209	5.20
To pay providers of capital:			

Interest on 9% debentures	14,400		
Interest on long-term loan from financial institution	10,000		
Dividend to shareholders	22,000	46,400	8.26
To provide for maintenance and expansion of the company:			
Depreciation on Fixed assets	50,600		
Transfer to General reserve	18,212		
Retained profit ₹ (7,879-6,300) (in 000's)	1,579	70,391	12.53
		5,61,810	100.00

Statement showing reconciliation of Total value added with Profit before taxation

	(₹ in thousands)	*(₹ in thousands)*
Profit Before Taxation		71,000
Add back:		
Wages, salaries and bonus	3,81,760	
Staff welfare expenses	26,240	
Directors' remuneration	7,810	
Interest on 9% mortgage debentures	14,400	
Interest on long-term loan from financial institution	10,000	
Depreciation on fixed assets	50,600	4,90,810
Total Value Added		5,61,810

Working Note:

Calculation of cost of bought in materials and services:

	(₹ in thousands)
Decrease in inventory of finished goods	26,054
Consumption of raw materials	7,40,821
GST	14,540
Power and lighting	1,20,030
Other manufacturing expenses	32,565
	9,34,010

Question 5

On the basis of the following Profit and Loss Account of Zed Limited and the supplementary information provided thereafter, prepare Gross Value Added Statement of the company for the year ended 31st March, 2017. Also prepare another statement showing reconciliation of Gross Value Added with Profit before Taxation.

Profit and Loss Account of Zed Limited for the year ended 31st March, 2017.

	Amount (₹ in lakhs)	Amount (₹ in lakhs)
Income		
Sales		*5,010*
Other Income		*130*
		5,140
Expenditure		
Production and Operational Expenses	*3,550*	
Administrative Expenses	*185*	
Interest	*235*	
Depreciation	*370*	*(4,340)*
Profit before Taxation		*800*
Provision for Taxation		*(280)*
Profit after Taxation		*520*
Credit Balance as per last Balance Sheet		*40*
		560
Appropriations		
Transfer to General Reserve		*100*
Preference Dividend paid		*100*
Equity Dividend		*300*
Balance carried to Balance Sheet		*60*
		560
Supplementary Information		
Production and Operational Expenses consist of:		
Raw Materials and Stores consumed		*1,900*
Wages, Salaries and Bonus		*610*
Local Taxes including Cess		*220*

Other Manufacturing Expenses		*820*
		3,550
Administrative Expenses consist of:		
Salaries and Commission to Directors		*60*
Audit Fee		*24*
Provision for Bad and Doubtful Debts		*20*
Other Administrative Expenses		*81*
		185
Interest is on:		
Loan from Bank for Working Capital		*35*
Debentures		*200*
		235

Answer

Gross Value Added Statement of Zed Ltd.
for the year ended 31st March, 2017

		(₹ in lakhs)	*(₹ in lakhs)*
Sales			5,010
Less:	Cost of raw materials, stores and other services consumed	2,720	
	Administrative expenses	125	
	Interest on loan from bank for working capital	35	(2,880)
Value added by manufacturing and trading activities			2,130
Add:	Other income		130
Total value added			2,260

Application of Value Added

		(₹ in lakhs	*(₹ in lakhs)*	*%*
To	pay employees			
	Wages, salaries and bonus		610	26.99
To	pay directors			
	Salaries and commission to Directors		60	2.66
To	pay Government			
	Local taxes including cess	220		

	Income tax	280	500	22.12
To	pay providers of capital			
	Interest on debentures	200		
	Preference dividend	100		
	Equity dividend	300	600	26.55
To	provide for the maintenance and expansion of the company:			
	Depreciation	370		
	Transfer to general reserve	100		
	Retained profit ₹ (60 – 40) lakhs	20	490	21.68
			2,260	100.00

Statement showing Reconciliation between Gross Value Added with Profit before Taxation

	(₹ in lakhs)	*(₹ in lakhs)*
Profit before taxation		800
Add back:		
Wages, salaries and bonus	610	
Salaries and commission to Directors	60	
Local taxes including cess	220	
Interest on debentures	200	
Depreciation	370	1,460
Gross Value Added		2,260

Question 6

Value Added Ltd. furnishes the following Profit and Loss A/c:

Profit and Loss A/c for the year ended 31st March, 2017

Income	*Notes*	*(₹ '000)*
Turnover	*1*	*29,872*
Other Income		*1,042*
		30,914
Expenditure		
Operating expenses	*2*	*26,741*
Interest on 8% Debenture		*987*

Interest on Cash Credit	*3*	*151*
GST		*1,952*
		29,831
Profit before depreciation		*1,083*
Less: Depreciation		*(342)*
Profit before tax		*741*
Provision for tax	*4*	*(376)*
Profit after tax		*365*
Less: Transfer to Fixed Assets Replacement Reserve		*(65)*
		300
Less: Dividend paid		*(125)*
Retained Profit		*175*

Notes:

(1) Turnover is based on invoice value and net of sales tax.

(2) Salaries, wages and other employee benefits amounting to ₹ 14,761 ('000) are included in operating expenses.

(3) Cash Credit represents a temporary source of finance. It has not been considered as a part of capital.

(4) Transfer of ₹ 54 ('000) to the credit of deferred tax account is included in provision for tax.

Prepare value added statement for the year ended 31st March, 2017 and reconcile total value added with profit before taxation.

Answer

Value Added Ltd.
Value Added Statement for the year ended 31st March, 2017

	(₹ '000)	*(₹ '000)*	*%*
Turnover		29,872	
Less: Cost of bought in materials and services:			
Operating expenses (₹ 26,741 –₹ 14,761)	11,980		
GST	1,952		
Interest on Cash Credit	151	(14,083)	
Value added by manufacturing and trading activities		15,789	
Add: Other income		1,042	

Total value added		16,831	
Application of value added:			
To Pay to employees:			
Salaries, wages and other employee benefits		14,761	87.70
To Pay to Government:			
Corporation tax (₹ 376 – ₹ 54)		322	1.91
To Pay to providers of capital:			
Interest on 8% Debentures	987		
Dividends	125	1,112	6.61
To Provide for maintenance and expansion of the company:			
Depreciation	342		
Fixed Assets Replacement Reserve	65		
Deferred Tax Account	54		
Retained Profit	175	636	3.78
		16,831	100

Note: Deferred tax account could alternatively be shown as an item 'To pay to government'.

Reconciliation between total value added and profit before taxation

	(₹ '000)	*(₹ '000)*
Profit before tax		741
Add back: Depreciation	342	
Wages, salaries and other benefits	14,761	
Debenture interest	987	16,090
Total Value Added		16,831

Question 7

From the following Profit and Loss account of New Mode Reporting Ltd., prepare a gross value added statement for the year ended 31st December, 2016. Show also the reconciliation between GVA and Profit before taxation:

Profit and Loss Account

	(₹ '000)	*(₹ '000)*
Income		
Sales	*12,480*	
Other income	*110*	*12,590*

Expenditure		
Production and Operational expenditure	*8,640*	
Administrative expenses	*360*	
Interest and other charges	*1,248*	
Depreciation	*32*	*(10,280)*
Profit before tax		*2,310*
Less: Provision for tax		*(110)*
Profit after tax		*2,200*
Add: balance as per last Balance Sheet		*120*
		2,320
Less: Transfer to Fixed assets replacement Reserve	*800*	
Dividend paid	*320*	*(1,120)*
Surplus carried to Balance Sheet		*1,200*

Additional information:

		₹
(i)	*Production and Operational expenses consists of*	
	Consumption of Raw materials	*64,20,000*
	Consumption of Stores	*80,000*
	Local tax	*16,000*
	Salaries to Administrative staff	*12,40,000*
	Other Manufacturing expenses	*8,84,000*
(ii)	*Administrative expenses include salaries and commission to directors*	*10,000*
(iii)	*Interest and other charges include-*	
	(a) Interest on bank overdraft (overdraft is of temporary nature)	*2,18,000*
	(b) Interest on Fixed loan from SIDBI	*1,02,000*
	(c) Interest on Working capital loan from IFCI	*40,000*
	(d) GST	*?*
(iv)	*GST amount to one-tenth of total value added by manufacturing and trading activities.*	

Answer

New Mode Reporting Ltd.
Value Added Statement for the year ended 31st December, 2016

			(in ₹ '000)
Sales			12,480
Less:	Cost of Materials and Services:		
	Production and Operational Expenses ₹ (8,640–16-1,240)	7,384	
	Administrative Expenses ₹ (360 – 10)	350	
	Interest on Bank Overdraft	218	
	Interest on Working Capital Loan	40	
	GST (Refer to working note)	360	
	Other/miscellaneous charges ₹ (888 – 360)	528	8,880
Value added by manufacturing and trading activities			3,600
Add:	Other Income		110
Gross value added from operations			3,710

Application of Gross Value Added

		(₹ in '000)	*(₹ in '000)*	*%*
To	Pay Employees:			
	Salaries to Administrative Staff		1240	33.42
To	Pay Directors:			
	Salaries and Commission		10	0.27
To	Pay Government:			
	Local Taxes	16		
	Income Tax	110	126	3.40
To	Pay Providers of Capital:			
	Interest on Fixed Loan	102		
	Dividend	320	422	11.37
To	Provide for maintenance and expansion of the company:			
	Depreciation	32		
	Fixed Assets Replacement Reserve	800		
	Retained Profit (₹ 1200 – 120)	1080	1912	51.54
			3,710	100.00

Reconciliation between Gross Value added and Profit Before Taxation

			(₹ '000)
Profit before Tax			2,310
Add Back:	Depreciation	32	
	Salaries to Administrative Staff	1,240	
	Directors' Salaries and Commission	10	
	Interest on Fixed Loan	102	
	Local Tax	16	1,400
Total value added			3,710

Working Note:

Calculation of GST	*(₹ '000)*	*(₹ '000)*
Interest and other charges		1,248
Less: Interest on bank overdraft	218	
Interest on SIDBI loan	102	
Interest on IFCI loan	40	(360)
GST and other charges		888

Assuming that these other /miscellaneous charges will be deducted for arriving at the value added, the GSTwill be calculated as follows:

Let GST be denoted by - E

Then, other charges = ₹ 888 - E

GST are $\frac{1}{10}$th of value added

Hence E = $\frac{1}{10}$th [₹ 12,480 – {₹ 7,384+ ₹ 350+ ₹ 218 + ₹ 40+ E + (₹ 888 – E)}]

= $\frac{1}{10}$th [₹ 12,480 – ₹ 8,880] = $\frac{1}{10}$th × ₹ 3,600= ₹ 360

Other/miscellaneous charge ₹ 888 – ₹ 360 = ₹ 528

The above solution has been given accordingly.

Alternatively, if other/miscellaneous charges are considered as application of value added (i.e., not deducted for deriving the value added), calculation of GST (E) will be as follows:

E = $\frac{1}{10}$th [₹ 12,480 – (₹ 7,384 + ₹ 350 + ₹ 218+ ₹ 40+E)]

E = $\frac{1}{10}$th × (₹ 4,488 - E)

11E = ₹ 4,488

E = ₹ 408

And thus other/miscellaneous charges will be ₹ 888 – ₹ 408 = ₹ 480

Gross Value added in this case will be ₹ 4,080 + ₹ 110 (Other income) = ₹ 4,190

And accordingly, application part will be prepared after taking other/miscellaneous charges.

Question 8

Prepare a value added statement for the year ended on 31.3.2017 and reconciliation of total value added with profit before taxation, from the Profit and Loss Account of Futures Ltd. for the year ended on 31.3.2017:

		(₹ in '000)
Income:		
Sales	*24,400*	
Other Income	*508*	*24,908*
Expenditure:		
Operating cost	*21,250*	
GST	*1,110*	
Interest on Bank Overdraft	*75*	
Interest on 9% Debenture	*1,200*	*23,635*

	(₹ in '000)
Profit before Depreciation	*1,273*
Depreciation	*(405)*
Profit before tax	*868*
Provision for tax	*(320)*
Profit after tax	*548*
Proposed Dividend	*(48)*
Retained Profit	*500*

The following additional Information are given:

(i) Sales represents Net sales after adjusting Discounts, Returns and Sales tax.

(ii) Operating cost includes ₹ 82,50,000 as wages, salaries and other benefits to Employees.

(iii) Bank overdraft is temporary.

Answer

Value Added Statement of M/s Futures Ltd.

		(₹ in'000)	
Sales		24,400	
Less: Operating cost - Cost of bought in material & services (₹ 21,250 – ₹ 8,250)	13,000		
GST	1,110		
Interest on bank overdraft	75	(14,185)	
Value added by trading and manufacturing activities		10,215	
Add: Other income		508	
Total value added		10,723	
Application of value added			%
To Pay Employees:			
Wages, salaries and other benefits		8,250	76.94
To Pay Government : Corporate tax		320	2.98
To Pay providers of capital:			
Interest on 9% debentures	1,200		
Dividends	48	1,248	11.64
To Provide for maintenance and expansion of the company:			
Depreciation	405		
Retained profit	500	905	8.44
		10,723	100.00
Reconciliation			
Profit before tax		868	
Depreciation		405	
Wages, salaries and other benefits		8,250	
Debenture interest		1,200	
		10,723	

Question 9

Prepare a value added statement for the year ended on 31.03.2017 and reconciliation of total value added with profit before taxation, from the profit and loss account of Paradise Ltd. for the year ended on 31-03-2017.

Income:	*(₹ in lakhs)*
Sales	*254.00*
Other income	*6.00*
Total	*260.00*
Expenditure:	
Operating cost	*222.00*
GST	*11.20*
Interest on bank overdraft	*1.00*
Interest on 9% debentures	*15.00*
	249.20
Profit before depreciation	*10.80*
Depreciation	*4.10*
Profit before tax	*6.70*
Provision for tax	*2.40*
Profit after tax	*4.30*
Proposed dividend	*0.30*
Retained profit	*4.00*

The following additional information are given:

(i) Sales represents net sales after adjusting discounts, returns and sales tax.

(ii) Operating cost includes ₹ 82.00 lakhs as wages, salaries and other benefits to employees.

(iii) Bank overdraft is temporary.

Answer

Value Added Statement of M/s. Paradise Ltd.

		₹ in lakhs
Sales		254.00
Less: Cost of bought in material and services:		
Operating cost (₹ 222.00 lakhs – ₹ 82 lakhs)	140.00	
GST	11.20	
Interest on bank overdraft	1.00	(152.20)
Value added by trading activities		101.80
Add: Other income		6.00
Total Value Added		107.80

Application of value added

		₹ *in lakhs*	*%*
To pay Employees:			
Wages, salaries and other benefits		82.00	76.07
To pay Government : Corporate tax		2.40	2.23
To pay Providers of Capital :			
Interest on 9% debentures	15.00		
Dividends	0.30	15.30	14.19
To provide for Maintenance and Expansion of the Company			
Depreciation	4.10		
Retained profit	4.00	8.10	7.51
		107.80	100

Reconciliation between Total Value Added and Profit before Taxation:

	₹ *in lakhs*
Profit before tax	6.70
Add back:	
Depreciation	4.10
Wages, salaries and other benefits	82.00
Interest on debentures	15.00
Total Value Added	107.80

Question 10

Famous Corporation has been preparing Value Added Statements for the past five years. The Human Resource Manager of the company has suggested introducing a value added incentive scheme to motivate the employees for their better performance. To introduce the scheme, it is proposed that the best index performance (favourable to employer) i.e. Employee Costs to Added Value for the last five years, will be used as the target index for future calculations of the bonus to be paid.

After the target index is determined, any actual improvement in the index will be rewarded. The employer and the employee will be sharing any such improvement in the ratio of 1:2. The bonus is given at the end of the year, after the profit for the year is determined.

The following information is available for the last 5 years.

Value Added Statement for 5 years

Particulars	₹ *in thousands*				
	2012	*2013*	*2014*	*2015*	*2016*
Sales	*5,600*	*7,600*	*9,200*	*10,400*	*12,000*

Less: Bought in goods & services	*2,560*	*4,000*	*5,000*	*5,600*	*6,400*
Added Value	*3,040*	*3,600*	*4,200*	*4,800*	*5,600*
Employee Costs	*1,300*	*1,520*	*1,680*	*1,968*	*2,240*
Dividend	*200*	*300*	*400*	*480*	*600*
Taxes	*640*	*760*	*840*	*1000*	*1,120*
Depreciation	*520*	*620*	*720*	*880*	*1,120*
Debenture Interest	*80*	*80*	*80*	*80*	*80*
Retaining Earnings	*300*	*320*	*480*	*392*	*440*
Added Value	*3,040*	*3,600*	*4,200*	*4,800*	*5,600*

Summarised Profit and Loss Account for the year ended on 31st March, 2017

Particulars		*(₹ in thousand)*
		Amount
Income		
Sales less returns	*13,600*	
Dividends and Interest	*500*	
Miscellaneous Income	*500*	*14,600*
Expenditure		
Production and Operational Expenses:		
Cost of Materials	*5,000*	
Wages & Salaries	*1,800*	
Other Manufacturing Expenses	*1,400*	*8,200*
Administrative Expenses:		
Administrative Salaries	*600*	
Administration Expenses	*600*	*1,200*
Selling and Distribution Expenses:		
Selling and Distribution Salaries	*120*	
Selling Expenses	*400*	*520*
Financial Expenses:		
Debenture Interest		*80*
Depreciation		*1,520*
Total Expenditure		*11,520*
Profit before taxation		*3,080*

Provision for taxation		*770*
Profit after taxation		*2,310*

From the above information, prepare Value Added Statement for the year 2016-2017 and determine the amount of bonus payable to employees, if any.

Answer

1. Calculation of Target index

					(₹ in thousands)
Year	*2012*	*2013*	*2014*	*2015*	*2016*
Employees cost	1,300	1,520	1,680	1,968	2,240
Value added	3,040	3,600	4,200	4,800	5,600
Percentage of 'Employee cost' to 'Value added'	42.76%	42.22%	40%	41%	40%

Target index percentage is taken as least of the above from the employer's viewpoint i.e. 40%.

2. Value Added Statement for the year 2016-2017

	(₹ in thousands)	(₹ in thousands)
Sales		13,600
Less: Cost of bought in goods & services		
Materials consumed	5,000	
Other manufacturing expenses	1,400	
Administrative expenses	600	
Selling expenses	400	(7,400)
		6,200
Add: Miscellaneous income		500
Dividends and interest		500
Value Added		7,200

3. Employee cost for 2016-2017

	(₹ in thousands)
Wages and salaries	1,800
Administrative salaries	600
Selling and distribution salaries	120
	2,520

4. **Calculation of target employee cost** = Target Index Percentage x Value added

= 40% x ₹ 7,200 thousands = ₹ 2,880 thousands

5. **Calculation of savings**

Target employee cost	=	₹ 2,880 thousands
Less: Actual Cost	=	(₹ 2,520 thousands)
Saving	=	₹ 360 thousands

6. **Calculation of Bonus payable for the year 2016-2017:**

2/3 of savings is Bonus Payable = ₹ 360 thousands x 2/3 = ₹ 240 thousands.

Economic Value Added and Market Value Added

Question 11

Explain the concept of 'Economic value added' (EVA for short) and its uses.

Answer

Economic Value Added (EVA) for short, is primarily a benchmark to measure earnings efficiency. Though the term "Economic Profit" was very much there since the inception of "Economics", Stern Stewart & Co., of USA has got a registered Trade Mark for this by the name "EVA", an acronym for Economic Value Added. Its uses can be explained as:

(a) Measurement of financial performance - EVA as a residual income measure of financial performance, is simply the operating profit after tax less a charge for the capital, equity as well as debt, used in the business. EVA includes profit and loss as well as balance sheet efficiency as well as the ROCE, or ROE.

(b) Impact on shareholders' wealth - In addition, EVA is a management tool to focus managers on the impact of their decisions in increasing shareholders' wealth. These include both strategic decisions such as what investments to make, which businesses to exit, what financing structure is optimal; as well as operational decisions involving trade-offs between profit and asset efficiency such as whether to make in house or outsource, repair or replace a piece of equipment, whether to make short or long production runs etc.

Most importantly the real key to increasing shareholder wealth is to integrate the EVA framework in four key areas; to measure business performance; to guide managerial decision making; to align managerial incentives with shareholders' interests; and to improve the financial and business literacy throughout the organisation.

To better align managers interests with Shareholders – the EVA framework needs to be holistically applied in an integrated approach – simply measuring EVAs is not enough it must also become the basis of key management decisions as well as be linked to senior management's variable compensation.

Question 12

Write short note on Market Value Added.

Answer

Market value added is the market value of capital employed in the firm less the book value of capital employed. Market value added is calculated by summing up the paid up value of equity and preference share capital, Retained earnings, long term and short term debts and subtracting this sum from the market value of equity and debt.

Market value added measures cumulatively the performance of corporate entity.

A High market value added means that the company has created substantial wealth for share holders. On the other hand, negative MVA means that the value of management's actions and investments are less than the value of the capital contributed to the company by the capital market or that the wealth and value has been destroyed.

Question 13

The following information is available of a concern; calculate E.V.A.:

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

Answer

E.V.A. = NOPAT – COCE

NOPAT = Net Operating Profit after Tax

COCE = Cost of Capital Employed

COCE = Weighted Average Cost of Capital × Average Capital Employed

= WACC × Capital Employed

Debt Capital		₹ 2,000 crores
Equity capital (500 + 7,500)	=	₹ 8,000 crores

Capital employed	=	₹ 2,000+ ₹ 8,000 = ₹ 10,000 crores
Debt to capital employed	=	$\frac{2,000}{10,000}=0.20$
Equity to Capital employed	=	$\frac{8,000}{10,000}=0.80$
Debt cost before Tax		12%
Less: Tax (30% of 12%)		3.6%
Debt cost after Tax		8.4%

According to Capital Asset Pricing Model (CAPM)

Cost of Equity Capital = Risk Free Rate + Beta × Equity Risk Premium

Or

= Risk Free Rate + Beta (Market Rate – Risk Free Rate)

= 9 + 1.05 × (19-9)

= 9 + 1.05 × 10 = 19.5%

WACC = Equity to CE x Cost of Equity capital + Debt to CE x Cost of debt

= 0.8× 19.5% + 0.20× 8.40%

= 15.60% + 1.68% = 17.28%

COCE = WACC × Capital employed

= 17.28% × ₹ 10,000 crores = ₹ 1728 crores

E.V.A. = NOPAT – COCE

= ₹ 2,100 – ₹ 1,728 = ₹ 372 crores

Question 14

Pilot Ltd. supplies the following information using which you are required to calculate the economic value added.

Financial Leverage	*1.4 times*	
Capital (equity and debt)	*Equity shares of ₹ 1,000 each*	*34,000 (number)*
	Accumulated profit	*₹ 260 lakhs*
	10 percent Debentures of ₹ 10 each	*80 lakhs (number)*
Dividend expectations of equity shareholders	*17.50%*	
Prevailing Corporate Tax rate	*30%*	

Answer

Computation of EVA	*(₹ in lakhs)*
Net profit after tax (Refer Working Note 1)	140
Add: Interest adjusted for tax effect (800 × 10% × 0.70)	56
Return to Providers of Funds	196
Less: Cost of Capital (Refer Working Note 2)	(161)
Economic Value Added (EVA)	35

Working Notes:

1. Interest and Net Profit

$$\text{Financial Leverage} = \frac{\text{Profit before Interest \& Taxes (PBIT)}}{\text{Profit before Tax (PBT)}}$$

Interest on Borrowings = ₹ 800,00,000 × 10% = ₹ 80 lakhs

Therefore, $1.40 = \frac{\text{PBIT}}{\text{PBIT} - \text{Interest}}$

$1.40 = \frac{\text{PBIT}}{\text{PBIT} - 80}$

1.40 (PBIT- 80) = PBIT

1.40 PBIT- 112 = PBIT

1.40 PBIT- PBIT = 112

0.40 PBIT = 112

PBIT = 112/0.40

PBIT = ₹ 280 Lakhs

PBT = PBIT – I=280-80 = ₹ 200 lakhs

Less: Tax (30%) = (₹ 60) lakhs

Net profit after tax = ₹ 140 lakhs

2. Cost of Capital

	(₹ in lakhs)
Equity Shareholders' funds	600
10% Debenture holders' funds	800
Total	1,400

Weights assigned to Equity shareholders fund = $\frac{600}{1400}=0.4286$

Weights assigned to Debenture holders = $\frac{800}{1400}=0.5714$

Source of Funds (1)	*Amount ₹ (in lakhs)* (2)	*Weight* (3)	*Cost %* (4)	*WACC %* (5)=(3 × 4)%
Equity share holders' funds	600	0.4286	17.50	7.50
Debenture holders' funds	800	0.5714	7.00*	4.00
Total	1400	1.0000	----	11.50

Cost of Capital = Average Capital Employed × Weighted Average cost of Capital (WACC)

= ₹ 1,400 lakhs × 11.50% = ₹ 161 lakhs.

Question 15

From the following information of Vinod Ltd., compute the economic value added:

(i)	*Share capital*	*₹ 2,000 lakhs*
(ii)	*Reserve and surplus*	*₹ 4,000 lakhs*
(iii)	*Long-term debt*	*₹ 400 lakhs*
(iv)	*Tax rate*	*30%*
(v)	*Risk free rate*	*9%*
(vi)	*Market rate of return*	*16%*
(vii)	*Interest*	*₹ 40 lakhs*
(viii)	*Beta factor*	*1.05*
(ix)	*Profit before interest and tax*	*₹ 2,000 lakhs*

Answer

Vinod Limited

Computation of Economic Value Added

Economic Value Added	(*₹ in Lakhs*
Net Operating Profit after Tax (Refer Working Note 5)	1,372.00
Add: Interest on Long-term Fund (Refer Working Note 2)	28.00
	1,400.00

**Rate of interest net of corporate tax of 30%.*

Less: Cost of Capital ₹ 6,400 lakhs × 15.77% (Refer working notes 3 and 4)	(1,009.28)
Economic Value Added	390.72

Working Notes:

1. **Cost of Equity** = Risk free Rate + Beta Factor (Market Rate – Risk Free Rate)
   9% + 1.05 (16 – 9) = 9% + 7.35% = 16.35%

2. **Cost of Debt**

Interest	₹ 40 lakhs
Less: Tax (30%)	(₹ 12 lakhs)
Interest after Tax	₹ 28 lakhs

   Cost of Debt = $\frac{28}{400} \times 100 = 7\%$

3. **Weighted Average Cost of Capital**

Cost of Equity	₹ 6,000 lakhs × 16.35% (W.N.1)	₹ 981 lakhs
Cost of Debt	₹ 400 lakhs × 7% (W.N.2)	₹ 28 lakhs
		₹ 1,009 lakhs

   WACC = $\frac{1,009}{6,400} \times 100 = 15.77\%$ (approx.)

4. **Capital Employed**

	(₹ *in lakhs)*
Share Capital	2,000
Reserves and Surplus	4,000
Long term debts	400
	6,400

5. **Net Operating Profit after Tax**

	(₹ in lakhs)
Profit before Interest and Tax	2,000
Less: Interest	(40)
	1,960
Less: Tax 30% on 1,960 Lakhs	(588)
Net Operating Profit after Tax	1,372

Question 16

Prosperous Bank has a criterion that it will give loans to companies that have an "Economic Value Added" greater than zero for the past three years on an average. The bank is considering lending money to a small company that has the economic value characteristics shown below. The data relating to the company is as follows:

(i) Average operating income after tax equals ₹ 25,00,000 per year for the last three years.

(ii) Average total assets over the last three years equals ₹ 75,00,000.

(iii) Weighted average cost of capital appropriate for the company is 10% which is applicable for all three years.

(iv) The company's average current liabilities over the last three years are ₹ 15,00,000.

Does the company meet the bank's criterion for a positive economic value added?

Answer

Calculation of Economic Value Added

	₹
Net Operating Profit After Tax	25,00,000
Less: Cost of capital employed (Refer W.N.)	(6,00,000)
Economic Value Added	19,00,000

Economic value added is greater than zero. Therefore, the company qualifies for the loan.

Working Note:

Calculation of Cost of Capital employed	₹
Average total assets	75,00,000
Less: Average current liabilities	(15,00,000)
Capital employed	60,00,000

Cost of capital = Capital employed x Weighted average cost of capital

$= ₹\ 60,00,000 \times \frac{10}{100} = ₹\ 6,00,000$

Question 17

Life Industries Ltd (LIL) furnishes the following information from which you are required to calculate the prevailing Economic Value Added of the company and also explain the reason for the difference, if any, between the EVA as calculated by you and the MVA (Market Value Added) of LIL amounting to ₹ 14005 crores.

Common shares of ₹1,000 face value	*1,58,200 units*
12% Debentures ₹10 face value	*50,00,000 units*
Current tax rate	*30%*
Financial Leverage	*1.1 times*
Securities Premium Account (Rupees in lakhs)	*155*
Free Reserves (Rupees in lakhs)	*154*
Capital Reserve (Rupees in lakhs)	*109*

It is a prevailing practice for companies in the industry to which LIL belongs to pay at least a dividend of 15% p.a. to its common shareholders.

Answer

Computation of Economic Value Added

	₹ in lakhs
Profit after tax	420
Add: Interest net of tax = 60 x $\left(\frac{100-30}{100}\right)$	42
Return to providers of funds	462
Less: Cost of Capital	(342)
Economic Value Added	120

MVA of ₹ 14005 crore:

The MVA of ₹ 14005 crore is the difference between the current Market Value of LIL and the capital contributed by the fund providers. While EVA measures current earning efficiency of the company, MVA takes into consideration the EVA from not only the assets in place but also from the future projects/activities of the company. The difference between MVA over EVA thus represents the value attributed to the future potential of the company & may change from time to time based on market sentiments. In short the MVA is the net present value of all future EVA's.

Working Notes:

1. Calculation of Net Profit after interest and tax

Interest on Debentures = 50,00,000 units x 10 x 12% = ₹ 60,00,000

Therefore, Financial Leverage = $\frac{\text{Profit before Interest \& taxes (PBIT)}}{\text{PBIT less Interest}}$

$1.10 = \frac{\text{PBIT}}{\text{PBIT} - ₹\ 60,00,000}$

1.10 (PBIT – ₹ 60,00,000) = PBIT

1.10 PBIT – ₹ 66,00,000 = PBIT

1.10 PBIT – PBIT = ₹ 66,00,000

0.10 PBIT = ₹ 66,00,000

PBIT = ₹ 6,60,00,000

Profit after interest but before tax = ₹ 6,60,00,000 – ₹ 60,00,000 = ₹ 6,00,00,000

Less: Income Tax @ 30%	(₹ 1,80,00,000)
Profit After Interest & Tax	₹ 4,20,00,000

2. Calculation of Weighted Average Cost of Capital (WACC)

	₹ in lakhs	*Amount (₹) (1)*	*Weight (2)*	*Cost% (3)*	*WACC% (4)=2x3*
Equity Shareholders' fund					
Common Shares	1,582				
Securities Premium	155				
Free Reserves	154				
Capital Reserves	109				
		2,000	0.80	15	12.00
Debentureholders' fund		500	0.20	8.4*	1.68
		2,500	1.00		13.68

Cost of Capital = Capital Employed x WACC%

= ₹ 2,500 lakhs x 13.68%

= ₹ 342 lakhs

Question 18

The following information (as of 31-03-2017) is supplied to you by M/s Fox Ltd.:

			(₹ in crores)
(i)	*Profit after tax (PAT)*		*205.90*
(ii)	*Interest*		*4.85*
(iii)	*Equity Share Capital*	*40.00*	
	Accumulated surplus	*700.00*	
	Shareholders fund	*740.00*	

* Rate of interest on debentures is taken net of tax of 30%.

	Loans (Long term)	*37.00*	
	Total long term funds		*777.00*
(iv)	*Market capitalization*		*2,892.00*
Additional information:			
(a)	*Risk free rate*		*12.00 percent*
(b)	*Long Term Market Rate (Based on BSE Sensex)*		*15.50 percent*
(c)	*Effective tax rate for the company*		*25.00 percent*
(d)	*Beta (β) for last few years*		
	Year		
	1	*0.48*	
	2	*0.52*	
	3	*0.60*	
	4	*1.10*	
	5	*0.99*	

Using the above data you are requested to calculate the Economic Value Added of Fox Ltd. as on 31st March, 2017.

Answer

Net Operating Profit After Tax (NOPAT) = Profit After Tax (PAT) + Interest (net of tax)

= 205.90 + 4.85 x (1-0.25) = ₹ 209.54 crores

Debt Capital		₹ 37 crores
Equity capital (40 + 700)	=	₹ 740 crores
Capital employed	=	₹ 37 +₹ 740 = ₹ 777 crores
Debt to capital employed	=	₹ 37 crores/₹ 777 crores = 0.0476
Equity to capital employed	=	₹ 740 crores /₹ 777 crores =0.952
Interest cost before Tax		₹ 4.85 crores
Less: Tax (25% of ₹ 4.85 crores)		(₹ 1.21 crores)
Interest cost after tax		**₹ 3.64 crores**
Cost of debt	=	(₹ 3.64 crores/ ₹ 37 crores) x 100
	=	9.83%

According to Capital Asset Pricing Model (CAPM)

Beta for calculation of EVA should be the highest of the given beta for the last few years. Accordingly,

Cost of Equity Capital = Risk Free Rate + Beta (Market Rate – Risk Free Rate)

= 12% + 1.10 × (15.50% - 12%)

= 12% + 1.10 × 3.5% = 15.85%

Weighted Average Cost of Capital (WACC)

= Equity to Capital Employed (CE) x Cost of Equity Capital + Debt to CE x Cost of Debt

= 0.952× 15.85% + 0.0476 × 9.83%

= 15.09% + 0.47% = 15.56%

Cost of Capital Employed (COCE) = WACC × Capital Employed

= 15.56% × ₹ 777 crores = ₹ 120.90 crores

Economic Value Added (E.V.A.) = NOPAT – COCE

= ₹ 209.54 crores – ₹ 120.90 crores = ₹ 88.64 crores

Question 19

DISA & Co. has provided the following information:

	(₹ in lacs)
Equity Share Capital (₹ 10 each)	*400*
15% Preference Share Capital (₹ 10 each)	*200*
Reserves and Surplus	*220*
15% Debentures	*1600*
10% Non-trade Investments (Nominal Value ₹ 100 lacs)	*140*
Land and Building held as Investment	*20*
Advance given for Purchase of Plant	*10*
Capital Work in Progress	*30*
Underwriting Commission (not written off)	*20*
Earnings per share	*16*
Tax rate	*30%*
Beta factor	*1.65*
Market rate of return	*16.25%*
Risk free rate	*9.85%*

Calculate Economic Value Added by the company.

Answer

Computation of Economic Value Added (EVA)

Particulars	*(₹ in lacs)*
Net Operating Profit after Tax (NOPAT)	831.00
Less: Weighted average cost of operating capital employed (13.35% of 2,200) (See W.N.7)	(293.70)
Economic Value Added (EVA)	537.30

Working Notes:

1. Net Operating Profit after Tax (NOPAT)

Earnings per share	₹ 16
No. of Equity Shares	40 lacs
	₹ in lacs
Profit after Interest, Tax & Preference Dividend [40 lacs x ₹ 16]	640.00
Add: Preference Dividend (15% of ₹ 200 lacs)	30.00
Profit after Tax	670.00
Add: Tax @ 30% [670/70 x 30]	287.14
Profit before Tax	957.14
Add: Interest on Debentures [15% of ₹ 1,600 lacs]	240.00
Profit before Interest & Tax	1,197.14
Less: Income from Non-Trade Investment [10% of ₹ 100 lacs]	(10.00)
Net Operating Profit before Tax	1,187.14
Less: Tax @ 30%	(356.14)
Net Operating Profit after Tax [NOPAT]	831.00

2. Cost of Equity = Risk Free Rate + Beta Factor x (Market Rate - Risk Free Rate)

= 9.85% + 1.65 (16.25-9.85) = 20.41%

3. Cost of Preference shares = 15%

4. Cost of Debt = Interest Rate x (1 - tax rate) = 15% x (1 - 0.30) = 10.5%

5. Total Capital Employed = [Equity Share Capital + Retained Earnings + Preference Share Capital + Debentures]

= [400 + (220 - 20) + 200 + 1,600] = 2,400

6. Weighted Average Cost of Capital (WACC)

$$= \left(\frac{600}{2,400} \times 20.41\%\right) + \left(\frac{200}{2,400} \times 15\%\right) + \left(\frac{1,600}{2,400} \times 10.5\%\right)$$

= 5.10 + 1.25 + 7% = 13.35%

7. Operating Capital Employed

		₹ *in lacs*
Total Capital		2,400
Less: Non-operating Capital Employed		
10% Non-Trade Investment	140	
Land and Building held as Investment	20	
Advance given for purchase of a Plant	10	
Capital work-in-progress	30	(200)
Operating Capital Employed		2,200

Human Resource Reporting

Question 20

Write short notes on:

(a) Jaggi and Lau model on valuation on group basis of Human Resources.

(b) Opportunity cost (HRA).

(c) Human Resource Accounting.

Answer

(a) According to Jaggi and Lau Model, proper valuation of human resources is not possible unless the contributions of individuals as a group are taken into consideration. A group refers to homogeneous employees whether working in the same department or division of the organisation or not. An individual's expected service tenure in the organisation is difficult to predict but on a group basis it is relatively easy to estimate the percentage of people in a group likely to leave the organisation in future. This model attempted to calculate the present value of all existing employees in each rank. Such present value is measured with the help of the following steps:

(i) Ascertain the number of employees in each rank.

(ii) Estimate the probability that an employee will be in his rank within the organisation or terminated/promoted in the next period. This probability will be estimated for a specified time period.

(iii) Ascertain the economic value of an employee in a specified rank during each time period.

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

Jaggi and Lau simplified the process of measuring the value of human resources by considering a group of employees as valuation base. But in the process, they ignored the exceptional qualities of certain skilled employees. The performance of a group may be seriously affected in the event of exit of a single individual.

(b) Opportunity Cost: It is one of the Economic value models used for measurement and valuation of Human assets. As per this model, opportunity cost is the value of an employee in his alternative use. This opportunity cost is used as a basis for estimating the value of Human resources. Opportunity cost value may be established by competitive bidding within the firm so that in effect, Managers must bid for any scarce employee. A Human asset will have a value only if it is a scarce resource, that is, when its employment in one division denies it to another division. This method excludes employees of the type of which can be readily hired from outside the firm. Also, it is in very rare cases that managers would like to bid for an employee.

(c) Human Resource Accounting (HRA) is an attempt to identify, quantify and report investments made in human resources of an organization. Leading public sector units like OIL, BHEL, NTPC and SAIL etc. have started reporting human resources in their annual reports as additional information. Although human beings are considered as the prime mover for achieving productivity, and are placed above technology, equipment and money, the conventional accounting practice does not assign significance to the human resource. Human resources are not thus recognized as 'assets' in the Balance Sheet. While investments in human resources are not considered as assets and not amortised over the economic service life, the result is that the income and expenditure statement comprising current revenue and expenditure gives a distorted picture of the real affairs of the organization.

Accountants have been severely criticized by the Behavioural Scientists for their failure to value human resources, as this has come out as a handicap for effective management.

Human resource accounting provides scope for planning and decision making in relation to proper manpower planning. Also, such accounting can bring out the effect of various new rules, procedures and incentives relating to work force, and in turn, can act as an eye opener for modifications of existing statutes and laws.

Question 21

Briefly describe the method of valuation of human resources as suggested by Jaggi and Lau. Also point out the special merit and demerit of this method.

Answer

Jaggi and Lau suggested a model for valuation of human resources. According to them, proper valuation of human resources is not possible unless the contributions of individuals as a group are taken into consideration. A group refers to homogeneous employees whether working in the same department or division of the organization or not. An individual's expected service tenure in an organization is difficult to predict, but on a group basis, it is relatively easy to estimate the percentage of people in a group likely to leave the organization in future. This model attempts to calculate the present value of all existing employees in each rank. Such present value is measured with the help of the following steps:

(i) Ascertain the number of employees in each rank.

(ii) Estimate the probability that an employee will be in his rank within the organization on terminated/promoted in the next period. This probability will be estimated for a specified time-period.

(iii) Ascertain the economic value of an employee in a specified rank during each time period.

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

Jaggi and Lau tried to simplify the process of measuring the value of human resources by considering a group of employees as basis of valuation. But in the process they ignored the exceptional qualities of certain skilled employees. The performance of a group may be seriously affected in the event of exit of a single individual.

Merit

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

Demerit

This model ignores individual skills of the employees. The varied skills of the employees is are not recognized in the valuation process under Jaggi and Lau model.

Question 22

Briefly describe the progress made by India so far in the field of human resource accounting.

Answer

Human resource accounting can be defined as the process of identifying, measuring and communicating information about human resources in financial statements in order to facilitate effective management. Human resource accounting is a recent phenomenon in India. Leading public sector units like OIL, BHEL, NTPC, MMTC and SAIL etc. have started reporting Human Resources in their annual reports as additional information. The Indian Companies basically adopted the model of human resource valuation as advocated by Lev and Schwartz (1971).

Indian Companies focused their attention on the present value of employee earning as a measure of their human capital. However, the Indian Companies have suitably modified the Lev and Schwartz model to suit their individual circumstances.

Question 23

Give an account of the growing scope of human capital reporting.

Answer

Of late there is a growing trend of shift from the traditional focus on financial reporting of quantifiable resources (which can be measured in monetary terms) to a more comprehensive approach of reporting under which human resources are also considered as measurable assets. Having followed the methods of accounting of fixed assets, one can take into account the employee-related costs like cost of recruitment, training and orientation of employees, for the purpose of capitalization and then the appropriate portion thereof can be amortized each year over the estimated years of effect of such costs.

The relevance of human resource information lies in the fact that it concerns organizational changes in the firm's human resources. The ratio of human to non-human capital indicates the degree of labour intensity of an organization. Comparison of the specific values of human capital based on the organization's scales of wages and salaries with the general industry standards can be a good source of information to the management. There is no standard human capital reporting format as employment reporting is relatively a new form of reporting. Usually, the report inter alia contains data pertaining to employee numbers, employment and training policies, collective bargaining arrangements, industrial disputes, pension and pay arrangement and disabled employee numbers.

Human capital reporting provides scope for planning and decision-making in relation to proper manpower planning. Also, such reporting can bring out the effect of various rules, procedures and incentives relating to work force, and in turn, can act as an eye opener for modifications of existing statutes, laws and the like.

Question 24

A company has a capital base of ₹ 1 crore and has earned profits to the tune of ₹ 11 lakhs. The Return on Investment (ROI) of the particular industry to which the company belongs is 12.5%. If the services of a particular executive are acquired by the company, it is expected that the profits will increase by ₹ 2.5 lakhs over and above the target profit.

Determine the amount of maximum bid price for that particular executive and the maximum salary that could be offered to him.

Answer

Capital Base	=	₹ 1,00,00,000
Actual Profit	=	₹ 11,00,000
Target Profit @ 12.5%	=	₹ 12,50,000

Expected Profit on employing the particular executive

= ₹ 12,50,000 + ₹ 2,50,000 = ₹ 15,00,000

Additional Profit = Expected Profit – Actual Profit

= ₹ 15,00,000 – ₹ 11,00,000 = ₹ 4,00,000

$$\text{Maximum bid price} = \frac{\text{Additional Profit}}{\text{Rate of Return on Investment}} = \frac{4,00,000}{12.5} \times 100 = ₹\ 32,00,000$$

Maximum salary that can be offered = 12.5% of ₹ 32,00,000 i.e., ₹ 4,00,000

Maximum salary can be offered to that particular executive upto the amount of additional profit i.e., ₹ 4,00,000.

Question 25

From the following details, compute according to Lev and Schwartz (1971) model, the total value of human resources of the employee groups skilled and unskilled.

		Skilled	*Unskilled*
(i)	*Annual average earning of an employee till the retirement age*	*₹ 50,000*	*₹ 30,000*
(ii)	*Age of retirement*	*65 years*	*62 years*
(iii)	*Discount rate*	*15%*	*15%*
(iv)	*No. of employees in the group*	*20*	*25*
(v)	*Average age*	*62 years*	*60 years*

Answer

According to Lev and Schwartz, the value of human capital embodied in a person of age is the present value of his remaining future earnings from employment. Their valuation model for a discrete income stream is given by the following formula:

$$V = \sum_{t=\tau}^{t} \frac{I(t)}{(1+r)^{t-\tau}}$$

Where,

V = the human capital value of a perso for …… years old

I(t) = the person's annual earnings up to retirement.

r = a discount rate specific to the person.

t = retirement age.

Value of skilled employees:

$$= \frac{50,000}{(1+0.15)^{(65-62)}} + \frac{50,000}{(1+0.15)^{(65-63)}} + \frac{50,000}{(1+0.15)^{(65-64)}}$$

₹ 32,875.81 + ₹ 37,807.18 + ₹ 43,478.26 = ₹ 1,14,161.25

Total value of skilled employees is ₹ 1, 14,161.25 × 20 = ₹ 22,83,225.

Value of unskilled employees

$$= \frac{30,000}{(1+0.15)^{(62-60)}} + \frac{30,000}{(1+0.15)^{(62-61)}} = \frac{30,000}{(1+0.15)^2} + \frac{30,000}{(1+0.15)}$$

= ₹ 22,684.31 + ₹ 26,086.96 = ₹ 48,771.27

Total value of the unskilled employees = ₹ 48,771.27× 25 = ₹ 12,19,282

Total value of human resources (skilled and unskilled) = ₹ 22,83,225 + ₹ 12,19,282

= ₹ 35,02,507.

Exercise

Question 1

From the following Profit and Loss Account of X Limited, prepare Gross Value Added Statement and show the reconciliation between Gross Value Added and Profit before taxation:

Profit and Loss Account for the year ended 31st March, 2017

Income	*(₹ in lakhs)*	*(₹ in lakhs)*
Sales		*800*
Other Income		*50*
		850
Expenditure		
Production and Operational Expenses	*600*	
Administrative Expenses	*30*	
Interest and Other Charges	*30*	
Depreciation	*20*	*680*
Profit before taxes		*170*
Provision for taxes		*30*
		140
Balance as per last Balance Sheet		*10*
		150
Transferred to:		
General Reserve		*80*
Proposed Dividend		*20*
Surplus carried to Balance Sheet		*50*
		150

Break-up of some of the Expenditure is as follows:		
Production and Operational Expenses:		
Consumption of Raw Materials and Stores		*320*
Salaries, Wages and Bonus		*60*
Cess and Local Taxes		*20*
Other Manufacturing Expenses		*200*
		600
Administrative Expenses:		
Audit Fee		*6*
Salaries and Commission to Directors		*8*
Provision for Doubtful Debts		*6*
Other Expenses		*10*
		30
Interest and other Charges:		
On Working Capital Loans from Bank		*10*
On Fixed Loans from ICICI		*15*
On Debentures		*5*
		30

[Answer: Total Value Added ₹ 298 lakhs; Reconciliation between Gross Value Added and Profit before Taxation- (₹ in lakhs) Profit before tax 170+ Depreciation 20 + Salaries, Wages and Bonus 60+ Directors' Remuneration+ 8 Cess and Local Taxes 20 + Interest on Debentures 5 + Interest on Fixed Loans 15]

Question 2

The following is the Profit and Loss Account of Galaxy Ltd. for the year ended 31.03.2017. Prepare a Gross Value Added Statement of Galaxy Ltd. and show also the reconciliation between Gross Value Added and Profit before taxation.

Profit and Loss Account for the year ended 31.03.2017

	Notes	*(₹ in lakhs)*	
Income:			
Sales		–	*890*
Other Income		–	*55*
			945
Expenditure:			
Production and operational expenses	*(a)*	*641*	–
Administration expenses (Factory)	*(b)*	*33*	–

Interest	*(c)*	*29*	*–*
Depreciation		*17*	*720*
Profit before taxes		*–*	*225*
Provision for taxes	*(d)*	*–*	*30*
Profit after tax		*–*	*195*
Balance as per last Balance Sheet		*–*	*10*
			205
Transferred to General Reserve			*45*
Dividend paid			*95*
			140
Surplus carried to Balance Sheet			*65*
			205

Notes:

(a)	*Production and Operational expenses*	*(₹ in lakhs)*
	Consumption of raw materials	*293*
	Consumption of stores	*59*
	Salaries, Wages, Gratuities etc. (Admn.)	*82*
	Cess and Local taxes	*98*
	Other manufacturing expenses	*109*
		641

(b) Administration expenses include salaries, commission to Directors ₹ 9.00 lakhs Provision for doubtful debts ₹ 6.30 lakhs.

(c)	*(₹ in lakhs)*
Interest on loan from ICICI Bank for working capital	*9*
Interest on loan from ICICI Bank for fixed loan	*10*
Interest on loan from IFCI for fixed loan	*8*
Interest on Debentures	*2*
	29

(d) The charges for taxation include a transfer of ₹ 3.00 lakhs to the credit of Deferred Tax Account.

(e) Cess and Local taxes include GST, which is equal to 10% of cost of bought-in material and services.

[Answer: Total value added 396 lakhs; GST = 549 – 494 = ₹ 55 lakhs]

Question 3

What is economic value added and how is it calculated? Discuss.

Question 4

From the following information of Vinod Ltd., compute the economic value added:

(i)	*Share capital*	*₹ 2,000 lakhs*
(ii)	*Reserve and surplus*	*₹ 4,000 lakhs*
(iii)	*Long-term debt*	*₹ 400 lakhs*
(iv)	*Tax rate*	*30%*
(v)	*Risk free rate*	*9%*
(vi)	*Market rate of return*	*16%*
(vii)	*Interest*	*₹ 40 lakhs*
(viii)	*Beta factor*	*1.05*
(ix)	*Profit before interest and tax*	*₹ 2,000 lakhs*

[Answer: Economic Value Added ₹ 390.72 lakhs; Cost of Equity = 16.35%; Cost of Debt = $\frac{28}{400}\times 100$ **= 7%; Weighted Average Cost of Capital** $\frac{1,009}{6,400}=15.77\%$ **(approx.); Capital Employed ₹ 6,400 lakhs; Net Operating Profit after Tax ₹ 1,372 lakhs]**

Question 5

Why Human Resources Asset is not recognized in the Balance sheet?

Question 6

From the following details, compute the total value of human resources of skilled and unskilled group of employees according to Lev and Schwartz (1971) model:

		Skilled	*Unskilled*
(i)	*Annual average earning of an employee till the retirement age.*	*60,000*	*40,000*
(ii)	*Age of retirement*	*65 years*	*62 years*
(iii)	*Discount rate*	*15%*	*15%*
(iv)	*No. of employees in the group*	*30*	*40*
(v)	*Average age*	*62 years*	*60 years*

[Answer:

Total value of skilled employees= ₹ 1,36,993.50 x 30 employees= ₹ 41,09,805

Total value of unskilled employees = ₹ 65,028.34 x 40 employees = ₹ 26,01,133.60

Total value of human resources (skilled and unskilled) = ₹ 41,09,805 + ₹ 26,01,133.60

= ₹ 67,10,938.60.