

Solution:

Let F be the recommended INR/USD rate for the forward cover. Accordingly, year-wise equivalent cash inflows in Indian Rupees shall be as follows:

Year	Cash Inflow in USD Lakh	Cash Inflow in ₹ Lakh
1	30.00	30.00F
2	40.00	40.00F
3	50.00	50.00F
4	60.00	60.00F
5	70.00	70.00F

Now let us compute Net Present Value of project assuming a discount rate of 12% as follows:

Year	PVF @ 12%	Cash Flow in ₹ Lakh	PV in ₹ Lakh
0	1.00	- 12450.00	- 12450.00
1	0.893	30.00F	26.79F
2	0.797	40.00F	31.88F
3	0.712	50.00F	35.60F
4	0.636	60.00F	38.16F
5	0.567	70.00F	39.69F
			172.12F – 12,450

Since expected surplus after closure of the project is ₹ 1,858.08 Lakh, we can compute the value of F as follows:

$$1,858.08 = 172.12F - 12,450$$

$$F = 83.13$$

Thus, for forward cover the rate of ₹ 83.13/ USD is recommended.

Alternatively, if students have assumed discounting rate as 15% then answer will be as follows:

Let F be the recommended INR/USD rate for the forward cover. Accordingly, year-wise equivalent cash inflows in Indian Rupees shall be as follows:

Year	Cash Flow in USD Lakh	Cash Inflow in ₹ Lakh
1	30.00	30.00F
2	40.00	40.00F
3	50.00	50.00F
4	60.00	60.00F
5	70.00	70.00F

Now let us compute Net Present Value of project assuming a discount rate of 15% as follows:

Year	PVF @ 15%	Cash Flow in ₹ Lakh	PV in ₹ Lakh
0	1.00	- 12,450.00	- 12,450.00
1	0.870	30.00F	26.10F
2	0.756	40.00F	30.24F
3	0.658	50.00F	32.90F
4	0.572	60.00F	34.32F
5	0.497	70.00F	34.79F
			158.35F – 12,450

Since expected surplus after closure of the project is ₹ 18,58.08 Lakh, we can compute the value of F as follows:

$$1,858.08 = 158.35F - 12,450$$

$$F = 90.36$$

Thus, for forward cover the rate of ` 90.36/ USD is recommended.

Alternative Solution if students have assumed that the discounting rate 15% for the given cash inflows then applicable discounting rates for the project is –

$$(1 + 0.06978) / (1 + \text{Risk Premium}) = (1 + 0.15)$$

$$\text{Or, } 1 + \text{Risk Premium} = 1.15 / 1.06978$$

$$= 1.075$$

$$\text{Therefore, Risk adjusted dollar rate is } = (1.0750 \times 1.04186) - 1$$

$$= 1.1199 - 1$$

= 0.12

Calculation of NPV

Year	Cash Flow US\$ Lakh	PV Factor at 12%	PV (US\$ Lakh)
1	30.00	0.893	26.79
2	40.00	0.797	31.88
3	50.00	0.712	35.60
4	60.00	0.636	38.16
5	70.00	0.567	<u>39.69</u>
			172.12
		Less: Investment	<u>150.00</u>
		NPV	<u>22.12</u>

Since PQR Ltd. is expecting a net surplus of ₹ 1,858.08 lakh after the closure of the project the recommended rate of INR/ USD is (₹ 1,858.08 lakh/ USD 22.12 lakh) ₹ 84.00.

Question – 02

XY Limited is engaged in large retail business in India. It is contemplating for expansion into a country of Africa by acquiring a group of stores having the same line of operation as that of India.

The exchange rate for the currency of the proposed African country is extremely volatile. Rate of inflation is presently 40% a year. Inflation in India is currently

10% a year. Management of XY Limited expects these rates likely to continue for the foreseeable future.

Estimated projected cash flows, in nominal terms, in India as well as African country for the first three years of the project are as follows:

	Year – 0	Year – 1	Year – 2	Year – 3
Cash flows in Indian(000)	–2,00,000	–6,600	–10,000	–13,000
Cash flows in AfricanRands (000)	8,00,000	+2,80,000	+5,50,000	+10,00,000

XY Ltd. assumes the year 3 nominal cash flows will continue to be earned each year indefinitely. It evaluates all investments using nominal cash flows and a nominal discounting rate. The present exchange rate is African Rand 6 to ₹ 1.

You are required to calculate the net present value of the proposed investment considering the fact that the company uses discounting rate of 10.80% to evaluate any project but to reflect high risk of this project it is considering to adjust a risk premium of 8.30%

Note: -

1. Use PV Factors upto 3 decimal points.
2. Use Exchange Rates upto 4 decimal points.
3. Compute final calculation in multiple of ₹ 000 and round off them upto zero.
4. Ignore taxation.

(MTP April – 2025)

Solution:

First, we shall compute the discount rate to calculate the NPV of the project.

$$(1 + \text{Risk Premium}) (1 + \text{Normal Discounting Rate}) = (1 + \text{Required Rate})$$

$$(1.083) (1.108) = (1 + \text{Required Rate})$$

$$\text{Required Rate} = 0.20 \text{ i.e. } 20\%$$

Calculation of NPV

Year	0	1	2	3
Inflation factor in India	1.00	1.10	1.21	1.331
Inflation factor in Africa	1.00	1.40	1.96	2.744
Exchange Rate (as per IRP)	6.00	7.6364	9.7190	12.3696
Cash Flows in ₹ '000				
Nominal (1)	-2,00,000	-6,600	-10,000	-13,000
Cash Flows in African Rand '000				
Nominal	-8,00,000	2,80,000	5,50,000	10,00,000
In Indian ₹ '000 (2)	-1,33,333	36,666	56,590	80,843

Net Cash Flows in ₹ '000 (1) + (2)	-3,33,333	30,066	46,590	67,843
PVF @ 20%	1	0.833	0.694	0.579
PV	-3,33,333	25,045	32,333	39,281

NPV of 3 years = -2,36,674 (₹ '000)

$$\text{NPV of Terminal Value} = \frac{67,843}{0.20} \times 0.579 = 1,96,405 \text{ (₹ '000)}$$

$$\begin{aligned} \text{Total NPV of the Project} &= -2,36,674 \text{ (₹ '000)} + 1,96,405 \text{ (₹ '000)} \\ &= - 40,269 \text{ (₹ '000)} \end{aligned}$$

CHAPTER – 14

BUSINESS VALUATION

PART I: ECONOMIC VALUE ADDED (EVA) & MARKET VALUE ADDED

Question – 01

The following data pertains to XYZ Inc. engaged in software consultancy business as on 31 December 2010.

	(\$ Million)
Income from consultancy	935.00
EBIT	180.00
Less: Interest on Loan	<u>18.00</u>
EBT	162.00
Tax @ 35%	<u>56.70</u>
	<u>105.30</u>

Balance Sheet

		(\$ Million)	
Liabilities	Amount	Assets	Amount
Equity Stock (10 million share @ \$ 10 each)	100	Land and Building	200
Reserves & Surplus	325	Computers & Software's	295
Loans	180	Current Assets:	
Current Liabilities	180	Debtors	150
		Bank	100
		Cash	<u>40</u>
	<u>785</u>		<u>290</u>
			<u>785</u>

With the above information and following assumption you are required to compute

- (a) Economic Value Added
- (b) Market Value Added.

Assuming that:

- (i) WACC is 12%.

(ii) The share of company currently quoted at \$ 50 each

(SM TYK – 14)

Solution:

(a) Determination of Economic Value Added (EVA)

	\$ Million
EBIT	180.00
Less: Taxes @ 35%	<u>63.00</u>
Net Operation Profit after Tax	117.00
Less: Cost of Capital Employed [W.No.1]	<u>72.60</u>
Economic value added	<u>44.40</u>

(b) Determination of Market Value Added (MVA)

	\$ Million
Market value of Equity Stock [W.no.2]	500
Equity Fund [W.no.3]	<u>425</u>
Market Value Added	<u>75</u>

Working Notes:

(1) Total Capital Employed

Equity Stock	\$ 100 Million
Reserve and Surplus	\$ 325 Million
Loan	<u>\$ 180 Million</u>
	<u>\$ 605 Million</u>
WACC	12%
Cost of Capital employed \$ 605 Million × 12%	\$ 72.60 Million

(2) Market Price per equity share (A)	\$ 50
No. of equity share outstanding (B)	10 Million
Market value of equity stock (A) × (B)	\$ 500 Million

(3) Equity Fund

Equity Stock	\$ 100 Million
Reserves & Surplus	<u>\$ 325 Million</u>
	<u>\$ 425 Million</u>

Question – 02

RST Ltd.'s current financial year's income statement reported its net income after tax as ₹ 25,00,000. The applicable corporate income tax rate is 30%.

Following is the capital structure of RST Ltd. at the end of current financial year:

	₹
Debt (Coupon rate = 11%)	40 lakhs
Equity (Share Capital + Reserves & Surplus)	125 lakhs
Invested Capital	165 lakhs

Following data is given to estimate cost of equity capital:

Equity Beta of RST Ltd.	1.36
Risk-free rate i.e. current yield on Govt. bonds	8.5%
Average market risk premium (i.e. Excess of return on market portfolio over risk-free rate)	9%

Required:

- Estimate Weighted Average Cost of Capital (WACC) of RST Ltd.; and
- Estimate Economic Value Added (EVA) of RST Ltd.

(SM TYK – 10)

Solution:**Cost of Equity as per CAPM**

$$\begin{aligned}k_e &= R_f + \beta \times \text{Market Risk Premium} \\&= 8.5\% + 1.36 \times 9\% \\&= 8.5\% + 12.24\% \\&= 20.74\%\end{aligned}$$

Cost of Debt

$$k_d = 11\%(1 - 0.30) = 7.70\%$$

WACC

$$\begin{aligned} (k_0) &= k_e \times \frac{E}{E + D} + k_d \times \frac{D}{E + D} \\ &= 20.74 \times \frac{125}{165} + 7.70 \times \frac{40}{165} \\ &= 15.71 + 1.87 \\ &= 17.58\% \end{aligned}$$

$$\begin{aligned} \text{Taxable Income} &= ₹ 25,00,000 / (1 - 0.30) \\ &= ₹ 35,71,429 \text{ or } ₹ 35.71 \text{ lakhs} \end{aligned}$$

$$\begin{aligned} \text{Operating Income} &= \text{Taxable Income} + \text{Interest} \\ &= ₹ 35,71,429 + ₹ 4,40,000 \\ &= ₹ 40,11,429 \text{ or } ₹ 40.11 \text{ lacs} \end{aligned}$$

$$\begin{aligned} \text{EVA} &= \text{EBIT} (1 - \text{Tax Rate}) - \text{WACC} \times \text{Invested Capital} \\ &= ₹ 40,11,429 (1 - 0.30) - 17.58\% \times ₹ 1,65,00,000 \\ &= ₹ 28,08,000 - ₹ 29,00,700 \\ &= - ₹ 92,700 \end{aligned}$$

Question - 03

Following is the information of M/s. DY Ltd. for the year ending 31/03/2021:

Particulars	
Sales	₹ 1000 Lakh
Operating Expenses Including Interest	₹ 620 Lakh
8% Debentures	₹ 250 Lakh
Equity Share Capital (Face Value of ₹ 10 each)	₹ 250 Lakh
Reserves and Surplus	₹ 250 Lakh
Market Value of DY Ltd.	₹ 900 Lakh
Corporate Tax Rate	30%

Risk Free Rate of Return	7%
Market Rate of Return	12%
Equity Beta	1.4

You are required to

- i. Calculate Weighted Average Cost of Capital of DY Ltd.
- ii. Calculate Economic Value Added
- iii. Calculate Market Value Added

(Exam December – 2021) (8 Marks)

Solution:

(i) Calculation of Weighted Average Cost of Capital

$$\text{Equity } (250 + 250) = 500$$

$$\text{Debt} = 250$$

$$\begin{aligned} K_e &= R_f + (R_m - R_f) \beta \\ &= 7 + (12 - 7) 1.4 \\ &= 14\% \end{aligned}$$

$$\begin{aligned} K_d &= I (1 - t) \\ &= 8 (1 - 0.30) \\ &= 5.6\% \end{aligned}$$

$$\begin{aligned} \text{WACC} &= \frac{(500 \times 14) + (250 \times 5.6)}{750} \\ &= 11.2\% \end{aligned}$$

(ii) Calculation of Economic Value Added

NOPAT

$$\text{Sales} = ₹ 1,000 \text{ lacs}$$

$$\text{(-) Operating Cost } [620 - 20] = ₹ 600 \text{ lacs}$$

$$\text{EBIT} = ₹ 400 \text{ lacs}$$

$$(-) \text{ Tax @ } 30\% = 120$$

$$\text{NOPAT} = 280$$

$$\text{EVA} = \text{NOPAT} - C/E \times \text{WACC}$$

$$= 280 - 750 \times 11.2\%$$

$$= 196$$

(iii) Calculation of Market Value Added

$$\text{MVA} = \text{Market Value of Firm} - \text{Book Value of Firm}$$

$$= 900 - 750$$

$$= 150 \text{ lacs}$$

Question – 04

Delta Ltd.'s current financial year's income statement reports its net income as ₹ 15,00,000. Delta's marginal tax rate is 40% and its interest expense for the year was ₹ 15,00,000. The company has ₹ 1,00,00,000 of invested capital, of which 60% is debt. In addition, Delta Ltd. tries to maintain a Weighted Average Cost of Capital (WACC) of 12.6%.

- (i) Compute the operating income or EBIT earned by Delta Ltd. in the current year.
- (ii) What is Delta Ltd.'s Economic Value Added (EVA) for the current year?
- (iii) Delta Ltd. has 2,50,000 equity shares outstanding. According to the EVA you computed in (ii), how much can Delta pay in dividend per share before the value of the company would start to decrease? If Delta does not pay any dividends, what would you expect to happen to the value of the company?

(SM TYK – 13)**Solution:**

$$(i) \quad \text{Taxable income} = \text{Net Income} / (1 - 0.40)$$

$$\text{or, Taxable income} = ₹ 15,00,000 / (1 - 0.40) = ₹ 25,00,000$$

Again, taxable income = EBIT – Interest

$$\begin{aligned} \text{or, EBIT} &= \text{Taxable Income} + \text{Interest} \\ &= ₹ 25,00,000 + ₹ 15,00,000 \\ &= ₹ 40,00,000 \end{aligned}$$

$$\begin{aligned} \text{(ii) EVA} &= \text{EBIT} (1 - T) - (\text{WACC} \times \text{Invested capital}) \\ &= ₹ 40,00,000 (1 - 0.40) - (0.126 \times ₹ 1,00,00,000) \\ &= ₹ 24,00,000 - ₹ 12,60,000 \\ &= ₹ 11,40,000 \end{aligned}$$

$$\begin{aligned} \text{(iii) EVA Dividend} &= ₹ 11,40,000 / 2,50,000 \\ &= ₹ 4.56 \end{aligned}$$

If Delta Ltd. does not pay a dividend, we would expect the value of the firm to increase because it will achieve higher growth, hence a higher level of EBIT. If EBIT is higher, then all else equal, the value of the firm will increase.

Question – 05

With the help of the following information of Jatayu Limited compute the Economic Value Added:

Capital Structure	Equity capital ₹ 160 Lakhs Reserves and Surplus ₹140lakhs 10% Debentures ₹ 400 lakhs
Cost of equity	14%
Financial Leverage	1.5 times
Income Tax Rate	30%

(SM TYK – 09)

Solution:

$$\begin{aligned} \text{Financial Leverage} &= \text{PBIT} / \text{PBT} \\ 1.5 &= \text{PBIT} / (\text{PBIT} - \text{Interest}) \\ 1.5 &= \text{PBIT} / (\text{PBIT} - 40) \end{aligned}$$

$$\begin{aligned}
 1.5 (\text{PBIT} - 40) &= \text{PBIT} \\
 1.5 \text{PBIT} - 60 &= \text{PBIT} \\
 1.5 \text{PBIT} - \text{PBIT} &= 60 \\
 0.5 \text{PBIT} &= 60 \\
 \text{or PBIT } 0.5 &= \frac{60}{0.5} = ₹ 120 \text{ lakhs}
 \end{aligned}$$

NOPAT = PBIT – Tax = ₹ 120 lakhs (1 – 0.30) = ₹ 84 lakhs.

Weighted Average Cost of Capital (WACC)

$$= 14\% \times (300/700) + (1 - 0.30) \times (10\%) \times (400/700) = 10\%$$

$$\text{EVA} = \text{NOPAT} - (\text{WACC} \times \text{Total Capital})$$

$$\text{EVA} = ₹ 84 \text{ lakhs} - 0.10 \times ₹ 700 \text{ lakhs}$$

$$\text{EVA} = ₹ 14 \text{ lakhs}$$

Question – 06

The following information is given for 3 companies that are identical except for their capital structure:

	Orange	Grape	Apple
Total invested capital	1,00,000	1,00,000	1,00,000
Debt/assets ratio	0.8	0.5	0.2
Shares outstanding	6,100	8,300	10,000
Pre tax cost of debt	16%	13%	15%
Cost of equity	26%	22%	20%
Operating Income (EBIT)	25,000	25,000	25,000

The tax rate is uniform 35% in all cases.

- (i) Compute the Weighted average cost of capital for each company.
- (ii) Compute the Economic Valued Added (EVA) for each company.
- (iii) Based on the EVA, which company would be considered for best investment? Give reasons.

- (iv) If the industry PE ratio is 11x, estimate the price for the share of each company.
- (v) Calculate the estimated market capitalization for each of the Companies.

(SM TYK – 12 & MTP April – 2022)

Solution:

(i) Working for calculation of WACC

	Orange	Grape	Apple
Total debt	80,000	50,000	20,000
Post tax Cost of debt	10.40%	8.45%	9.75%
Equity fund	20,000	50,000	80,000

WACC

Orange: $(10.4 \times 0.8) + (26 \times 0.2) = 13.52\%$

Grape: $(8.45 \times 0.5) + (22 \times 0.5) = 15.225\%$

Apple: $(9.75 \times 0.2) + (20 \times 0.8) = 17.95\%$

(ii)

	Orange	Grape	Apple
WACC	13.52	15.225	17.95
EVA = [EBIT (1-T) (WACC × Invested Capital)]	2,730	1,025	-1,700

- (iii)** Orange would be considered as the best investment since the EVA of the company is highest and its weighted average cost of capital is the lowest

(iv) Estimated Price of each company shares

	Orange	Grape	Apple
EBIT (₹)	25,000	25,000	25,000
Interest (₹)	12,800	6,500	3,000
Taxable Income (₹)	12,200	18,500	22,000
Tax 35% (₹)	4,270	6,475	7,700
Net Income (₹)	7,930	12,025	14,300
(÷)Shares	6,100	8,300	10,000
EPS (₹)	1.30	1.45	1.43

Stock price (EPS × PE Ratio)	14.30	15.95	15.73
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Since the three entities have different capital structures they would be exposed to different degrees of financial risk. The PE ratio should therefore be adjusted for the risk factor.

(v) Market Capitalization

Estimated Stock Price (₹)	14.30	15.95	15.73
No. of shares	6,100	8,300	10,000
Estimated Market Cap (₹)	87,230	1,32,385	1,57,300

Question – 07

Herbal Gyan is a small but profitable producer of beauty cosmetics using the plant Aloe Vera. This is not a high-tech business, but Herbal’s earnings have averaged around ₹ 12 lakh after tax, largely on the strength of its patented beauty cream for removing the pimples.

The patent has eight years to run, and Herbal has been offered ₹ 40 lakhs for the patent rights. Herbal’s assets include ₹ 20 lakhs of working capital and ₹ 80 lakhs of property, plant, and equipment. The patent is not shown on Herbal’s books. Suppose Herbal’s cost of capital is 15 percent. What is its Economic Value Added (EVA)?

(SM TYK – 15)

Solution:

EVA = Income earned – (Cost of capital × Total Investment)

Total Investments

Particulars	Amount
Working Capital	₹ 20 lakhs
Property, Plant, and equipment	₹ 80 lakhs
Patent rights	₹ 40 lakhs
Total	₹ 140 lakhs

Cost of Capital 15%

$$\begin{aligned} \text{EVA} &= ₹ 12 \text{ lakh} - (0.15 \times ₹ 140 \text{ lakhs}) \\ &= ₹ 12 \text{ lakh} - ₹ 21 \text{ lakh} \\ &= -₹ 9 \text{ lakh} \end{aligned}$$

Thus, Herbal Gyan has a negative EVA of ₹ 9 lakhs.

Question – 08

Constant Engineering Ltd. has developed a high tech product which has reduced the Carbon emission from the burning of the fossil fuel. The product is in high demand. The product has been patented and has a market value of ₹ 100 Crore, which is not recorded in the books. The Net Worth (NW) of Constant Engineering Ltd. is ₹ 200 Crore. Long term debt is ₹ 400 Crore. The product generates a revenue of ₹ 84 Crore. The rate on 365 days Government bond is 10 percent per annum. Market portfolio generates a return of 12 percent per annum. The stock of the company moves in tandem with the market. Calculate Economic Value added of the company.

(SM TYK – 16 & Exam May – 2018) (5 Marks)

Solution:

$$\text{EVA} = \text{Income Earned} - (\text{Cost of Capital} \times \text{Total Investment})$$

Total Investments

	Amount (₹ Crore)
Net Worth	200.00
Long Term Debts	400.00
Patent Rights	100.00
Total	700.00

$$\begin{aligned} \text{WACC} \quad (k_0) &= k_e \times \frac{E}{E + D} + k_d \times \frac{D}{E + D} \\ &= 12 \times \frac{300}{700} + 10 \times \frac{400}{700} \\ &= 5.14\% + 5.71\% \\ &= 10.85\% \end{aligned}$$

$$\text{EVA} = \text{Profit Earned} - \text{WACC} \times \text{Invested Capital}$$

$$= ₹ 84 \text{ crore} - 10.85\% \times ₹ 700 \text{ crore}$$

$$= ₹ 8.05 \text{ crore}$$

Question – 09

Compute EVA of A Ltd. with the following information:

All Figure are in ₹ lac

Profit & Loss Statement		Balance Sheet	
Revenue	1,000	PPE	1,000
Direct Costs	-390	Current Assets	300
Selling, General & Admin. Exp. (SGA)	-200		1,300
EBIT	410	Equity	700
Interest	-10	Reserves	100
EBT	400	Non-Current Borrowings	100
Tax Expense	-120	Current Liabilities & Provisions	400
EAT	280		1,300

Assume Bad Debts provision of ₹ 20 lac is included in the SGA, and same amount is reduced from the trade receivables in current assets.

Also assume that the pre-tax Cost of Debt is 12%, Tax Rate is 30% and Cost of Equity (i.e. shareholder's expected return) is 8.45%.

Solution:

(1) WACC

$$\text{Equity (700 + 100)} = 800$$

$$\text{Debt} = 100$$

$$= 900$$

$$K_e = 8.45\%$$

$$K_d = 12 (1 - 0.30)$$

$$= 8.40\%$$

$$\text{WACC} = \frac{(800 \times 8.45) + (100 \times 8.40)}{900}$$

= 8.44%

(2) NOPAT

EBIT	410
(-)Tax @ 30%	123
NOPAT	<u>287</u>
(+) Provision	20
Adjusted NOPAT	<u>307</u>

(3) Adjusted Capital Invested

Equity	= 800
Debt	= 100
	<u>= 900</u>
(+) Provision	= 20
	<u>= 920</u>

EVA = $307 - 920 \times 8.44\%$

= ₹ 229.35 lacs

PART II: VALUATION OF BUSINESS**Question – 10**

Following information are available in respect of XYZ Ltd. which is expected to grow at a higher rate for 4 years after which growth rate will stabilize at a lower level:

Base year information:

Revenue	- ₹ 2,000 crores
EBIT	- ₹ 300 crores
Capital expenditure	- ₹ 280 crores
Depreciation	- ₹ 200 crores

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

	High Growth	Stable Growth
Growth in Revenue & EBIT	20%	10%
Growth in Capital Expenditure and Depreciation	20%	Capital expenditure are offset by depreciation
Risk Free Rate	10%	9%
Equity Beta	1.15	1
Market Risk Premium	6%	5%
Pre Tax Cost of Debt	13%	12.86%
Debt Equity Ratio	1 : 1	2 : 3

For all time, working capital is 25% of revenue and corporate tax rate is 30%.
What is the value of the firm?

(SM TYK – 06 & MTP March – 2022)

Solution:

Working Note 1: WACC

High Growth Period

$$K_e = 10 + 6 \times 1.15 = 16.9\%$$

$$K_d = 13 (1 - 0.30) = 9.1\%$$

$$K_0 = (16.9 \times 0.5) + (9.1 \times 0.5) = 13\%$$

Stable Growth Period

$$K_e = 9 + 5 \times 1 = 14\%$$

$$K_d = 12.86 (1 - 0.30) = 9\%$$

$$K_0 = (14 \times 3/5) + (9 \times 2/5) = 12\%$$

Working Note 2: FCFF

	1	2	3	4	5
NOPAT = EBIT (1 - t) = 300 (1 - 0.30) = 210	252	302.40	362.88	435.456	479.00
(-) [C.E - Depreciation] = 80	96	115.20	138.24	165.89	-
(-) Δ in Working Capital (W.N. 3)	100	120	144	172.80	103.68
FCFF	56	67.20	80.64	96.766	375.32

$$TV_3 = \frac{FCFF_4}{K_0 - g}$$

$$= \frac{375.32}{0.12 - 0.10} = 18,766 \text{ Cr.}$$

$$V_B (13\%) = (56 \times 0.885) + (67.20 \times 0.783) + (80.64 \times 0.693) + (96.766 \times 0.613) + (18,766 \times 0.613)$$

$$= 11,720.937 \text{ Cr.}$$

Working Note 3: Change in Working Capital

	0	1	2	3	4	5
Revenue	2,000	2,400	2,880	3,456	4,147.20	4,561.92
Working Capital @ 25%	500	600	720	864	1036.80	1140.48
Δ WC	-	100	120	144	172.80	103.68

Question - 11

Following information is given in respect of WXY Ltd., which is expected to grow at a rate of 20% p.a. for the next three years, after which the growth rate will stabilize at 8% p.a. normal level, in perpetuity.

	For the year ended March 31, 2014
Revenues	₹ 7,500 Crores
Cost of Goods Sold (COGS)	₹ 3,000 Crores
Operating Expenses	₹ 2,250 Crores
Capital Expenditure	₹ 750 Crores
Depreciation (included in Operating Expenses)	₹ 600 Crores

During high growth period, revenues & Earnings before Interest & Tax (EBIT) will grow at 20% p.a. and capital expenditure net of depreciation will grow at 15% p.a. From year 4 onwards, i.e. normal growth period revenues and EBIT will grow at 8% p.a. and incremental capital expenditure will be offset by the depreciation. During both high growth & normal growth period, net working capital requirement will be 25% of revenues.

The Weighted Average Cost of Capital (WACC) of WXY Ltd. is 15%.

Corporate Income Tax rate will be 30%.