

**PAPER – 20: FINANCIAL ANALYSIS & BUSINESS VALUATION**

## Answer to PTP\_Final\_Syllabus 2012\_Jun'2015\_Set 3

The following table lists the learning objectives and the verbs that appear in the syllabus learning aims and examination questions:

	<b>Learning objectives</b>	<b>Verbs used</b>	<b>Definition</b>
<b>LEVEL C</b>	KNOWLEDGE  What you are expected to know	List	Make a list of
		State	Express, fully or clearly, the details/facts
		Define	Give the exact meaning of
	COMPREHENSION  What you are expected to understand	Describe	Communicate the key features of
		Distinguish	Highlight the differences between
		Explain	Make clear or intelligible/ state the meaning or purpose of
		Identify	Recognize, establish or select after consideration
	APPLICATION  How you are expected to apply your knowledge	Illustrate	Use an example to describe or explain something
		Apply	Put to practical use
		Calculate	Ascertain or reckon mathematically
		Demonstrate	Prove with certainty or exhibit by practical means
		Prepare	Make or get ready for use
		Reconcile	Make or prove consistent/ compatible
		Solve	Find an answer to
	ANALYSIS  How you are expected to analyse the detail of what you have learned	Tabulate	Arrange in a table
		Analyse	Examine in detail the structure of
		Categorise	Place into a defined class or division
		Compare and contrast	Show the similarities and/or differences between
		Construct	Build up or compile
		Prioritise	Place in order of priority or sequence for action
	SYNTHESIS  How you are expected to utilize the information gathered to reach an optimum conclusion by a process of reasoning	Produce	Create or bring into existence
		Discuss	Examine in detail by argument
		Interpret	Translate into intelligible or familiar terms
EVALUATION  How you are expected to use your learning to evaluate, make decisions or recommendations	Decide	To solve or conclude	
	Advise	Counsel, inform or notify	
	Evaluate	Appraise or asses the value of	
		Recommend	Propose a course of action

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### Paper – 20: Financial Analysis & Business Valuation

Time Allowed: 3 hours

Full Marks: 100

This paper contains 4 questions, representing two separate sections as prescribed under syllabus 2012. All questions are compulsory, subject to the specific guidance/ instructions stated against every question. All workings, wherever necessary, must form a part of your answer. Assumptions, if any, should be clearly stated.

**Question No. 1.** (Answer all questions. Each question carries 10 marks)

1(a). The following is the Balance Sheet of ABC Ltd. for two years.

	As at 31.03.2014	As at 31.03.2015
(₹ in lakhs)		
<b>Equity &amp; Liabilities:</b>		
<b>Shareholders' Fund:</b>		
Share capital	1,393.21	1,453.39
Equity share suspense	60.14	—
Equity share warrants	—	1,682.40
Reserve & surplus	62,513.78	78,312.81
<b>Non-current Liabilities:</b>		
Secured loans	9,569.12	6,600.17
Unsecured loans	18,256.61	29,879.51
Deferred tax liabilities	6,982.02	7,872.54
<b>Current liabilities:</b>		
Other current liabilities	16,865.53	21,045.47
Provisions	1,712.87	2,992.62
	1,17,353.28	1,49,838.91
<b>Assets:</b>		
<b>Non-current Assets:</b>		
Net fixed assets	63,660.46	61,883.63
Capital work-in-progress	7,528.13	23,005.84
Investments	16,251.34	22,063.60
<b>Current assets:</b>		
Inventories	12,136.51	14,247.54
Sundry debtors	3,732.42	6,227.58
Cash and bank balance	1,835.35	4,280.05
Other current assets	3.07	72.54
Loans and advances	12,206.00	18,058.13
	1,17,353.28	1,49,838.91

You are required to answer the following:

- (i) Prepare the Common-size Balance Sheet of ABC Ltd.
- (ii) Analyse and interpret the result.

[5+5]

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Answer to 1(a):

(i) Common-size Balance Sheet of ABC Ltd.

(₹ in lakhs)

	As at 31.03.2014	% of total	As at 31.03.2015	% of total
<b>Equity &amp; Liabilities</b>				
Shareholders' Fund:				
Share capital	1,393.21	1.187	1,453.39	0.970
Equity share suspense	60.14	0.051	—	
Equity share warrants	—		1,682.40	1.123
Reserve & surplus	62,513.78	53.270	78,312.81	52.265
Non-current Liabilities:				
Secured loans	9,569.12	8.154	6,600.17	4.405
Unsecured loans	18,256.61	15.557	29,879.51	19.941
Deferred tax liabilities	6,982.02	5.950	7,872.54	5.254
Current liabilities:				
Other current liabilities	16,865.53	14.372	21,045.47	14.045
Provisions	1,712.87	1.460	2,992.62	1.997
	1,17,353.28	100.00	1,49,838.91	100.00
<b>Assets:</b>				
Non-current Assets:				
Net fixed assets	63,660.46	54.247	61,883.63	41.300
Capital work-in-progress	7,528.13	6.415	23,005.84	15.354
Investments	16,251.34	13.848	22,063.60	14.725
Current assets:				
Inventories	12,136.51	10.342	14,247.54	9.509
Sundry debtors	3,196.42	2.724	6,227.58	4.156
Cash and bank balance	2,371.35	2.021	4,280.05	2.856
Other current assets	3.07	0.003	72.54	0.048
Loans and advances	12,206.00	10.401	18,058.13	12.052
	1,17,353.28	100.00	1,49,838.91	100.00

(ii) Analysis and Interpretation:

1. The proportion of unsecured loans to total of balance sheet has increased from 15.56% to 19.94%.
2. The proportion of secured loans to total of balance sheet has fallen from 8.15% to 4.405% due to redemption of non-convertible debentures and repayment of term loans.
3. The reserves and surplus have stayed flat at 53.27% at the end of both accounting years under reference.
4. Although the proportion of current liabilities in total share capital and liabilities has decreased from 14.37% to 14.05% but provisions have slightly increased from 1.46% to 2.00%.
5. The deferred tax liabilities have decreased from 5.95% to 5.25%.
6. The proportion of net fixed assets have fallen from 54.25% to 41.3%.
7. The capital work-in-progress has increased from 6.42% to 15.35%.
8. The investments have increased by 1% over the previous accounting year.
9. The current assets have increased from 15.09% to 16.57%.
10. The loans and advances have increased from 10.4% to 12.05%.

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1(b). The following are condensed comparative financial statements, of Rajarshi Ltd., for the three years ended 31<sup>st</sup> March, 2013, 2014 and 2015.

	2014-15 (₹)	2013-14 (₹)	2012-13 (₹)
<b>Current Assets:</b>			
Bank	20,500	7,600	17,000
Debtors	38,000	30,000	20,000
Stock	60,000	40,000	30,000
Prepaid Expenses	1,500	2,400	3,000
<b>Total Current Assets</b>	<b>1,20,000</b>	<b>80,000</b>	<b>70,000</b>
<b>Non-current Assets:</b>			
Plant and Equipment	2,60,000	1,50,000	76,000
<b>Total Assets</b>	<b>3,80,000</b>	<b>2,30,000</b>	<b>1,46,000</b>
<b>Current Liabilities:</b>			
Creditors	98,000	78,000	48,500
Provision for Income Tax	2,000	2,000	1,500
<b>Total Current Liabilities</b>	<b>1,00,000</b>	<b>80,000</b>	<b>50,000</b>
<b>Non-current Liabilities:</b>			
Debentures	50,000	50,000	---
<b>Shareholders' Fund:</b>			
Equity Share Capital (₹ 100 shares)	2,00,000	80,000	80,000
Profit and Loss Account	30,000	20,000	16,000
<b>Total Liabilities</b>	<b>3,80,000</b>	<b>2,30,000</b>	<b>1,46,000</b>

### Comparative Operating Statement For the three years ended on 31<sup>st</sup> March,

	2015 (₹)	2014 (₹)	2013 (₹)
Sales	2,10,000	1,20,000	1,00,000
Cost of Sales	1,57,500	80,000	55,000
Gross Profit	52,500	40,000	45,000
General and Selling Expenses	42,500	36,000	37,000
Net Profit	10,000	4,000	8,000

**Additional information:**

- (i) The company's closing inventory on 31<sup>st</sup> March, 2012 was ₹ 10,000.
- (ii) Credit terms are net 60 days from the date of invoice.

You are required to calculate the following ratios with brief comments thereon:

- (1) Current ratio, (2) Acid-test ratio, (3) Inventory turnover ratio, (4) Debtors' collection period (or average age of outstanding), (5) Gross profit margin percentage, (6) Earnings per share, and (7) Fixed assets to shareholders' equity. [10]

**Answer to 1(b):**

- (1) Current Ratio:

	2012-13	2013-14	2014-15
$\frac{\text{Current Assets}}{\text{Current Liabilities}}$	$\frac{₹ 70,000}{50,000} = 1.4$	$\frac{₹ 80,000}{80,000} = 1$	$\frac{₹ 1,20,000}{1,00,000} = 1.2$

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The liquidity position of the company is not good. Although the current assets have increased every year under consideration but the current liabilities have also increased. So, it can be said that the current assets have not been used properly to maintain the liquidity position.

(2) Acid Test Ratio:

	2012-13	2013-14	2014-15
$\frac{\text{Quick Assets}}{\text{Current Liabilities}}$	$\frac{\text{₹ } 37,000}{50,000} = 0.74$	$\frac{\text{₹ } 37,600}{80,000} = 0.47$	$\frac{\text{₹ } 58,500}{1,00,000} = 0.585$

Working capital position is not satisfactory. Additional funds raised are invested in fixed assets instead of providing necessary working capital. The company may not be in a position to meet its obligations in time.

(3) Gross Profit Ratio:

	2012-13	2013-14	2014-15
$\frac{\text{Gross Profit}}{\text{Sales}} \times 100$	$\frac{\text{₹ } 45,000}{1,00,000} \times 100 = 45\%$	$\frac{\text{₹ } 40,000}{1,20,000} \times 100 = 33\frac{1}{3}\%$	$\frac{\text{₹ } 52,000}{2,10,000} \times 100 = 25\%$

Gross Profit ratio is declining significantly. This may be due to disposal of stocks at reduced selling prices. Increased investment in the business had not resulted in increase in profits.

(4) Inventory Turnover:

	2012-13	2013-14	2014-15
$\frac{\text{Cost of goods sold}}{\text{Average Stock}}$	$\frac{\text{₹ } 55,000}{20,000} = 2.75$	$\frac{\text{₹ } 80,000}{35,000} = 2.29$	$\frac{\text{₹ } 1,57,500}{50,000} = 3.15$

The movement of stock is very slow. It seems there is sufficient number of unsaleable items of inventories.

(5) Debt Collection Period:

	2012-13	2013-14	2014-15
$\frac{\text{Accounts receivable}}{\text{Average daily credit sales}}$	$\frac{\text{₹ } 20,000}{1,00,000} \times 365$ = 73 days	$\frac{\text{₹ } 30,000}{1,20,000} \times 365$ = 91 days	$\frac{\text{₹ } 38,000}{2,10,000} \times 365$ = 66 days

The debt collection period is more than allowed as per terms of credit. It is declining each year but still more credit control is required.

(6) Earnings per Share:

	2012-13	2013-14	2014-15
$\frac{\text{Net Profit available for equity shareholders}}{\text{Number of equity shares}}$	$\frac{8,000}{800} = \text{₹ } 10$	$\frac{4,000}{800} = \text{₹ } 5$	$\frac{10,000}{2,000} = \text{₹ } 5$

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Earnings per share have decreased in 2013-14 by 50% as compared to 2012-13. This is quite alarming.

(7) Fixed Assets to Shareholders' Equity:

	2012-13	2013-14	2014-15
Fixed Assets	76,000	1,50,000	2,60,000
Shareholders' funds	96,000	1,00,000	2,30,000
	$\frac{76,000}{96,000} = 0.79$	$\frac{1,50,000}{1,00,000} = 1.5$	$\frac{2,60,000}{2,30,000} = 1.13$

Funds raised by issue of shares and debentures have been invested in fixed assets. However, such investment has not resulted in increase in the earnings of the company. It shows that fixed assets have not been effectively utilized.

**Question No. 2.** (Answer **any two** questions. Each question carries **15 marks**)

**2(a)(i).** A 10 years bond of ₹1,000 has an annual rate of interest of 12 per cent. The interest is paid half-yearly. Calculate the value of the bond if the required rate of return is (I) 12 per cent and (II) 16 per cent? **[4]**

**Answer to 2(a)(i):**

(I) Given the required rate of return of 12 per cent, the value of the bond is —

$$B_0 = \sum_{t=1}^{2 \times n} \frac{1/2(\text{INT}_t)}{(1+k_d/2)^t} + \frac{B_n}{(1+k_d/2)^{2 \times n}}$$

$$= \sum_{t=1}^{2 \times 10} \frac{1/2 \times (120)}{(1+0.12/2)^t} + \frac{1,000}{(1+0.12/2)^{2 \times 10}}$$

$$= \sum_{t=1}^{20} \frac{60}{(1.06)^t} + \frac{1,000}{(1.06)^{20}}$$

$$= ₹ 60 \times \text{Annuity factor (6%, 20)} + ₹ 1,000 \times \text{PV factor (6%, 20)}$$

$$= ₹ 60 \times 11.4699 + ₹ 1,000 \times 0.3118 = ₹ 688.19 + ₹ 311.80$$

$$= ₹ 999.99 \text{ or } ₹ 1,000.$$

(II) If the required rate of return were 16 per cent, then the value of the bond would be —

$$B_0 = \sum_{t=1}^{20} \frac{60}{(1.08)^t} + \frac{1,000}{(1.08)^{20}}$$

$$= ₹ 60 \times \text{Annuity factor (8%, 20)} + ₹ 1,000 \times \text{PV factor (8%, 20)}$$

$$= ₹ 60 \times 9.8181 + ₹ 1,000 \times 0.2145 = ₹ 589.09 + ₹ 214.50$$

$$= ₹ 803.59.$$

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2(a)(ii). Amro Ltd. is evaluating a proposal to acquire new equipment. The new equipment would cost ₹ 3.5 million and was expected to generate cash inflows of ₹ 4,70,000 a year for nine years. After that point, the equipment would be obsolete and have no significant salvage value. The company's weighted average cost of capital is 16%.

The management of Amro Ltd. seemed to be convinced with the merits of the investment but was not sure about the best way to finance it. Amro Ltd. could raise the money by issuing a secured eight-year note at an interest rate of 12%. However, Amro Ltd. had huge tax loss carry forwards from a disastrous foray into foreign exchange options. As a result, the company was unlikely to be a position of tax-paying for many years. The CEO of Amro Ltd. thought it better to lease the equipment than to buy it. The proposals for lease have been obtained from Kiran Leasing Ltd. and Megha Leasing Ltd. The terms of the lease are as under:

	Kiran Leasing Ltd.	Megha Leasing Ltd.
Lease period offered	9 years	7 years
Number of lease rentals payments with initial lease payment due on entering the lease contract	10	8
Annual lease rentals	₹ 5,44,300	₹ 6,19,400
Lease terms equivalent to borrowing cost (Claim of lessor)	11.5% p.a.	11.41% p.a.
Leasing terms proposal coverage	Entire ₹ 3.5 million cost of equipment	Entire ₹ 3.5 million cost of equipment
Tax rate	35%	35%

Both the leasing companies were in a tax-paying position and write-off their investment in new equipment using following rate:

Year	1	2	3	4	5	6
Depreciation	20%	32%	19.20%	11.52%	11.52%	5.76%

You are required to answer the following:

- (1) Calculate the Net Present Value (NPV) to Amro Ltd. of the two lease proposals.
- (2) Discuss whether the new equipment has a positive NPV with (I) ordinary financing, (II) lease financing?
- (3) Calculate the NPVs of the leases from the lessors' viewpoint. Is there a chance that they could offer more attractive terms?
- (4) Evaluate the terms presented by each of the lessor.

[2+2+6+1]

**Answer to 2(a)(ii):**

- (1) NPV (Net Present Value) to Amro Ltd. of Kiran Leasing Ltd. – lease proposal:

Investment decision: Present value of operating cash inflows

Present value at 16% = ₹ 4,70,000 × 4.6065 = ₹ 21,65,055 (A)

Financing decision: Present value of cash outflows

Present value at 12% = ₹ 5,44,300 + ₹ 5,44,300 × 5.3282 = ₹ 34,44,439 (B)

Hence, Net Present Value = (A)-(B) = (₹ 12,79,384)

NPV to Amro Ltd. of Megha Leasing Ltd. – lease proposal:

Investment decision: Present value of operating cash inflows

Present value at 16% = ₹ 4,70,000 × 4.6065 = ₹ 21,65,055 (A)

Financing decision: Present value of cash outflows

Present value at 12% = ₹ 6,19,400 + ₹ 6,19,400 × 4.5638 = ₹ 34,46,218 (B)



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Hence, Net Present Value = (A)-(B) = (₹ 12,81,163)

- (2) NPV of new equipment with ordinary financing investment decision: Present value of operating cash inflows

Present value at 16% = ₹ 4,70,000 × 4.6065 = ₹ 21,65,055 (A)

Financing decision: Present value of cash outflows = ₹ 35,00,000 (B)

Hence, Net Present Value = (A)-(B) = (₹ 13,34,945)

Comment: The company has a negative NPV with ordinary financing as well as lease financing.

- (3) Since, the lease terms are equivalent to the borrowing costs as per the claim of lessor, hence the borrowing cost of 12% is considered.

NPV to Kiran Leasing Ltd.

(₹ '000)

Year	Equipment cost (₹)	Depreciation (₹)	Depreciation tax shield (₹)	After tax lease payment (₹)	After tax cash flows (₹)	Present value factor at 7.8%	After tax cash flows (Present value) (₹)
0	(3,500)	700	245	353.795	(2,901.21)	1	(2,901.21)
1		1,120	392	353.795	745.795	0.928	692.0978
2		672	235.2	353.795	588.995	0.861	507.1247
3		403.2	141.12	353.795	494.915	0.798	394.9422
4		403.2	141.12	353.795	494.915	0.74	366.2371
5		201.6	70.56	353.795	424.355	0.687	291.5319
6				353.795	353.795	0.637	225.3674
7				353.795	353.795	0.591	209.0928
8				353.795	353.795	0.548	193.8797
9				353.795	353.795	0.509	180.0817
Total						7.299	159.1453

Discount rate = 12% × (1 - 0.35) = 7.8%

NPV = ₹ 1,59,145.

The NPV of Kiran Leasing Ltd. is positive. They could reduce the lease terms by ₹ 1,59,145 divided by cumulative PV factor at 7.8% (7.299) multiplied by (1-0.35), i.e. ₹ 33,544.11 to make their proposal more attractive.

NPV to Megha Leasing Ltd.

(₹ '000)

Year	Equipment cost (₹)	Depreciation (₹)	Depreciation tax shield (₹)	After tax lease payment (₹)	After tax cash flows (₹)	Present value factor at 7.8%	After tax cash flows (Present value) (₹)
0	(3,500)	700	245	402.61	(2,852.39)	1	(2,852.39)
1		1,120	392	402.61	794.61	0.928	737.3981
2		672	235.2	402.61	637.81	0.861	549.1544
3		403.2	141.12	402.61	543.73	0.798	433.8965
4		403.2	141.12	402.61	543.73	0.74	402.3602
5		201.6	70.56	402.61	473.17	0.687	325.0678
6				402.61	402.61	0.637	256.4626
7				402.61	402.61	0.591	237.9425

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Total						6.242	89.8921
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NPV = ₹ 89,892

Megha Leasing Ltd. could improve the proposal by reducing the lease terms by ₹ 89,892 divided by cumulative PV factor at 7.8% (6.242) multiplied by (1-0.35), i.e. ₹ 22,155.62 to make their proposal more attractive.

(4) From Amro Ltd.'s point of view, the leasing terms offered by Kiran Leasing Ltd. gives the least NPV. Amro Ltd. is not getting tax shield on leasing, depreciation and interest because of heavy losses incurred in the earlier years. With proper negotiations, the leasing terms can be reduced marginally.

**2(b)(i). Consider the following information for AB Enterprise:**

	₹ in lakh
<b>EBIT</b>	<b>1,120</b>
<b>PBT</b>	<b>320</b>
<b>Fixed cost</b>	<b>700</b>

**Calculate percentage change in earning per share if sales increased by 6 per cent. [3]**

**Answer to 2(b)(i):**

(1) Degree of operating leverage

$$\begin{aligned} \text{DOL} &= \frac{\text{Contribution}}{\text{EBIT}} = \frac{\text{EBIT} + \text{Fixed Cost}}{\text{EBIT}} \\ &= \frac{1,120 + 700}{1,120} = 1.625 \end{aligned}$$

(2) Degree of financial leverage

$$\text{DFL} = \frac{\text{EBIT}}{\text{PBT}} = \frac{1,120}{320} = 3.5$$

(3) Degree of combined leverage

$$\text{DCL} = \text{DOL} \times \text{DFL} = 1.625 \times 3.5 = 5.6875$$

Change in EPS can be calculated as:

$$\begin{aligned} \text{DCL} &= \frac{\% \text{Change in EPS}}{\% \text{Change in Sales}} \\ 5.6875 &= \frac{\% \text{Change in EPS}}{6} \end{aligned}$$

$$\% \text{ change in EPS} = 6 \times 5.6875 = 34.125\%$$

**2(b)(ii). The following are the financial statements for Ananda Co., for 2014-15:**

### Balance Sheet (Extracts) As on 31<sup>st</sup> March, 2015

Equity & Liabilities	₹	Assets	₹
<b>Shareholders' Fund:</b>		<b>Non-current assets:</b>	

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Preference share capital	2,80,000	Fixed assets, (net)	10,50,000
Equity share capital	1,40,000	Goodwill	1,40,000
Reserves	2,80,000	Current assets:	
Non-current liabilities:		Cash	70,000
Long-term debt	8,40,000	Debtors	3,50,000
Current liabilities:		Stock	4,90,000
Bills payable	2,80,000		
Creditors	1,40,000		
Outstanding expenses	40,000		
Provision for tax	1,00,000		
	21,00,000		21,00,000

### Profit and Loss A/c (Extracts) For the year ended 31<sup>st</sup> March, 2015

Sales:		
Cash		2,80,000
Credit		11,20,000
		14,00,000
Less: Expenses:		
Cost of goods sold	8,40,000	
Selling, administrative and general expenses	1,40,000	
Depreciation	98,000	
Interest on long-term debt	42,000	11,20,000
Profit before taxes		2,80,000
Taxes		1,40,000
Profit after taxes		1,40,000
Less: preference dividend		17,000
Net profit for equity shareholders		1,23,000
Add: Reserve at 1 <sup>st</sup> April, 2013		1,82,000
		3,05,000
Less: Dividend paid to equity shareholders		25,000
Reserve at 31 <sup>st</sup> March, 2014		2,80,000

The ratios for the years 2012-13 and 2013-14 for Ananda Company and their industry ratios are given below:

	2012-13	2013-14	Industry
Current ratio	2.54	2.10	2.30
Acid-test ratio	1.10	0.96	1.20
Debtors turnover	6.00	4.80	7.00
Stock turnover	3.80	3.05	3.85
Long-term debt to total capital	37%	42%	34%
Gross profit margin	38%	41%	40%
Net profit margin	18%	16%	15%
Return on equity	24%	29%	19%
Return on total assets	7%	6.8%	8%
Tangible assets turnover	0.80	0.70	1.00
Interest coverage	10	9	10

- (1) Calculate ratios for 2014-15 and evaluate the company's financial position.
- (2) Using relevant ratios, evaluate the decision which would be taken in the following situations:
  - (I) Ananda Co. wants to buy material of ₹70,000 on a three, month credit from A. (II) Ananda

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**co. offers to sell 70,000 additional shares for ₹112 per shares to a financial institution (III)  
Ananda co. wants to issue 16% debentures of ₹ 3,00,000 with a ten-years maturity.**

**[(6+3)+3]**

### Answer to 2(b)(ii):

(1) Calculation of ratios:

Sl No.	Ratio	2014-15
1.	Current ratio	$9,10,000/5,60,000 = 1.63$
2.	Acid-test ratio	$4,20,000/5,60,000 = 0.75$
3.	Debtors turnover	$11,20,000/3,50,000 = 3.20$
4.	Stock turnover	$8,40,000/4,90,000 = 1.71$
5.	Long-term debt-to-total capital ratio	$8,40,000/14,00,000^* = 60\%$
6.	Gross profit margin	$5,60,000/14,00,000 = 40\%$
7.	Net profit margin	$1,40,000/14,00,000 = 10\%$
8.	Return on equity	$1,23,000/2,80,000^* = 44\%$
9.	Return on total assets	$(2,80,000 + 42,000) (1 - 0.5) / 19,60,000^* = 8.2\%$
10.	Tangible assets turnover	$14,00,000/19,60,000^* = 0.71$
11.	Interest coverage	$3,22,000/42,000 = 7.67$

\* Intangible asset of ₹1,40,000 is excluded.

Evaluation of the company's position:

- (I) The liquidity position of the firm is falling, which is evident from ratios 1 to 4.
- (II) The gross profit margin is constant and matches with the industry average, but the net profit margin ratio is declining. The two ratios together imply that the firm's selling and administrative expenses, depreciation and interest charges are rising.
- (III) The decline in the net margin is partly due to rapid increase in debt (Ratio 5). This increase also explains why the return on equity (Ratio 8) has been rising while the return on assets is also rising (Ratio 9). The decline in the net margin and the return on assets can also be attributed to the decline in assets turnover (Ratio 10). The impact of the increase in debt and overall decline in profitability are also shown by reduction in the interest coverage (Ratio 11).

(2) Evaluation of the situations:

- (I) The primary focus of the analyst here will be on the liquidity of current assets. He/she would, therefore, concern himself/herself with Ratios 1 to 4. The credit may not be granted to Ananda Co. because of its deteriorating liquidity and lengthy terms of payment.
- (II) The analysis for the purpose of investing in shares generally concentrates on the return on equity and leverage ratios. The return on equity of Ananda Co. is increasing; therefore, the shares may be purchased. But the company has a high degree of leverage (Ratio 5) and its profitability (Ratios 8, 9, 10) is declining. This will go against the buying of shares. The decision will depend upon the financial institution's assessment about the company's future profitability and long-term financial conditions.
- (III) The company may find difficulty in selling the debentures. Already, it has a high leverage ratio. If the debentures are issued its leverage ratio will increase to 67 per cent ( $\text{₹ } 11,40,000 \div \text{₹ } 17,00,000$ ). The liquidity and the profitability of the firm are also declining.

## Answer to PTP\_Final\_Syllabus 2012\_Jun'2015\_Set 3

2(c)(i). From the following informations as contained in the Income Statement (extract) and Balance Sheet (extract), calculate — (1) cash receipts from customers, (2) cash payments to suppliers and employees, (3) cash flows from operating activities and (4) cash flows from financing activities.

Income Statement (extracts) for the year ended, 31<sup>st</sup> March, 2015

	₹	₹
Net Sales		40,32,000
Less: Cost of sales	31,68,000	
Depreciation	96,000	
Salaries & wages	3,84,000	
Operating expenses	1,28,000	
Provision for taxation	1,40,800	39,16,800
Net operating profit		1,15,200
Non-recurring income:		
Profit on sale of equipment		19,200
Profit for the year		1,34,400

Comparative Balance Sheet (extracts)

	As on 31.03.2014	As on 31.03.2015
<b>Fixed assets:</b>		
Land	76,800	1,53,600
Building, plant and equipments	5,76,000	9,21,600
<b>Current assets:</b>		
Cash and cash equivalents	96,000	1,15,200
Debtors	2,68,800	2,97,600
Stock	4,22,400	1,53,600
Advances	12,480	14,400
	14,52,480	16,56,000
<b>Capital</b>	5,76,000	7,10,400
Surplus in Profit & Loss A/c	2,42,880	2,62,080
Sundry creditors	3,84,000	3,74,400
Outstanding expenses	38,400	76,800
Income-tax payable	19,200	21,120
Accumulated depreciation on building, plant and equipments	1,92,000	2,11,200
	14,52,480	16,56,000

[2+3+1+2]

Answer to 2(c)(i):

(1) Cash receipts from customers

	₹
Sales	40,32,000
Add: Debtors at the beginning	2,68,800
	43,00,800
Less: Debtors at the end	2,97,600
Cash receipts from customers	40,03,200

## Answer to PTP\_Final\_Syllabus 2012\_Jun'2015\_Set 3

### (2) Cash payments to suppliers and employees

	₹	₹
Cost of goods sold		31,68,000
Add: Operating expenses		1,28,000
Salaries & wages		3,84,000
		36,80,000
Add: Creditors at the beginning	3,84,000	
Outstanding expenses at the beginning	38,400	
Stock at the end	1,53,600	
Advances at the end	14,400	5,90,400
		42,70,400
Less: Creditors at the end	3,74,400	
Outstanding expenses at the end	76,800	
Stock at the beginning	4,22,400	
Advances at the beginning	12,480	8,86,080
Cash paid to suppliers and employees		33,84,320

### (3) Cash flows from operating activities

	₹
Cash receipts from customers	40,03,200
Cash paid to suppliers and employees	(33,84,320)
Cash generated from operations	6,18,880
Income-tax paid (₹ 19,200 + ₹ 1,40,800 – ₹ 21,120)	(1,38,880)
Net cash inflow from operating activities	4,80,000

### (4) Cash flows from financing activities

	₹
Issue of share capital	1,34,400
Dividend paid	(1,15,200)
Net cash inflow from financing activities	19,200

### 2(c)(ii). Following figures have been extracted from the records of a company:

Year	2013-14	2014-15
<b>Sales (₹)</b>	<b>12,00,000</b>	<b>16,80,000</b>
<b>Cost of Goods Sold (₹)</b>	<b>8,00,000</b>	<b>12,60,000</b>
<b>Units Sold</b>	<b>40,000</b>	<b>60,000</b>

Analyse the reasons for changes in profit due to changes in sales quantity, cost price and selling price. [7]

#### Answer to 2(c)(ii):

Particulars	2013-14	2014-15	Changes
(a) Sales (₹)	12,00,000	16,80,000	(+ 4,80,000)
(b) Cost of Goods Sold (₹)	8,00,000	12,60,000	(+ 4,60,000)
Gross Profit (₹) [a - b]	4,00,000	4,20,000	(+ 20,000)
(c) Units Sold	40,000	60,000	(+ 20,000)
(d) Selling Price per Unit (₹) [a ÷ c]	30	28	(-)2

## Answer to PTP\_Final\_Syllabus 2012\_Jun'2015\_Set 3

(e) Cost Price per Unit (₹) [b ÷ c]	20	21	(+)	
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### Statement showing account for changes in Profit

Particulars	₹	₹
Changes in profit due to changes in sales:		
1. Increase in profit due to increase in quantity [Change in quantity x Base year's unit selling price = (60,000-40,000) x ₹30]		6,00,000
2. Decrease in profit due to decrease in unit selling price [Change in unit selling price x Base year's quantity = (₹28 - ₹30) x 40,000]		(80,000)
3. Decrease in profit due to change in price and quantity [Changes in unit selling price x Change in quantity = (₹28 - ₹30) x (60,000 - 40,000)]		(40,000)
		4,80,000
Changes in profit due to changes in cost:		
1. Decrease in profit due to increase in quantity [Change in quantity x Base year's unit cost price = (60,000 - 40,000) x ₹20]	(4,00,000)	
2. Decrease in profit due to increase in unit cost price [Change in unit cost price x Base year's quantity = (₹21 - ₹20) x 40,000]	(40,000)	
3. Decrease in profit due to change in price and quantity [Change in unit cost price x Change in quantity = (₹21 - ₹20) x (60,000 - 40,000)]	(20,000)	(4,60,000)
<b>Net Increase in Gross Profit</b>		<b>20,000</b>

**Note:** Here, the base year is 2013-14.

**Question No. 3.** (Answer all questions. Each question carries 10 marks)

**3 (a).** R Ltd is intending to acquire S Ltd. (by merger) and the following information are available in respect of both the companies.

Particulars	R Ltd.	S Ltd.
<b>Total current Earnings E</b>	<b>₹2,50,000</b>	<b>₹90,000</b>
<b>No. of Outstanding Shares</b>	<b>50,000</b>	<b>30,000</b>
<b>Market price per share</b>	<b>₹21</b>	<b>₹14</b>

- (1) Calculate the present EPS of both the companies?
- (2) If the proposed merger takes place then calculate the new earnings per share for R Ltd. (assuming the merger takes place by exchange of equity shares and the exchange ratio is based on the current market price)?
- (3) Compute the exchange ratio if S Ltd. wants to ensure the same earnings to members as before the merger took place? [2+4+4]

## Answer to PTP\_Final\_Syllabus 2012\_Jun'2015\_Set 3

### Answer to 3(a):

(1)  $EPS = \text{total earnings} / \text{No. of equity shares}$

$$EPS_{R LTD} = 2,50,000 / 50,000 = ₹5$$

$$EPS_{S LTD} = 90,000 / 30,000 = ₹3$$

(2) No. of shares S Ltd. shareholders will get in R Ltd. based on market prices of shares is as follows:

$$\text{Exchange Ratio} = \frac{14}{21} = \frac{2}{3} \text{ i.e. for every 3 shares of S Ltd, 2 shares of R Ltd}$$

$$\text{Total No. of shares of R Ltd issued} = \frac{14}{21} \times 30,000 = 20,000 \text{ shares}$$

$$\text{Total number of shares of R Ltd. after merger} = 50,000 + 20,000 = 70,000$$

$$\text{Total earnings of R Ltd. after merger} = ₹ (2,50,000 + 90,000) = ₹ 3,40,000$$

[Remember no synergy given]

$$\text{The new EPS of R Ltd. after merger} = \frac{₹3,40,000}{70,000} = ₹4.86$$

(3) Calculation of exchange ratio to ensure S Ltd. to earn the same before the merger took place: Both acquiring and acquired firm can maintain their EPS only if the merger takes place based on respective EPS.

$$\text{Exchange Ratio based on EPS} = 3/5 = 0.6$$

$$\text{Total shares of R Ltd. receivable by S Ltd. shareholders} = 0.6 \times 30,000 = 18,000$$

$$\text{Total No. of shares of R Ltd. after merger} = 50,000 + 18,000 = 68,000$$

$$\begin{aligned} \text{EPS after merger} &= \text{Total Earnings} / \text{Total no. of shares} \\ &= [₹2,50,000 + ₹90,000] / 68,000 = ₹5.00 \end{aligned}$$

$$\text{Total earnings after merger of S Ltd.} = ₹5 \times 18,000 = ₹90,000$$

**3 (b). The following are the summarized Balance Sheets of two Companies, R Ltd and S Ltd as on 31.03.2015**

Equity and Liability	R Ltd.	S Ltd.	Assets	R Ltd.	S Ltd.
<b>(1) Shareholders Fund:</b>			<b>(1) Non-Current Assets:</b>		
<b>(a) Share Capital</b>			<b>(a) Fixed Assets</b>		
Equity Share Capital	15,00,000	10,00,000	(i) Tangible Assets:	17,00,000	14,00,000
of ₹ 10 each			(ii) Intangible Assets:		
<b>(b) Reserve &amp; Surplus</b>			– Goodwill	2,00,000	1,00,000
– Reserve	3,00,000	2,00,000			
<b>(2) Non-Current Liabilities:</b>			<b>(2) Current Assets:</b>	8,00,000	6,00,000



## Answer to PTP\_Final\_Syllabus 2012\_Jun'2015\_Set 3

Long Term Borrowings – 10% Debenture	6,00,000	4,00,000			
(3) Current Liabilities: Trade Payables – Sundry Creditors	3,00,000	5,00,000			
<b>Total</b>	<b>27,00,000</b>	<b>21,00,000</b>	<b>Total</b>	<b>27,00,000</b>	<b>21,00,000</b>

### Additional Information:

#### 1. Assets are to be revalued as follows –

Particulars	R Ltd.	S Ltd.
Revaluation of Tangible Block	21,00,000	12,00,000
Revaluation of Current Assets	10,00,000	4,00,000

2. Average Annual Profits for three years before charging Debenture Interest = R Ltd ₹4,50,000; S Ltd ₹3,10,000.

3. Goodwill is to be valued at three year's purchase of Average Super Profits for three years. Such average is to be calculated after adjustment of depreciation at 10% on the amount of increase/ decrease on revaluation of fixed assets. In the case of S Ltd, claim of ₹10,000 which was omitted, is to be adjusted against its average profit. Income tax is to be ignored.

4. Normal profit on Capital Employed is to be taken at 12%, capital employed being considered on the basis of net revalued amount of tangible assets.

Ascertain the value of Goodwill of R Ltd and S Ltd.

[10]

Answer to 3(b):

#### 1. Computation of Capital Employed

Particulars	R Ltd	S Ltd
Revaluation of Tangible Block	21,00,000	12,00,000
Revaluation of Current Assets	10,00,000	4,00,000
Creditors	(3,00,000)	(5,00,000)
10% Debentures	(6,00,000)	(4,00,000)
Claim/ Expenses not recorded	-	(10,000)
<b>Equity Capital Employed</b>	<b>22,00,000</b>	<b>6,90,000</b>
<b>Normal Profits [12% X Capital Employed]</b>	<b>2,64,000</b>	<b>82,800</b>

## Answer to PTP\_Final\_Syllabus 2012\_Jun'2015\_Set 3

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**Note:** Equity Capital Employed and Equity Earnings are considered for purpose of determining Goodwill, since Goodwill is monetary value of residual business advantage, which includes, among many things, advantages of gearing as well.

### 2. Computation of Future Maintainable Profits

Particulars	R Ltd.	S Ltd.
Average Profits as Given	4,50,000	3,10,000
<b>Less:</b> Interest on Debentures [6,00,000 x 10%/4,00,000 x 10%]	(60,000)	(40,000)
<b>Less:</b> Claim / Expenses not recorded	-	(10,000)
<b>Less:</b> Depreciation on Increase in Value of Fixed Assets [(21L – 17L) x 10%]	(40,000)	-
<b>Add:</b> Depreciation on Decrease in value of Fixed Assets [(14 L- 12L) x 10%]	-	20,000
<b>Equity Earnings = Future Maintainable Profits</b>	<b>3,50,000</b>	<b>2,80,000</b>

### 3. Computation of Goodwill

Particulars	R Ltd.	S Ltd.
Future Maintainable Profits	3,50,000	2,80,000
<b>Less:</b> Normal Profits	(2,64,000)	(82,800)
<b>Super Profits</b>	<b>86,000</b>	<b>1,97,200</b>
<b>Goodwill (Super Profits X 3 years)</b>	<b>2,58,000</b>	<b>5,91,600</b>

**Question No. 4.** (Answer **any two** questions. Each question carries **15 marks**)

**4(a)(i). Explain your reaction in various uncertainties during the process of business valuation?**

**[5]**

**Answer to 4(a)(i):**

The advantage of breaking uncertainty down into estimation uncertainty, firm-specific and macroeconomic uncertainty is that it gives us a window on what we can manage, what we can control and what we should just let pass through into the valuation.

Building better models and accessing superior information will reduce estimation uncertainty but will do little to reduce exposure to firm-specific or macro-economic risk. Even the best-constructed model will be susceptible to these uncertainties.

In general, analysts should try to focus on making their best estimates of firm-specific information – how long will the firm are able to maintain high growth? How fast will earnings grow during that period? What type of excess returns will the firm earn? – and steer away from bringing in their views on macro economic variables. To see why, assume that you believe that interest rates today are too low and that they will go up by about 1.5% over the next year. If you build in the

## Answer to PTP\_Final\_Syllabus 2012\_Jun'2015\_Set 3

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expected rise in interest rates into your discounted cash flow valuations, they will all yield low values for the companies that you are analyzing. A person using these valuations will be faced with a conundrum because she will have no way of knowing how much of this over valuation is attributable to your macroeconomic views and how much to your views of the company.

In summary, analysts should concentrate on building the best models they can with as much information as they can legally access, trying to make their best estimates of firm-specific components and being as neutral as they can on macro economic variables. As new information comes in, they should update their valuations to reflect the new information. There is no place for false pride in this process. Valuations can change dramatically over time and they should if the information warrants such a change.

**4(a)(ii). Raymond Inc., a leader in the development and manufacture of household products in India, reported EBIT of ₹1,200 lakh in 2014-15 prior to depreciation of ₹350 lakh. The capital expenditures in 2014-15 amounted to ₹420 lakh and working capital was 10% of the revenues (which were ₹13,000 lakh). The firm has outstanding debt yielding a pre-tax interest rate of 8%. The tax rate for the firm is 40% and the Treasury bill rate is 7%. The most recent beta for the firm is 1.10. The debt equity ratio of the firm was 50%.**

**The firm expects revenues, earnings, capital expenditures and depreciation to grow at 9.5% a year from 2015-16 to 2019-20 after which the growth rate is expected to drop by 4% (capital spending will offset depreciation in the steady state period). The company also plans to lower its debt/equity ratio to 25% for the steady state resulting in the pre-tax interest rate drop to 7.5%. The annual market premium of the firm is 6%.**

**Estimate the value of the firm.**

**[10]**

**Answer to 4(a)(ii):**

Base year information (2014-15)	
Earnings before interest and taxes	= ₹ 1,200 lakh
Capital expenditure	= ₹ 420 lakh
Depreciation	= ₹ 350 lakh
Revenues	= ₹ 13,000 lakh
Working capital as a percentage of revenues	= ₹ 10%
Tax rate	= ₹ 40%

**High Growth Phase**

Length of high growth phase	= 5 years
Expected growth rate in FCFF	= 9.5%
Beta	= 1.10
Cost of debt	= 8%
Debt ratio	= 50%

**Stable Growth Phase**

Expected growth rate in FCFF	= 4%
Cost of debt	= 7.5%
Debt ratio	= 25%

The forecasted cash flows to the firm over the next five years are given as follows:

(₹ in lakhs)

## Answer to PTP\_Final\_Syllabus 2012\_Jun'2015\_Set 3

	2015-16	2016-17	2017-18	2018-19	2019-20	Terminal year
EBIT	1314	1438.83	1575.52	1725.19	1889.09	1964.65
- tax @ 40%	525.6	575.53	630.21	690.07	755.64	785.86
- (cap exp- Dep)	76.65	83.93	91.91	100.64	110.20	114.61
- change in WC *	123.5	135.23	148.08	162.15	177.55	81.86
FCFF	588.25	644.14	705.32	772.33	845.7	982.32
PV of FCFF @ 9.2%	538.69	540.16	541.64	543.13	544.21	

### Cost of equity for the high growth phase

$$= 7\% + 1.1(6) = 13.6\%$$

### Cost of capital during the high growth phase

$$= 13.6 \times 0.5 + 8(1 - 0.4) \times 0.5$$

$$= 6.8 + 2.4 = 9.2\%$$

### \* Estimation of Change in Working Capital

(₹ in lakhs)

Revenues	13000	14235.0	15587.33	17068.12	18689.59	20465.10	21283.70
WC	1300	1423.5	1558.73	1706.81	1868.96	2046.51	2128.37
Change in WC		123.5	135.23	148.08	162.15	177.55	81.86

Estimation of Beta for the stable phase - As the firm reduces its debt, the interest rate goes down. With the reduced debt the equity in the firm will be less risky and the new beta of equity can be calculated as:

$$\text{New Beta} = \text{Old beta} / \{1 + (1 - t) \text{ Old D/E}\} \times \{1 + (1 - t) \text{ New D/E ratio}\}$$

$$= \{1.1 / (1 + (1 - 0.4)0.5)\} \times \{1 + (1 - 0.4)0.25\}$$

$$= 0.846 \times 1.15 = 0.97 \text{ approximately}$$

### Cost of equity for the stable growth phase

$$= 7\% + 0.97(6) = 12.82\%$$

### Cost of capital during the stable growth phase

$$= 12.82 \times 0.75 + 7.5(1 - 0.4) \times 0.25$$

$$= 9.615 + 1.125 = 10.74$$

$$\text{Terminal Value} = 982.32 / (0.1074 - 0.04)$$

$$= ₹ 14,639.64 \text{ lakhs}$$

### Present Value of Terminal Value

$$= ₹ 14,639.64 \text{ lakhs} / (1.092)^5 = ₹ 9,421.8 \text{ lakhs}$$

### Value of the firm

$$= ₹ (2,707.83 + 9,421.8) \text{ lakhs} = ₹ 12,129.63 \text{ lakhs}$$

**4 (b). The following financial statements have been extracted from the Annual Report 2014-15 of Khan Steel:**

#### Balance Sheet of Khan Steel Limited as at 31st March

(₹ in crores)

Particulars	2014	2015
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## Answer to PTP\_Final\_Syllabus 2012\_Jun'2015\_Set 3

<b>EQUITY AND LIABILITIES</b>		
<b>Shareholders's Funds:</b>		
Share Capital	959.41	971.41
Reserves and Surplus	45,807.02	51,649.95
Money received against share warrants	178.20	
	<b>46,944.63</b>	<b>52,621.36</b>
<b>Hybrid Perpetual Securities</b>	<b>1,500.00</b>	<b>2,275.00</b>
<b>Non-Current Liabilities:</b>		
Long-term Borrowings	24,499.05	21,353.20
Deferred tax liabilities (Net)	936.80	970.51
Other long-term liabilities	373.88	216.05
Long-term provisions	2,201.47	1,851.30
	<b>28,011.20</b>	<b>24,391.06</b>
<b>Current Liabilities:</b>		
Short-term borrowings	149.13	65.62
Trade payables	4,464.81	5,973.23
Other current liabilities	6,262.10	8,798.55
Short term provisions	2,219.85	2,066.24
	<b>13,095.89</b>	<b>16,903.64</b>
<b>Total</b>	<b>89,551.72</b>	<b>96,191.06</b>
<b>ASSETS</b>		
<b>Non-Current Assets</b>		
<b>Fixed Assets:</b>		
Tangible assets	11,532.58	11,142.36
Capital work-in-progress	5,612.28	16,058.49
Intangible assets	272.52	223.90
	<b>17,417.38</b>	<b>27,424.75</b>
Non-current investments	43,565.15	49,078.35
Foreign currency monetary item translation difference account	---	404.90
Long-term loans and advances	10,453.41	6,415.80
Other non-current assets	2.76	2.76
	<b>54,021.32</b>	<b>55,901.81</b>
<b>Current Assets:</b>		
Current investments	2,999.79	1,204.17
Inventories	3,953.76	4,858.99
Trade receivable	424.02	904.08
Cash and bank balance	4,138.78	3,946.99
Short-term loans and advance	6,458.94	1,828.09
Other current Assets	137.73	122.18
	<b>18,113.02</b>	<b>12,864.50</b>
<b>Total</b>	<b>89,551.72</b>	<b>96,191.06</b>

**Statement of Profit and Loss of Khan Steel Limited for the year ended on 31s March.**

(₹ in crores)

## Answer to PTP\_Final\_Syllabus 2012\_Jun'2015\_Set 3

Particulars	2014	2015
Revenue from Operations	31,902.14	37,005.71
Less: Excise Duty	2,505.79	3,072.25
	29,396.35	33,933.46
Other Income	528.36	886.43
<b>Total Revenue</b>	<b>29,924.71</b>	<b>34,819.89</b>
<b>EXPENSES</b>		
Raw materials consumed	6,244.01	8,014.37
Purchase of finished, semi-finished and other products	180.20	209.52
Charges in inventories of finished goods, work-in-progress, and stock-in-trade	(173.65)	(220.72)
Employee benefits expense	2,837.46	3,047.26
Depreciation and amortization expense	1,146.19	1,151.44
Finance costs	1,735.70	1,925.42
Other expenses	9,024.82	11,824.49
	20,994.73	25,951.78
Less: Expenditure (other than interest) transferred to capital and other accounts	198.78	478.23
<b>Total Expenses</b>	<b>20,795.95</b>	<b>25,473.55</b>
<b>Profit before Tax and Exceptional Items</b>	<b>9,128.76</b>	<b>9,346.34</b>
<b>Exceptional Item:</b>		
Profit on sale of Non-Current Investments	648.09	511.01
	648.09	511.01
<b>Profit/( Loss) before Tax</b>	<b>9,776.85</b>	<b>9857.35</b>
<b>Tax Expenses</b>	<b>2,911.16</b>	<b>3,160.93</b>
<b>Profit/(Loss) after Tax</b>	<b>6,865.69</b>	<b>6,696.42</b>

- (1) Find the EPS for the period ending on March 31, 2014 and March 31, 2015.
- (2) The face value per share is ₹ 10. Determine Return on Equity (ROE) for the year ending on March 31, 2014 and March 31, 2015.
- (3) Using the price of ₹ 471.75, calculate the ratio between the market price and the book value as on April 1, 2015.
- (4) Calculate the P/E ratio using the price of ₹ 471.75 and the EPS calculated for the year ending on March 31, 2015.
- (5) The CFO of Khan Steels has to make a presentation as a part of due diligence in Merger and Acquisition process. He has requested your help in determining intrinsic value of the shares. Assuming that the intrinsic value of the Khan Steel Ltd. share can be fairly estimated through the Constant Growth Model, using the information given below, you are required to calculate the value of share. Assume the cost of equity as 15%.

(₹ In crores)		
Dividend Particulars	2013-14	2014-15
Proposed dividend on Ordinary Shares	1,151.06	1,165.46

## Answer to PTP\_Final\_Syllabus 2012\_Jun'2015\_Set 3

<b>Tax on dividends</b>	<b>156.71</b>	<b>181.57</b>
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**[4+2+3+1+5]**

**Answer to 4(b):**

**(1)** Calculation of the EPS for the period ending on March 31, 2014 and March 31, 2015. The face value per share is ₹10: **(₹ In crores)**

	<b>31-Mar-14</b>	<b>31-Mar-15</b>
PAT	6,865.69	6,696.42
Share Capital	959.41	971.41
No. of Shares	95.94	97.14
EPS	71.56	68.94

**(2)** Determination of Return on Equity (ROE) for the year ending on March 31, 2014 and March 31, 2015: **(₹ In crores)**

<b>Calculation of Net Worth</b>	<b>31-Mar-14</b>	<b>31-Mar-15</b>
Share Capital	959.41	971.41
Reserves and Surplus	45,807.02	51,649.95
Money received against share warrants	178.20	
Deferred tax liabilities (Net)	936.80	970.51
	47,881.43	53,591.87
Less: Foreign currency monetary item translation difference account		404.90
Net Worth	47,881.43	53,186.97
Calculation of Return of Equity		
PAT	6,865.69	6,696.42
Return on Equity (PAT/Net Worth)× 100	14.34%	12.59%

**(3)** Using the price of ₹ 471.75, calculation of the ratio between the market price and the book value as on April 2, 2015:

	<b>31-Mar-15</b>
Net Worth (₹ in crores)	53,186.97
Share Capital (₹ in crores)	971.41
No. of Shares (in crores)	97.14
Book - value-per share	547.52
Market Price [02-04-2015]	471.75
Market Price to Book Value Ratio	0.86

**(4)** Calculation of the P/E ratio using the price of ₹ 471.75 and the EPS calculated for the year ending on March 31, 2015:

EPS (₹)	68.94
Market Price (₹)	471.75
P/E ratio	6.84

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- (5) Calculation of the value of shares assuming that the intrinsic value of the Khan Steel Ltd. share can be fairly estimated through the Constant Growth Model, and the cost of equity as 15%:

(₹ in Crores)

Dividend Particulars	2013-14	2014-15
Proposed dividend on Ordinary Shares	1451.06	1,165.46
Tax on dividends	156.71	181.57

(₹ in Crores)

Dividend Particulars	2014-15
Proposed dividend on Ordinary Shares	₹ 1,165.46
Tax on dividends	₹181.57
Total Pay Out	1,347.03
PAT	₹6,696.42
Dividend Pay Out Ratio	20.12%
Retention Ratio	79.88%
Return on Equity	12.59%
Growth Rate (ROE x Retention Ratio)	10.06%
Dividend Per Share (Proposed Dividend/ No. of Shares)	12.00
Cost of Equity	15.00%
Intrinsic Value of Share	₹ 267.35

**4(c)(i). A pharmaceutical firm has the patent rights for the next 20 years to a product that requires an initial investment of ₹1.4 crore to develop. However, the present value of the cash inflows for the product is only ₹80 lakh. Due to technological advancement, there is a possibility that the project would become a valuable project in the future. The simulation of the project under a variety of technological and competitive scenarios yields a variance in the present value of inflows of 0.05. The rate of the 10-year Government security is 10%. Calculate the value of the product patent. [9]**

**Answer to 4(c)(i):**

Since the product patent has the features of the call option, its value can be calculated using the Black-Scholes Option Pricing model.

S = Present value of the underlying asset  
 = Present value of inflows = ₹80 lakh  
 K = Exercise price = Present value of the cost of development = ₹1.4 crore  
 t = Time to expiration = Life of the patent = 20 years  
 Variance in the underlying asset = Variance in PV of inflows = 0.05  
 r = Riskless rate of return = 10%

Based on the inputs,  $d_1$  and  $d_2$  in the Black-Scholes model can be calculated as follows:



## Answer to PTP\_Final\_Syllabus 2012\_Jun'2015\_Set 3

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$$d_1 = \frac{\ln\left(\frac{0.8}{1.4}\right) + \left(0.1 + \frac{0.05}{2}\right)20}{0.224\sqrt{20}}$$
$$= \frac{-0.5596 + 2.5}{1.002}$$
$$= 1.936$$

$$D_2 = d_1 - \sigma\sqrt{t}$$
$$= 1.936 - 0.224\sqrt{20} = 0.934$$
$$= 0.6099$$

$$N(d_1) = 0.9768$$

$$N(d_2) = 0.8248$$

$$\text{Value of call} = SN(d_1) - Ke^{-rt}N(d_2)$$
$$= 0.8(0.968) - 1.4 \times (2.7183)^{-0.10 \times 20}(0.8248)$$
$$= 0.7744 - (1 / 7.389)(0.8248)$$
$$= 0.7744 - 0.1116$$
$$= 0.6628 \text{ or } ₹66.28 \text{ lakh}$$

From the above, we can conclude that though the product has a negative net present value currently, it is a valuable product when viewed as an option. This is a more realistic measure of value than traditional discounted cash flow techniques because it reflects the underlying uncertainty in the technology and in competition.

### 4(c)(ii). State the categories of Financial Instruments which are covered under AS 30? [6]

#### Answer to 4(c)(ii):

Four categories of financial instruments are covered under AS 30. They are

(1) Held for Trading; (2) Held to maturity; (3) Loans & Receivables and (4) Available for sale.

A financial asset or financial liability is classified as **held for trading** if it is

- (i) acquired or incurred principally for the purpose of selling or repurchasing it in near term; or
- (ii) part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent pattern of short-term profit taking;
- (iii) a derivative (except for a derivative that is a financial guarantee contract or a effective hedging instrument).

**Held- to-maturity** investments are non-derivative financial assets with fixed or determinable payments and fixed maturity that an entity has positive intention and ability to hold to maturity other than;

- (a) those that the entity upon initial recognition designates as at fair value through profit & loss;
- (b) those that meet the definition of loans and receivables; and those that the entity designates as available for sale.

## **Answer to PTP\_Final\_Syllabus 2012\_Jun'2015\_Set 3**

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**Loans and receivables are non-derivative financial assets** with determinable payments that are not quoted in an active market, other than; (a) those that the entity intends to sell immediately or in near term, which should be classified as held for trading and (b) those that entity upon initial recognition designates as available for sale; or those for which the holder may not recover substantially all of its initial investment, other than because of credit deterioration, which should be classified as available for sale.

Available –for –sale financial assets are those non-derivative financial assets that are designated as available for sale or are not classified as

- (a) Loans and receivables
- (b) Held to maturity investments or
- (c) Financial assets at fair value through profit and loss.