

Answer to MTP_Final_Syllabus 2012_Jun2015_Set 1

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 are condensed comparative financial statements, of Rajarshi Ltd., for the three years ended 31st March, 2013, 2014 and 2015.

	2014-15 (₹)	2013-14 (₹)	2012-13 (₹)
Current Assets:			
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
Total Current Assets	1,20,000	80,000	70,000
Non-current Assets:			
Plant and Equipment	2,60,000	1,50,000	76,000
Total Assets	3,80,000	2,30,000	1,46,000
Current Liabilities:			
Creditors	98,000	78,000	48,500
Provision for Income Tax	2,000	2,000	1,500
Total Current Liabilities	1,00,000	80,000	50,000
Non-current Liabilities:			
Debentures	50,000	50,000	---
Shareholders' Fund:			
Equity Share Capital (₹ 100 shares)	2,00,000	80,000	80,000
Profit and Loss Account	30,000	20,000	16,000
Total Liabilities	3,80,000	2,30,000	1,46,000

Comparative Operating Statement For the three years ended on 31st 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 31st March, 2012 was ₹ 10,000.

(ii) Credit terms are net 60 days from the date of invoice.

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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(a):

(1) Current Ratio:

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

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
$\frac{\text{Quick Assets}}{\text{Current Liabilities}}$	$\text{₹ } \frac{37,000}{50,000} = 0.74$	$\text{₹ } \frac{37,600}{80,000} = 0.47$	$\text{₹ } \frac{58,500}{1,00,000} = 0.585$

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
$\frac{\text{Gross Profit}}{\text{Sales}} \times 100$	$\text{₹ } \frac{45,000}{1,00,000} \times 100 = 45\%$	$\text{₹ } \frac{40,000}{1,20,000} \times 100 = 33\frac{1}{3}\%$	$\text{₹ } \frac{52,000}{2,10,000} \times 100 = 25\%$

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
$\frac{\text{Cost of goods sold}}{\text{Average Stock}}$	$\text{₹ } \frac{55,000}{20,000} = 2.75$	$\text{₹ } \frac{80,000}{35,000} = 2.29$	$\text{₹ } \frac{1,57,500}{50,000} = 3.15$

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

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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
Net Profit available for equity shareholders	$\frac{8,000}{800} = ₹ 10$	$\frac{4,000}{800} = ₹ 5$	$\frac{10,000}{2,000} = ₹ 5$
Number of equity shares			

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	$\frac{76,000}{96,000} = 0.79$	$\frac{1,50,000}{1,00,000} = 1.5$	$\frac{2,60,000}{2,30,000} = 1.13$
Shareholders' funds			

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.

1(b). The Balance Sheet (Extracts) of Ignu Ltd as at 31.03.14 and 31.03.15 are presented:

Balance Sheets (Extracts) as at 31st March,

(₹ in Lakhs)

Equities & Liabilities	2014	2015	Assets	2014	2015
	₹	₹		₹	₹
Shareholders' Fund:			Non-Current Assets:		
Share Capital	300.00	300.00	Freehold Property (at cost)	225.00	240.00
Reserves	225.00	240.00	Plant & Machinery	135.00	165.00
Non-current Liabilities:			(at cost less Depreciation)		
6% Debentures (unsecured)	75.00	75.00	Investment in shares of companies under the management (unquoted)	150.00	150.00
Mortgage on Freehold Property	27.00	14.25	Investment in shares of other companies (quoted) (Market value 2014 : ₹ 120 lakhs; 2013 : ₹ 150 lakhs)	112.50	112.50
Current Liabilities:			Current Assets:		
Creditors	45.00	45.00	Stock	52.50	75.00

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Proposed Dividend (Subject to deductions of tax)	22.50	23.25	Debtors	45.00	75.00
Provision for Taxation	21.00	37.50	Bank	10.50	—
Secured Overdraft (by a floating charge on assets)	15.00	82.50			
	730.50	817.50		730.50	817.50

The following additional information for the year 2014-15 is relevant:

- | | |
|---|---------------|
| (1) Credit Sales | ₹ 675 lakhs |
| (2) Credit Purchases | ₹ 520 lakhs |
| (3) Overhead | ₹ 85.75 lakhs |
| (4) Depreciation on Plant & Machinery | ₹ 17.50 lakhs |
| (5) Dividend for 2013-14 was paid in full | |
| (6) Amount paid towards taxation for the year 2013-14 | ₹ 21.50 lakhs |

In view of Credit squeeze, the company has been asked by the Bank to reduce the overdraft substantially within six months, if possible by 50%.

You are required to prepare a Cash Flow Statement and briefly comment on the financial position of the company on the basis of information of Cash Flow Statement and suggest remedial measures to overcome the financial crises. [10]

Answer to 1(b):

**In the books of Ignu Ltd.
Cash Flow Statement
for the year ended 31.03.2015**

(₹ in lakhs)

	₹	₹	₹
Cash Flows from Operating Activities			
Net Profit :			
Net Profit for 2014-15	240.00		
Less : Net Profit for 2013-14	225.00	15.00	
Add : Non-Operating Expenses			
Depreciation on Plant & Machinery	17.50		
Debenture Interest	4.50		
Provision for Taxation	38.00		
Proposed Dividend	23.25	83.25	
		98.25	
Less : Non-Operating Income		Nil	
		98.25	

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Add : Decrease in Current Assets or Increase in Current Liabilities		Nil	
		98.25	
Less : Increase in Current Assets or Decrease in Current Liabilities			
Increase in Stock	22.50		
Increase in Debtors	30.00	52.50	
		45.75	
Less : Income Tax Paid		21.50	
Net Cash Flow for Operating Activities			24.25
Cash Flows from Investing Activities:			
Purchase of Plant and Machinery	47.50		
Purchase of Freehold Property	15.00		
Net Cash Flows from Investing Activities			(-) 62.50
Cash Flows from Financing Activities:			
Repayment of Mortgage Loan	12.75		
Payment of Interest	4.50		
Payment of Dividend	22.50		
Net Cash Flows from Financing Activities			(-) 39.75
Net Decrease in Cash or Cash equivalent			(-) 78.00
Add : Cash and cash equivalent at the beginning (₹ 10.50 lakhs - ₹ 15.00 lakhs)			(-) 4.50
Cash or Cash equivalent at the end			(-) 82.50

Plant and Machinery Account

Dr.			Cr.
	₹		₹
			(₹ in lakhs)
To Balance b/d	135.00	By Depreciation	17.50
Bank—Purchase	47.50	Balance c/d	165.00
	182.50		182.50

Provision for Taxation Account

Dr.			Cr.
	₹		₹
			(₹ in lakhs)
To Bank A/c	21.50	By Balance b/d	21.00
Balance c/d	37.50	Profit & Loss A/c/Reserve	38.00
	59.00		59.00

Notes:

As per AS-3, Interest on Debentures should be considered under financing activities. But interest on Mortgage Loan is treated as an item of operating activities as such loan is issued to be used for working capital purposes (since the rate of interest on such loan is not given)

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Comments and Interpretation:

From the above Cash Flow Statement it becomes clear that the amount of Bank Overdraft has been taken as a result of the following : Capital Expenditure ₹ 62.50 lakhs + Repayment of Loan ₹ 12.75 lakhs and payment of Interest and Dividend over Operating Cash Flow (₹ 24.25 lakhs - ₹ 4.50 lakhs - ₹ 22.50 lakhs) ₹ 2.75 lakhs = ₹ 78 lakhs. Since the bank overdraft is a costly source of finance it is not advisable to expand the firm depending on such sources. Moreover, a conservative policy should be adopted for using long term debts which is evident from Debt-

Equity Ratio $\left(\text{i.e. } \frac{\text{₹ } 89.25 \text{ lakhs}}{\text{₹ } 540.00 \text{ lakhs}} \times 100 \right) = 16.53\%$. It is suggested that the firm may have raised

funds for Capital Expenditure purposes from long-term debts. Thus, Bank Overdraft could be reduced by 50% by raising the proceeds from long-term debts.

In order to avoid the liquidity crisis in future, the firm may have to improve its quality of earning by the proper utilisation of current assets.

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

2(a)(i). The following information's are related to financial position of Rungta Ltd. for 3 years which ended on 31st March every year:

Particulars	2013 (₹)	2014 (₹)	2015 (₹)
Share capital	1,40,000	1,80,000	1,90,000
Current Liabilities	40,000	?	?
Working Capital	60,000	50,000	1,40,000
Long-term Loan	1,00,000	?	1,20,000
Fixed assets	2,40,000	2,50,000	2,35,000
Net Worth	2,00,000	2,20,000	2,55,000
Current Assets	?	1,20,000	2,00,000
Capital Employed	3,00,000	?	?
Reserves & Surplus	?	40,000	65,000

You are required to find out the values of the missing figures and prepare a Vertical Trend Balance Sheet taking 2012-13 as the base and also interpret the result. [4+3+3]

Answer to 2(a)(i):

Vertical Trend Balance Sheet (Base Year 2012-2013)

	2012-13		2013-14		2014-15	
	Amount (₹)	Trend %	Amount (₹)	Trend %	Amount (₹)	Trend %
Equity & Liabilities:						
Shareholders' Funds:						
Share Capital [A]	1,40,000	100	1,80,000	128.57	1,90,000	135.71
Reserve & Surplus [B]	60,000	100	40,000	66.67	65,000	108.33
Net Worth [C=A+B]	2,00,000	100	2,20,000	110	2,55,000	127.50

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Non-current Liabilities:							
Long-term Loan [D]	1,00,000	100	80,000	80	1,20,000	120	
Capital Employed [E=C+D]	3,00,000	100	3,00,000	100	3,75,000	125	
Current Liabilities [F]	40,000	100	70,000	175	60,000	150	
Total	3,40,000	100	3,70,000	108.82	4,35,000	127.94	
Assets:							
Non-current Assets:							
Fixed Assets	2,40,000	100	2,50,000	104.17	2,35,000	97.92	
Current Assets	1,00,000	100	1,20,000	120	2,00,000	200	
Total	3,40,000	100	3,70,000	108.82	4,35,000	127.94	

Notes:

- (i) Computation of Missing Figures for 2012-13:
 Reserve & Surplus: Net Worth – Share Capital = ₹2,00,000 - ₹1,50,000 = ₹50,000
 Current Assets = Working Capital + Current Liabilities = ₹60,000 + ₹40,000 = ₹1,00,000
- (ii) Computation of Missing Figures for 2013-14:
 Current Liabilities = Current Assets – Working Capital = ₹1,20,000 - ₹50,000 = ₹70,000
 Capital Employed = Fixed Assets + Working Capital = ₹2,50,000 + ₹50,000 = ₹3,00,000
 Again, Capital Employed = Net Worth + Long-term Loan
 Long-term Loan = Capital Employed - Net Worth = ₹3,00,000 - ₹2,20,000 = ₹80,000
- (iii) Computation of Missing Figures for 2014-15:
 Current Liabilities = Current Assets – Working Capital = ₹2,00,000 - ₹1,40,000 = ₹60,000
 Capital Employed = Net Worth + Long-term Loan = ₹2,55,000 + ₹1,20,000 = ₹3,75,000.

Interpretation:

- Although the reserve & surplus has decreased in 2013-14 but increased significantly in the year 2014-15. The share capital has also increased in both the years. As a result, the net worth has also increased significantly in the last year.
- The requirement of long-term loan is to some extent lower in 2013-14 than 2012-13 but increased in 2014-15. The current liabilities is increased heavily in 2013-14 but after that slightly decreased.
- The fixed assets have gone up marginally in 2013-14 but go down to 97.92% in 2014-15. The position of current assets has increased significantly.

2(a)(ii). The following figures apply to a small manufacturing company:

Particulars	Amount (₹)
Annual sales for the previous year	2,30,000
Profit after tax for the previous year	13,548
Budgeted annual sales for the next year	2,42,000
Budgeted profit after tax for the next year	14,000

In the first of the two years, the average total assets amounted to ₹2,00,000, and are estimated to be ₹2,20,000 for the next year.

Assuming full budget realization and taking turnover into account, calculate the alteration that will take place in the ratio representing return on capital employed and discuss the reasons for such alteration. [5]

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Answer to 2(a)(ii):

$$\frac{\text{Profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Capital Employed}} = \frac{\text{Profit}}{\text{Capital Employed}}$$

$$\text{Previous year } \frac{13,548}{2,30,000} \times 100 \times \frac{2,30,000}{2,00,000} \times 100 = \frac{13,548}{2,00,000} \times 100$$

$$5.89\% \times 115\% \times = 6.77\%$$

$$\text{Next year } \frac{14,000}{2,42,000} \times 100 \times \frac{2,42,000}{2,20,000} \times 100 = \frac{14,000}{2,20,000} \times 100$$

$$5.79\% \times 110\% \times = 6.36\%$$

The reasons for the change in the ratio of return on capital employed, i.e., from 6.77 per cent to 6.36 per cent are:

- I. The profit to turnover ratio has decreased from 5.89 per cent to 5.79 per cent representing a very slight declination.
- II. The capital turnover ratio has declined significantly from 115 per cent to 110 per cent. Although sales have improved, the additional capital employed has not resulted in a proportionate increase in sales this will be clear from the following:
Increase in capital employed by ₹ 20,000 i.e., 10 per cent on original capital.

Increase in sales ₹ 12,000 i.e., 5.2 per cent over previous year's sales.

Again, if the additional return on additional capital employed is compared with the previous year's return on capital employed, the following result will be obtained:

$$\frac{\text{Addl. Profit}}{\text{Addl. Capital Employed}} \times 100 = \frac{\text{₹}452}{20,000} \times 100 = 2.26 \text{ per cent}$$

When the amount of capital employed is computed on the basis of the assets side of the balance sheet, the following adjustments should be made:

1. Intangible assets like goodwill, patents, trademarks, etc. should be excluded unless they have definite market values.
2. Fictitious assets, e.g., preliminary expenses, cost of issue of share/debentures, deferred advertisement expenses, should be excluded.
3. Idle or unused assets, e.g., plant and machinery, excess cash and bank balance, if any, should not be taken into account.
4. Obsolete stock items and debts, which are likely to become bad should be deducted from inventories and debtors respectively.

While computing profit, extraneous and fortuitous expenditure and income and abnormal losses and gains should be excluded.

The ROCE ratio is the indicator of the profitability or otherwise of a firm. In other words, the higher the return, the more profitable is the position of the firm, and vice versa.

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2(b)(i). Emmie Ltd. has a machine having an additional life of 5 years, which costs ₹1,00,000 and which has a book value of ₹25,000. A new machine costing ₹2,20,000 is available. Though its capacity is same as that of the old machine, it will mean a saving in variable costs to the extent of ₹ 70,000 p.a. The life of the machine will be 5 years at the end of which it will have a scrap value of ₹40,000. The rate of income tax is 60% and Emmie Ltd. does not make an investment, if it yields less than 12%. The old machine, if sold, will fetch ₹10,000.

Advise Emmie Ltd. whether the old machine should be replaced or not.

Note:

P.V. of ₹ 1 receivable annually for 5 years at 12% = 3.605

P.V. of ₹ 1 receivable at the end of 5 years at 12% = 0.567

P.V. of ₹ 1 receivable at the end of 1 year at 12% = 0.893

[5]

Answer to 2(b)(i):

Statement Showing the Net Present Value of New Machine

	₹	₹
Cash Inflow		
Saving in Variable Cost		70,000
Less: Dep. on new machine		
₹ $\left(\frac{2,20,000 - 40,000}{5} \right)$	36,000	
Less: dep. On old machine		
₹ $\left(\frac{25,000}{5} \right)$	5,000	
Net Profit		39,000
Less: Tax @ 60%		23,400
Net Inflow/ saving after Tax		15,600
Add: depreciation		31,000
∴ Annual Cash inflow		46,600

Now,

Particulars	₹
P.V. of Cash inflow for 5 years = ₹46,600 x 3.605	1,67,993
P.V. of scrap value at the end of 5 years = ₹40,000 x 0.567	22,680
P.V. of total cash inflow	1,90,673
Less: P.V. of cash outflow (2,20,000 – 10,000)	2,10,000
Net Present Value	(-) 19,327

Since, the NPV is negative; it is not profitable to install the new machine. The old machine should not be replaced i.e. it should be continued.

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2(b)(ii). A company has an operating leverage of leverage 1.1 as against 1.25 during the previous year. If the current fixed cost is 25% more than that of the previous year, to what extent has the contribution earned by the firm changed over the previous year?

[5]

Answer to 2(b)(ii):

$$\text{Operating Leverage} = \frac{\text{Contribution (C)}}{\text{Contribution} - \text{Fixed cost (F)}}$$

Last year,

$$1.25 = \frac{C}{C - F}$$

$$1.25 (C - F) = C$$

$$1.25C - 1.25F = C$$

$$1.25C - C = 1.25F$$

$$0.25C = 1.25F$$

$$C = 5F$$

Current year,

$$1.10 = \frac{C}{C - 1.25F}$$

$$1.10 (C - 1.25F) = C$$

$$1.10C - 1.375F = C$$

$$1.10C - C = 1.375F$$

$$0.10C = 1.375F$$

$$C = 13.75F$$

Increase in contribution in current year over last year:

$$= \frac{\text{Current year contribution} - \text{Last year contribution}}{\text{Last year contribution}}$$

$$= \frac{13.75F - 5F}{5F} \times 100$$

$$\frac{8.75F}{5F} \times 100 = 175\%$$

Therefore, 175% increase in contribution over last year.

2(b)(iii). Discuss Financial Modelling. State the attributes of a financial model.

$\left[2\frac{1}{2} + 2\frac{1}{2} \right]$

Answer to 2(b)(iii):

Financial modeling is the task of building a financial model, or the process of using a financial model for financial decision making and analysis. It is an abstract representation of a financial decision making situation. It is used to do historical analysis of a company's performance, and

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to do projections of its financial performance into the future. Financial Modeling is not just for the Accountant or Financial Consultant, who are called upon to develop financial projections, but also for business owners and managers.

Attributes of a Financial Model:

A model is considered to be good if it has the following attributes:

- (i) Realistic - Assumptions, relationships, and inputs must be realistic so that the outputs are useable.
- (ii) Error Free - harder than it looks.
- (iii) Flexible - This is a two edged sword. Develop the model to be easy and error free, and then add elements of flexibility. Experience will tell you when a model gets too complicated and should be segregated into separate models for separate purposes.
- (iv) Easy to use - Use clear labels and descriptions.
- (v) Easy to understand - A financial model is only as good as the analyst using it.

2(c)(i). The following Financial Statement is summarised from the books of Neel Ltd. as at 31st March, 2015:

Equity and Liabilities	₹	Assets	₹
Shareholders' Fund:		Non-current Assets:	
Paid-up Capital	15,00,000	Fixed Assets (at cost)	25,00,000
Reserves and Surplus	6,00,000	Current Assets:	
Non-current Liabilities:		Stock-in-trade	9,10,000
Long-term borrowings:		Book Debts	12,40,000
Debentures	5,00,000		
Long term Provision:			
Accumulated depreciation on Fixed Assets	8,50,000		
Current Liabilities:		Investment (Short-term)	1,60,000
Bank Overdraft	12,00,000	Cash	40,000
Sundry Creditors	2,00,000		
	48,50,000		48,50,000

Annual Sales — ₹ 74,40,000. Gross Profit — ₹ 7,44,000.

You are required to calculate the following ratios for the year and comment on the financial position as revealed by these ratios:

- A. Debt Equity Ratio,
- B. Current Ratio,
- C. Proprietary Ratio,
- D. G. P. Ratio,
- E. Debtors' Turnover Ratio,
- F. Stock Turnover Ratio.

Bank Overdraft is payable on demand.

[6+6]

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Answer to 2(c)(i):

Before making any comment on the ratios, the ratios should be computed first along with their components which are:

1. Long-term Debts

	₹
Debentures	5,00,000
	5,00,000

2. Shareholders' or Proprietor's Fund

	₹
Share Capital	15,00,000
Reserves & Surplus	6,00,000
	21,00,000

3. Current Assets

	₹
Stock	9,10,000
Book Debts	12,40,000
Investment (Short-term)	1,60,000
Cash	40,000
	23,50,000

4. Current Liabilities

	₹
Bank Overdraft	12,00,000
Sundry Creditors	2,00,000
	14,00,000

5. Total Assets

	₹
Fixed Assets (₹ 25,00,000 – ₹ 8,50,000)	16,50,000
Current Assets	23,50,000
	40,00,000

6. Cost of Goods Sold

= Sales – G.P.
= ₹ 74,40,000 – ₹ 7,44,000
= ₹ 66,96,000

Computation of Ratios and Comments on them:

(A) Debt-Equity Ratio

$$\text{Debt - Equity Ratio} = \frac{\text{Long-term Debts}}{\text{Proprietor's Fund}} = \frac{₹5,00,000}{₹21,00,000} = 0.24 : 1$$

This ratio expresses the claims of Long-term Creditors and Debentureholders against the Assets of the company. Since it is very low it is favourable from the standpoint of Long-term Creditors which supplies maximum safety for them, i.e., they are highly secured.

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(B) Current Ratio

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{\text{₹23,50,000}}{\text{₹14,00,000}} = 1.68 : 1$$

Since this ratio is less than the normal Current Ratio of 2 : 1, it reveals that the liquidity position is not at all satisfactory, i.e., the company is able to pay its maturing obligations as soon as it becomes due as only ₹ 1.68 paise of Current Assets are available against each rupee of Current Liability.

(C) Proprietary Ratio

$$\text{Proprietary Ratio} = \frac{\text{Proprietor's Funds}}{\text{Total Assets}} = \frac{\text{₹21,00,000}}{\text{₹40,00,000}} = 0.53 : 1$$

This ratio indicates that the company is not so dependent on outsiders' fund or external equities as more than 50% is being contributed by the shareholders.

(D) G. P. Ratio

$$\text{G.P. Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100 = \frac{\text{₹7,44,000}}{\text{₹74,40,000}} \times 100 = 10\%$$

This ratio is very low and, as such, not at all satisfactory since it is less than the normal ratio of 25%. This low ratio indicates that there are unfavourable conditions like increase in cost of production or sales and decrease in management efficiency and so on.

(E) Debtors Turnover Ratio

$$\text{Debtors' Turnover Ratio} = \frac{\text{Debtors}}{\text{Sales}} \times 365 = \frac{\text{₹12,40,000}}{\text{₹74,40,000}} \times 365 = 61 \text{ days}$$

This ratio indicates that the collection policy of the company is faulty since it exceeds its normal level.

(F) Stock-Turnover Ratio

$$\text{Stock - Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{(Average) Stock}} = \frac{\text{₹66,96,000}}{\text{₹9,10,000}} = 7.36 \text{ times}$$

Since this ratio satisfies the normal ratio of 5 times on an average and, hence, the efficiency of the management is found to be good.

2(c)(ii). State Sustainable Growth Rate and its importance in relation to the growth of a firm. Also state the formula which is to be used in this context. [1+1+1]

Answer to 2(c)(ii):

The sustainable growth rate is the maximum growth rate that a firm can achieve without resorting to external equity finance. This is the growth rate that can be sustained with the help of retained earnings matched with debt financing, in line with the debt-equity policy of the firm.

This is an important growth rate because firms are reluctant to raise external equity finance (even though they may not mind raising debt finance, in line with their debt - equity policy) for

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the following reasons: (i) The dilution of control, consequent to the external equity issue, may not be acceptable to the existing controlling interest, (ii) There may be a significant degree of under pricing when external equity is raised, (iii) The cost of issue tends to be high.

The sustainable growth rate is calculated the way in which the internal growth rate is calculated, except for one difference: To calculate the sustainable growth rate we have to consider retained earnings plus matching debt, in line with the firm's debt equity (D/E) ratio.

$$\text{Sustainable growth rate} = \frac{\text{Net Profit Margin} \times \text{Asset turnover}}{1 - \text{Net profit margin} \times \text{Asset turnover}}$$
$$\frac{\times (1 + \text{Debt - equity ratio}) \times \text{Plough back ratio}}{\times (1 + \text{Debt - equity ratio}) \times \text{Plough back ratio}}$$

$$\text{Return on equity} = \text{Net profit margin} \times \text{Asset turnover} \times (1 + \text{Debt-equity ratio})$$

Thus,

$$\text{Sustainable growth rate} = \frac{\text{Return on equity} \times \text{Ploughback ratio}}{1 - \text{Return on equity} \times \text{Ploughback ratio}}$$

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

3 (a). Rajjan Ltd. provides you the following information:

Net Assets at their current values:	₹ 100 lacs
Average Annual Earnings available for Equity Share holders	₹ 15 lacs
8,00,000 Equity Shares of ₹ 5 each fully paid	₹ 40 lacs
1,00,000 Equity Shares of ₹ 10 each fully paid-up	₹ 10 lacs
Normal Rate of Expectation	12%

Calculate the Fair Value of an Equity Share assuming that controlling interest is to be transferred. [10]

Answer to 3(a):

Net Assets Value

Step 1: Total Equivalent Number of Equity Shares of ₹ 10 each
= [1,00,000 (₹ 10 each) + 4,00,000 (₹ 5 each)] = 5,00,000.

Step 2: Value of an Equivalent Equity Share of ₹ 10 each
= $\frac{\text{Net Assets}}{\text{Total Equivalent number of Equity Shares of ₹ 10 each}}$

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$$\begin{aligned} &= \frac{\text{₹}100 \text{ lacs}}{5 \text{ lacs}} \\ &= \text{₹ } 20 \end{aligned}$$

Step 3: Value of Equity Shares of ₹ 5 each
= Value of an equivalent Equity Share of ₹ 10 each × ₹ 5/₹ 10
= ₹ 20 × 5/10
= ₹ 10.

Earning Yield Based Value

Step 1: Average Earnings available for Equity Share holders = ₹ 15 lacs.

Step 2: total Paid-up Value of all Equity Shares ₹ 50 lacs.

$$\begin{aligned} \text{Step 3: Average Rate of Earning} &= \frac{\text{Average Earnings}}{\text{Total Paid-up Value of all Equity Shares}} \times 100 \\ &= \frac{15}{50} \times 100 \\ &= 30\%. \end{aligned}$$

Step 4: Normal Rate of Expectation in the same industry = 12%

$$\begin{aligned} \text{Step 5: Value of Share} &= \frac{\text{Average Rate of Earnings}}{\text{Normal Rate of Expectation}} \times \text{Paid-up Value of an Equity Share} \\ \text{Value of Share of ₹ 10 paid-up} &= \text{₹ } \frac{30}{12} \times \text{₹ } 10 = \text{₹ } 25 \\ \text{Value of Share of ₹ 5 paid-up} &= \text{₹ } \frac{30}{12} \times \text{₹ } 5 = \text{₹ } 12.5 \end{aligned}$$

Fair Value of Share

$$\begin{aligned} \text{Fair Value of a Share} &= \frac{\text{Net Assets Value} + \text{Yield Based Value}}{2} \\ \text{Fair Value of a Share of ₹ 10 paid-up} &= \frac{\text{₹}10 + \text{₹}25}{2} = \text{₹ } 22.5 \\ \text{Fair Value of a Share of ₹ 5 paid-up} &= \frac{\text{₹}10 + \text{₹}25}{2} = \text{₹ } 11.25. \end{aligned}$$

3 (b). DABU Ltd. is planning to acquire BALS A Ltd. another company in the same industry. The financial details of the two companies are as follows:

Details	DABU	BALS A
Profit after tax	₹ 3,000 lakhs	₹ 600 lakhs
Market Price	₹550	₹100
P/E ratio	25	16

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DABU wants to merge BALSAs with itself after acquiring k. The earnings of the merged entity are expected to be higher than the sum of earnings of the two companies by ₹15 lakhs and its P/E ratio is expected to be 22.

The Management of DABU is offering one share of DABU for every ten shares of BALSAs, while the management of BALSAs is expecting at least two. Can a deal be struck between the two companies? [10]

Answer to 3(b):

Maximum exchange ratio acceptable to shareholders of Dabu:

A – DABU B - BALSAs

Details	DABU	BALSAs
Profit after tax	₹ 3,000 lakhs	₹ 600 lakhs
Market Price	₹550	₹100
P/E ratio	25	16
EPS	₹22	₹6.25
Number of Shares	136.36 lakhs	96

$$S_A = 136.36 \text{ lakhs}$$

$$S_B = 96 \text{ lakhs}$$

$$ER_A = -\frac{S_A}{S_B} + \frac{[(E_A + E_B + \text{Synergy})PE_{AB}]}{P_A S_B}$$

$$ER_1 = -1.42 + 1.50 = 0.08$$

∴ DABU can give a maximum number of 8 shares for every 100 shares of BALSAs or 0.8 for every 10

Minimum exchange ratio acceptable to shareholders of BALSAs:

$$ER_B = \frac{P_B S_A}{[(PE_{AB})(E_A + E_B + \text{synergy}) - P_B S_B]}$$

$$= 0.195$$

∴ Shareholders of BALSAs can accept a minimum number of 20 shares of DABU for every 100 shares of Balsa i.e. 2 per every 10.

As the maximum exchange ratio acceptable to the shareholder of DABU is less than the minimum exchange ratio acceptable to the shareholders of BALSAs, there is a scope of bargain.

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

4 (a). Sundar Manufacturing Company Limited's Operating Profits and Operating Capital Employed during last 5 years are – (₹ in Lakhs)

Particulars	Operating Profit	Opening Capital	Closing Capital
2010-2011	410	4,000	6,000
2011-2012	690	6,000	7,000
2012-2013	800	7,000	9,000
2013-2014	1500	9,000	10,000
2014-2015	1800	10,000	12,000

The Company is expected to commission a new project in April 2015 at a cost of ₹ 9,000 Lakhs, which would generate operational flow amounting to ₹1,200 Lakhs p.a. for atleast 4 years. Moreover the Company expects a 2% annual growth of existing profits over the next 4 years. Industry Average Rate of Return is 6% p.a.

Determine the Company's Goodwill taking 4 years purchase of Discounted Super Profit. The Company is in 25% tax bracket. Consider 5% Capital Growth and 10% WDV depreciation from April 2015 onwards. 60% of Capital Employed comprise of depreciable Fixed Assets. Use 10% Discount Factor.

Also assume that the Company has the following Capital Structure as on 31.03.2015 - (a) Equity Share Capital (₹ 10 each) = ₹ 5,000 Lakhs, (b) Reserves and Surplus = ₹ 4,000 Lakhs, (c) 14% Debentures = ₹ 3,000 Lakhs.

The funds for the new project (₹ 9,000 Lakhs) are to be raised by issue of shares and availing loans. The Company wants to maintain the existing Debt-Equity Ratio. It can arrange for 16% Term Loan.

How much maximum premium should the Company fix for its new Equity Issue? Assume that the Company desires to link Premium to the Intrinsic Value of Shares after taking into account the Value of Goodwill. [15]

Answer to 4(a):

1. Computation of Depreciation (₹ Lakhs)

Year	Opening Balance	New Project	Additions at 5% of Opg Bal.	Gross Balance	Fixed Assets at 60%	Depreciation at 10%	Closing Balance
1	2	3	4	5 = 2+3+4	6	7 = 6 × 10%	8 = 5-7
2015-2016	12,000	9,000	600	21,600	12,960	1,296	20,304
2016-2017	20,304	-	1,015	21,319	12,792	1,279	20,040
2017-2018	20,040	-	1,002	21,042	12,625	1,262	19,780
2018-2019	19,780	-	989	20,769	12,461	1,246	19,523

Answer to MTP_Final_Syllabus 2012_Jun2015_Set 1

Notes:

- Since Capital Growth is 5%, additions are made at 5% of the Opening Balance, for every year. Alternatively, for Year 2015-2016, 5% growth can be computed on Opening Capital **Plus** New Project Cost, since New Project cost is incurred in the year beginning itself.
- Depreciation is provided at 10% on the Closing Balance in Fixed Assets for a particular year.

2. Computation of Future Maintainable Profits (₹ Lakhs)

Year	Operating Income			Depreciation (WN 1)	Taxable Income	Tax at 25%	Maintainable Profit
	Existing	Additional	Total				
1	2	3	4 = 2 + 3	5	6 = 4 - 5	7 = 6 x 25%	8 = 6-7
2015-2016	(1,800 + 2%) = 1,836	1,200	3,036	1,296	1,740	435	1,305
2016-2017	(1,836 + 2%) = 1,873	1,200	3,073	1,279	1,794	449	1,345
2017-2018	(1,873 + 2%) = 1,910	1,200	3,110	1,262	1,848	462	1,386
2018-2019	(1,910 + 2%) = 1,948	1,200	3,148	1,246	1,902	476	1,426

Note: It is assumed that the Operating Profits given is excluding Interest on Loans Borrowed.

3. Computation of Future Average Capital employed (₹ Lakhs)

Year	Opening Capital Employed	Closing Capital Employed	Average Capital Employed	Normal Rate of Return at 6%
2015 - 2016	12,000 + 9000 = 21,000	20,304	20,652	1,239
2016 - 2017		20,304	20,172	1,210
2017 - 2018		20,040	19,910	1,195
2018 - 2019		19,780	19,651	1,179

Note: Since new project investment is made in the beginning of the year itself, it is considered as part of Opening Capital Employed for computing Average Capital Employed.

4. Computation of Discounted super profits and Goodwill (₹Lakhs)

Year	Maintainable Profits	Normal Profit	Super Profit	PV Factor	Disc. Super Profit
2015-2016	1,305	1,239	66	0.9091	60.00
2016-2017	1,345	1,210	135	0.8264	111.56
2017-2018	1,386	1,195	191	0.7513	143.50
2018-2019	1,426	1,179	247	0.6830	168.70
Total = Discounted Super Profits for 4 Years = Goodwill					483.76

5. Funding Pattern for the new Project (₹ Lakhs)

(a) Present Equity Ratio: $\frac{\text{Debt}}{\text{Equity}} = \frac{₹3,000}{(₹5,000 + ₹4,000)}$	0.33 or 1 : 3
(b) Amount required for the Project	₹ 9,000 Lakhs
(c) Amount to be raised by way of Debt of 16% Term Loan = ₹ 9,000 Lakhs × 1/4	₹ 2,250 Lakhs
(d) Amount to be raised by way of Equity Issue = ₹ 9,000 Lakhs × 3/4	₹ 6,750 Lakhs

Answer to MTP_Final_Syllabus 2012_Jun2015_Set 1

6. Computation of Intrinsic Value of Share and Share Premium

Particulars	₹ Lakhs
Equity Share Capital	5,000.00
Reserves	4,000.00
Add: Goodwill	483.76
Net Worth of Equity Holders	9,483.76
Number of Equity Shares (Lakhs)	500
Intrinsic Value Per Share $\frac{₹9,483.76 \text{ lakhs}}{500 \text{ lakhs}}$ i. e. Issue Price of New Equity	₹ 18.97
Less: Face Value of each Equity Share	₹ 10.00
Premium on Fresh Issue	₹8.97

4 (b)(i). From the following data compute the Economic value Added: [7]

Share Capital	1,600 Crores	Beta Factor	1.05
Long Term Debt	320 Crores	Market Rate of Return	14%
Interest	32 Crores	Risk Free Rate	10%
Reserve and Surplus	3,200 Crores		
PBIT	1,432 Crores		
Tax Rate	30%		

Answer to 4(b):

1. Computation of Cost of Equity and Interest

$$E (R_A) = R_F + [\beta_A (R_M - R_F)] = 10\% \times 1.05 (14\% - 10\%) = 14.20\% = \text{Cost of Equity}$$

$$\text{Cost of Debt} = 32 / 320 \text{ Crores} = 10\% \text{ Pre Tax. Therefore, Post Tax} = 10 \times (1 - 30\%) = 7\%$$

2. Computation of Weighed Average Cost of Capital

Source	Amount ₹ Crores	Cost	Product
Equity (1,600 + 3,200)	4,800	14.20%	681.60
Long term Debt	320	7%	22.40
Capital Employed	5,120	WACC	704.00

$$\text{Therefore, Weighted Average Cost of capital} = 704 \div 5,120 = 13.75\%$$

3. Economic Value Added

$$\begin{aligned} \text{EVA} &= \text{Operating Profit After Taxes} \text{ Less } \text{Cost of Capital} \times \text{Capital Employed} \\ &= ₹ 1,432 \text{ Crores} \times (1 - 30\%) \text{ Less } 13.75\% \times ₹ 5,120 \text{ Crores} \\ &= ₹ 1,002.40 \text{ Crores} \text{ Less } ₹ 704.00 \text{ Crores} = \text{₹ 298.40 Crores} \end{aligned}$$

Answer to MTP_Final_Syllabus 2012_Jun2015_Set 1

4(b)(ii). From the following information, calculate the value of a share if you want to

1. Buy a small lot of shares;
2. Buy a controlling interest in the company.

Year	Profit (₹)	Capital Employed (₹)	Dividend (%)
2011	55,00,000	3,43,75,000	12
2012	1,60,00,000	8,00,00,000	15
2013	2,20,00,000	10,00,00,000	18
2014	2,50,00,000	10,00,00,000	20

The market expectation is 12%.

[4+4]

Answer to 4(b)(ii):

(1) To Buy a Small lot of Shares, Dividend Yield Method is most appropriate.

Since Dividend rate is rising continuously, Weighted Average Dividend Rate has been calculated.

Year	Profit (₹)	Capital Employed (₹)	Dividend (%)
2011	12	1	12
2012	15	2	30
2013	18	3	54
2014	20	4	80
		10	176

Average Dividend = $176/10 = 17.16\%$

$$\begin{aligned} \text{Value of Share} &= \frac{\text{Average Dividend Rate}}{\text{Market Expectation Rate}} \times 100 \\ &= \frac{17.6}{12} \times 100 \\ &= ₹ 146.67 \text{ per share} \end{aligned}$$

(2) To Buy a Controlling Interest in the company, Earning yield Method is most appropriate.

Since the profit is rising, Weighted Average Earning rate has been calculated.

Year	Yield % (Profit/Capital) (employed) × 100	Weight	Product
2009	16	1	16
2010	20	2	40
2011	22	3	66
2012	25	4	100
		10	222

Average Yield = $222/10 = 22.2\%$

$$\begin{aligned} \text{Value per share} &= \frac{\text{Average Earning Rate}}{\text{Market Expectation Rate}} \times 100 \\ &= \frac{22.2}{12} \times 100 \\ &= ₹ 185 \text{ per share.} \end{aligned}$$

Answer to MTP_Final_Syllabus 2012_Jun2015_Set 1

4(c)(i). Suraj Ltd. is a closely held company engaged M2M business offering logistic services mainly to small and medium sized companies through internet, who cannot afford sophisticated logistics practices. Company is planning to go for public issued in the coming year and is interest to know what the company's share will worth. The company engaged a consultant based in Mumbai. The consultant evaluated company's future prospects and made following estimates of future free case flows:

	Years (Amount in ₹)			
	1	2	3	4
Sales	1,00,000.00	1,15,000.00	1,32,250.00	1,32,250.00
Operating Income (EBIT)	16,000.00	18,400.00	21,160.00	21,160.00
Less: Cash tax payments	(4,800.00)	(5,520.00)	(6,348.00)	6,348.00
Net Operating Profit after	11,200.00	12,880.00	14,812.00	14,812.00
Less: Investments:				
Investments in Net Working Capital	(1,695.65)	(1,950.00)	(2,242.50)	---
Capital Expenditures (CAPEX)	(2,347.83)	(2,700.00)	(3,105.00)	---
Total Investments	(4,043.48)	(4,650.00)	(5,347.50)	---
Free Cash Flow	7,156.52	8,230.00	9,464.50	14,812.00

Further, the company's investment banker had done a study of the company's cost of capital and estimated WACC to be 12%. You are required to determine.

- I. Value Suraj Ltd. based on these estimates.
- II. Market Value Added (MVA) by company supposing that invested capital in the year 0 was ₹ 31,304.05 lacs.
- III. Value of per share, if company has 2,000 Equity Shares outstanding and debt amounting to ₹ 4,000 lacs. [3+1+3]

Answer to 4(c)(i):

I. Terminal Value = ₹ 14,812/0.12 = 1,23,433.33

Value of the Company = PV of Free Cash Flows

$$= \frac{₹7,156.52}{(1.12)^1} + \frac{₹8,230.00}{(1.12)^2} + \frac{₹9,464.50}{(1.12)^3} + \frac{₹1,23,433.33}{(1.12)^3}$$

$$= ₹ 1,07,544.71$$

II. MVA = Company Value – Invested Capital = ₹ 1,07,544.71 – ₹ 31,304.50 = ₹ 76,240.21.

III. Company's Value = Debt Value + Equity Value

$$₹ 1,07,544.71 = ₹ 4,000 + \text{Equity Value}$$

$$\text{Equity Value} = ₹ 1,03,544.71$$

$$\text{Value of per share} = \frac{\text{Equity Value}}{\text{Shares Outstanding}} = \frac{₹1,03,544.71}{2,000} = ₹ 51.77.$$

Answer to MTP_Final_Syllabus 2012_Jun2015_Set 1

4(c)(ii). CAS Ltd. gives the following information about past profits:

Year	2010	2011	2011	2013	2014
Profits ('000 ₹)	43,40	45,00	47,40	49,00	42,20

On scrutiny it is found (i) that upto 2012, The Company Ltd. followed FIFO method of finished stock valuation thereafter adopted LIFO method, (ii) that upto 2013 it followed Straight Line Method of Depreciation and thereafter adopted Written Down Value Method. Given below the details of Stock Valuation Straight Line and Written Down Value Depreciation:

(Figures in ₹ '000)

Year	Opening Stock		Closing Stock		Depreciation	
	FIFO	LIFO	FIFO	LIFO	SLM	WDV
2010	80,00	79,60	92,00	82,40	24,20	34,00
2011			98,40	95,80	28,30	36,20
2012			77,80	78,20	30,00	38,50
2013			84,00	77,00	33,40	39,20
2014			90,00	86,20	36,00	38,80

Determine Future Maintainable Profits (based on average of past 4 years) that can be used for Valuation of Goodwill. [8]

Answer to 4(c)(ii):

Statement showing the Recomputation of Profits following Uniform Accounting Policies

(Figures in ₹ '000)

Year	Book Profits	Effect of LIFO Valuation of Stock	Effect of W.D.V Depreciation	Profits after elimination of the effect of change in Accounting Policies
2010	43,40	-9,20*	-9,80**	24,40
2011	45,00	+7,00	-7,90	44,10
2012	47,40	+3,00	-8,50	41,90
2013	49,00	-40	-5,80	42,80
2014	42,20	---	---	42,20

*Increase in Stock as per LIFO Valuation – Increase in Stock as per FIFO valuation
= 2,80 – 12,00 = -9,20 and similarly for other years.

**SLM Depreciation – WDV Depreciation = 24,20 – 34,00 = -9,80 and similarly for other years.

Since there is no increasing trend after elimination of the effect of change in accounting policies let us take a simple average of the last 4 years profits to arrive at the future maintainable profits:
future Maintainable Profit ('000 ₹) = [(44,10 + 41,90 + 42,80 + 42,20)/4] = ₹ 42.75 thousands.