

TEST- 2 (Solution)**Answer to Question no.1**

$$(a) \text{ ROC} = \frac{\text{Operating Profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Capital Employed}}$$

$$\text{Year 1} = \frac{2,00,000}{5,00,000} \times \frac{5,00,000}{10,00,000} = 40\% \times 50\%$$

$$\text{Year 2} = \frac{3,60,000}{8,00,000} \times \frac{8,00,000}{12,50,000} = 45\% \times 64\% = 28.8\%$$

As compared to year 1, ROCE has shown substantial increase in year 2. This favourable position has been obtained due to following two reasons:-

- (1) Operating Profit Ration has increased from 40% to 45%. In year 1, Operating Cost was 60% of sales whereas in year 2, Operating cost has become 55% of sales. The business has successfully adopted and implemented cost control techniques for improving the profit earning capacity of the business.
- (2) Capital Employed Turnover has increased form 50% to 64%. In year 1, sales achieved was 50% of capital employed whereas in year 2, it has become 64% of capital employed. Hence, it is established that the company is making very effective utilization of capital for the purposes of achieving huge amount of sales.

(b) Application of Ratio Analysis in Financial Decision-Making

1. **Evaluation of Liquidity Position**:-Various ratios like Current Ratio and Liquid Ratio are helpful in assessing the liquidity position for identifying the firm's ability to meet its short term obligations.
2. **Evaluation of Profitability**:-Various ratios like Gross Profit Ratio, Operating Profit Ratio, ROCE, etc. are used to assess the profit earning capacity of the business.
3. **Evaluation of Operating Efficiency**:- Various ratios like Debtor Turnover Ratio, Stock Turnover Ratio , Fixed Assets Turnover ratio, etc. indicates the efficiency level of the company in generating the sales with the help of the investment in assets.
4. **Evaluation of Financial strength**:- various Ratios like Debt- Equity Ratio, Gearing Ratio, Leverage Ratios, etc. indicates the financial strength of the organization. These ratios signify the effect of various sources of finance, i.e., Debt, Equity and Preference. It also shows whether is able to make effective utilization of debt funds.
5. **Inter Firm and Intra Firm Comparison**:- Comparison of current period performance with past period and the comparison of own performance with the others is essential for future improvement. Ratios are very helpful in making such comparisons.

Answer to Question no.2:

$$K_e = \frac{D_1}{MP} + g = \frac{\text{₹ } 3.60}{\text{₹ } 40} + 7\% = 16\%$$

$$K_p = \frac{PD + \left(\frac{RV - MP}{N} \right)}{\left(\frac{RV + MP}{2} \right)} = \frac{11 + \left(\frac{100 - 75}{10} \right)}{\left(\frac{100 + 75}{2} \right)} = \frac{13.5}{87.5} = 15.43\%$$

$$K_d = \frac{I(1-T) + \left(\frac{RV - MP}{N} \right)}{\left(\frac{RV + MP}{2} \right)}$$

$$= \frac{13.50(1-0.40) + \left(\frac{100 - 80}{6} \right)}{\left(\frac{100 + 80}{2} \right)} = \frac{11.43}{90} = 12.70\%$$

(i) (a) WACC using book value weights:-

Source	Book Value	Weight	C/C	WACC
Equity Capital	15 cr.	25.64%	16%	4.10%
Preference Capital	1 cr.	1.71%	15.43%	0.26%
Retained Earnings	20 cr.	34.19%	16%	5.47%
Debentures	10 cr.	17.09%	12.70%	2.17%
Term Loan	12.5 cr.	21.37%	15% (1-0.4) = 9%	1.92%
	58.5 cr.			13.92%

(b) WACC using book value weights:-

Source	Market Value	Weight	C/C	WACC
Equity Capital	60 cr.	73.85%	16%	11.82%
Preference Capital	0.75 cr.	0.92%	15.43%	0.14%
Debentures	8 cr.	9.85%	12.70%	1.25%
Term Loan	12.5 cr.	15.38%	9%	1.38%
	81.25 cr.			14.59%

Market Value:

$$\text{Equity Capital} = 15 \text{ cr.} \times \frac{40}{10} = \text{₹ } 60 \text{ cr.}$$

$$\text{Preference Capital} = \text{₹ } 1 \text{ cr.} \times \frac{75}{100} = 0.75 \text{ cr.}$$

$$\text{Debentures} = 10 \text{ cr.} \times \frac{80}{100} = \text{₹ } 8 \text{ cr.}$$

(ii) Computation of WMCC

Source	Book Value	Weight	C/C	WMCC
Retained Earnings	₹ 1.5 cr.	0.15	16%	2.4%
New Equity Shares	₹ 3.5 cr.	0.35	18.25%	6.39%
15% Debt	₹ 2.5 cr.	0.25	15% (1-0.4) = 9%	2.25%
16% Debt	₹ 2.5 cr.	0.25	16% (1-0.4) = 9.6%	2.4%
	₹ 10 cr.			13.44%

$$K_e \text{ (Existing)} = \frac{D_1}{MP} + g = \frac{3.60}{40} + 7\% = 16\%$$

$$K_e \text{ (New)} = \frac{D_1}{NP} + g = \frac{3.60}{32} + 7\% = 18.25\%$$

Answer to Question no.3:

Statement showing Working Capital Requirement

Particulars	Amount(₹)
Stock of Raw Material	10,00,000
Stock of WIP	3,75,000
Stock of Finished Goods	10,00,000
Debtors	16,00,000
Cash in hand	25,000
Total Current Assets	40,00,000
Less: Creditors	5,00,000
Working Capital	35,00,000
Add :20% Safety Margin	7,00,000
Sales	42,00,000

Note : 1 Computation of Cash Sales and Credit Sales

Assume Credit Sales = ₹x

Cash Sales = ₹x less 75% = 0.25x.

Now,

Credit Sales + Cash Sales = Total Sales

⇒ Total Sales = ₹x + ₹ 0.25x = 1.25x

It is observed that credit sale is 80% and cash sale is 20% of total sales.

Note : 2 (Monthly Statement)

Raw Materials (25,000 units x ₹ 20 / unit)	₹ 5,00,000
Labour Cost (25,000 units x ₹ 5 / unit)	₹ 1,25,000
Cash Factory OH (25,000 units x ₹ 15 / unit)	₹ 3,75,000
Cash Production Cost	₹ 10,00,000
Cash Administration Overheads	NIL
Cash Selling Overheads	NIL
Cash Total Cost	₹ 10,00,000
Depreciation (25,000 units x ₹ 5 / unit)	₹ 1,25,000
Total Cost	₹ 11,25,000
Profit	₹ 1,25,000
Sales (25,000 units x ₹ 50 / unit)	₹ 12,50,000

Note: 3 (Stock of Raw Material) : Since raw material holding period is 2 months, the stock of raw material is equal to 2 month's consumption, i.e. $2 \times 5,00,000 = ₹ 10,00,000$.

Note: 4 (Stock of WIP): We are given that WIP holding period is $\frac{1}{2}$ month. Assuming that material cost is 100% spent and labour and overheads are 50% spent, the stock of WIP is computed below:

Material (₹ 5,00,000 p.m. $\times 1/2$ month $\times 100\%$)	₹ 50,000
Wages (₹ 1,25,000 p.m. $\times 1/2$ month $\times 50\%$)	₹ 31,250
Cash Factory OH (₹ 3,75,000 p.m. $\times 1/2$ month $\times 50\%$)	₹ 93,750 ₹ 3,75,000

Note: 5 (Stock of Finished Goods): Since finished goods holding period is 1 month, the stock of finished goods is equal to 1 month cash production cost i.e. ₹ 10,00,000.

Note : 6 (Debtors): Since debtors collection period is 2 months, the investment is equal to 2 months cash total cost in context of credit sales, i.e. $(₹ 10,00,000 \text{ p.m.} \times 80/100) \times 2 \text{ months} = ₹ 16,00,000$

Note: 7 (Creditors): Since creditors' payment period is 1 month, the creditors balance is equal to 1 month credit purchases, i.e. ₹ 5,00,000.

Answer to Question no.4:

- (a)** Monetary Policy means the policy adopted by Central Bank for directly controlling the money supply and indirectly controlling the demand for money. Central Bank (RBI) regulates the monetary policy for following intentions:-
- (i) Controlling the availability of money and credit.
 - (ii) Controlling the demand for money in some priority sectors like housing sector, education sector and medical sector.
 - (iii) Ensuring price stability.
 - (iv) Avoiding foreign exchange fluctuations.
 - (v) Achieving the situation of full employment.
- (b)** (i) Cash Reserve Ratio is specific % of Net Demand and Time Liabilities (NDTL) which the banks are required to deposit with the Central Bank (RBI). Demand Liabilities are required to be repaid on demand whereas Time Liabilities are required to be repaid after specific time. At present, CRR is 3% (The student must get himself or herself updated regarding CRR).
- (ii) CRR has to be made in the form of cash deposit with RBI on which no interest is paid.
 - (iii) During recession, RBI reduces CRR which increases the lending powers of the bank. It will increase the availability of money in the hand of various households and firms. This will act as a reason for increase in Aggregate Demand in the economy.
 - (iv) During inflation, RBI increases CRR which decreases the lending powers of the bank. It will decrease the availability of money in the hands of various households of firms. This will act as a reason for decrease in Aggregate Demand in the economy.

(c) Limitation/Criticism

- 1) This theory assumes following factors as constant (a) V (Velocity of Actual Money) (b) V' (Velocity of Credit Money) and (c) number of transactions (T). However, in real life, this assumption may not be true.
- 2) This theory assumes that price level is a passive factor. However, in real circumstances, we may observe such situation here inflation first increase the price level and thereafter, the Central Bank has to change the money supply.
- 3) Fisher's theory fails to sustain the test of time. During recession, there is no reduction in money supply but the average price fall because public-at-large may decide not to spend.
- 4) This theory assumes that there is direct relationship between money supply and average price level but this assumption is valid only in the situation of full employment (which is myth).
- 5) Non-monetary factors are ignored, i.e., the price of many goods and services are dependent upon personal likings technology advancement and other non-monetary factors.

(d) Credit Multiplier

- 1) **Meaning:-** Credit Multiplier describes the amount of money which is created by the banks through the procedure of lending the money in excess of the reserve requirements.

2) Formula:-

$$\text{Total Money created} = \text{Amount of Deposit} \times \text{Credit Multiplier}$$

$$\text{Credit Multiplier} = \frac{1}{\text{Reserve Ratio}}$$

3) Example:- Suppose, a person deposits ₹ 10,000 in his bank account. Let us assume that the banks keep reserve of 20% and balance 80%, i.e., ₹ 8,000 are lent to the customers on this further deposit, the bank will keep 20% reserve and balance 80%, i.e., ₹ 6,400 will be further used for tending purchases. This procedure will go on.

$$\begin{aligned}\text{Total money created} &= 10,000 + 8,000 + 6,400 = \frac{\text{First Term}}{1 - \text{commonratio}} (\because \text{it is G.P.}) \\ &= \frac{\text{₹ }10,000}{1 - 0.80} = \frac{10,000}{0.20} \text{ ₹ }50,000.\end{aligned}$$

4) Alternatively, Total Money created = Amount of Deposit X Credit Multiplier
= ₹ 10,000 X 5 = ₹ 50,000.

$$\text{Credit Multiplier} = \frac{1}{\text{Reserve Ratio}} = \frac{1}{0.20} = 5$$

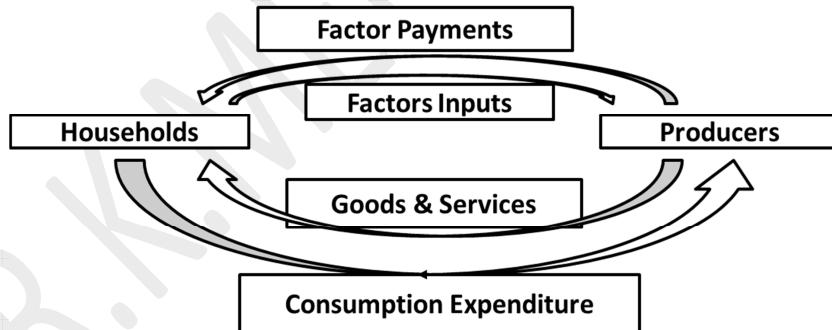
5) There is inverse relationship between reserve ratio and Total Money which can be credited.
If reserve ratio is less, in such a case, through the deposits.

Answer to Question no.5:

(a) Net Factor Income from Abroad (NFIA) means the difference between (i) total amount which the citizens and companies of a country earn abroad and (ii) total amount which foreign citizens and companies earn in that country. If Indian citizens and companies earn ₹ 2,00,000 crores from abroad and foreign citizens and companies earn ₹ 75,000 crores from India, then NFIA is the difference amount of ₹ 1,250,000 crores. If NFIA is positive, it increases the National Income. On the other hand, if NFIA is negative, then National Income decreases.

(b) Concept of Leakages and Injections

1) Circular Flow of Income:-



- 2) Concept of Leakages:- It reduces the flow of income and it arises due to savings. Taxes and imports. Import is regarded as leakage due to the reason of transfer of "earned income" from domestic country to foreign country. Due to leakage, the availability of money reduces in domestic economy and producers are forced to produce lesser quantity of goods in future.
- 3) Concept of Injections:- It increases the flow of income and it arises due to investments, government spending and Exports. Export is regarded as injection due to the reason of transfer of "earned income" from foreign country to domestic country. Due to injection, the availability of money increases in domestic economy and the producers are tempted to produce more quantity in the future.

(c) Concept of Investment Multiplier

- a) Formula:-

$$\text{Investment Multiplier} = \frac{\Delta Y}{\Delta I}$$

ΔY = Change in Income

ΔI = Change in Investment

- b) Example :- Suppose, additional investment of ₹ 400 crores creates additional income of ₹ 2,000 crores in the economy, in such a case, the investment multiplier is 5 times.
- c) Meaning:- Investment Multiplier explains the relationship between additional investment and additional income as a consequence. It describes the magnitude of additional income (in times) due to the reason of additional investment made in economy.
- d) The investment multiplier can be compared with “Ripple Effect of Water” in which we identify huge amount of increase in national income.
- e) Relationship between Investment & MPC:-

Example:- Initial Investment = ₹ 400 cr.

$$\text{MPC} = 0.80.$$

Total increase in National Income

$$\begin{aligned} &= ₹ 400 \text{ cr.} + (₹ 400 \text{ cr.} \times 0.80) + ₹ 400 \text{ cr.} \times (0.80) \\ &\quad + \\ &= \frac{\text{First Term}}{1 - \text{common ratio}} = \frac{400}{1-0.80} = \frac{400}{0.20} ₹ 2,000 \text{ cr.} \end{aligned}$$

(d) National Income by Income Method:-

$$\begin{aligned} \text{NDP}_{\text{FC}} &= \text{Wages} + \text{Rent} + \text{Interest} + \text{Profit} + \text{Mixed Income of Self employed} \\ &= \text{Wages} + \text{Operating Surplus} + \text{Mixed Income of Self-employed} \\ &= 1,900 + 720 + \text{Nil} + ₹ 2,620 \text{ crores.} \end{aligned}$$

$$\text{NNP}_{\text{FC}} = \text{NDP}_{\text{FC}} + \text{NFIA} = 2,620 - 20 = ₹ 2,600 \text{ crores.}$$

National Income by Expenditure Method:-

$$\begin{aligned} \text{GDP}_{\text{MP}} &= \text{Private Final Consumption Expenditure} (\₹ 2,000 \text{ crores}) \\ &\quad + \text{Government Final Consumption Expenditure} (\₹ 600 \text{ crores}) \\ &\quad + \text{Gross Domestic Capital Formation} (\₹ 500 \text{ crores}) \\ &\quad + \text{Net Exports} (\₹ 20 \text{ crores}) \\ &= ₹ 3,120 \text{ crores.} \end{aligned}$$

$$\text{NDP}_{\text{MP}} = \text{GDP}_{\text{MP}} - \text{Depreciation} = 3,120 - 100 = ₹ 3,020 \text{ crores.}$$

$$\text{NDP}_{\text{FC}} = \text{NDP}_{\text{MP}} - \text{Net Indirect Taxes} = 3,020 - 400 = ₹ 2,620 \text{ crores.}$$

$$\text{NNP}_{\text{FC}} = \text{NDP}_{\text{FC}} + \text{NFIA} = 2,620 + (-20) = ₹ 2,600 \text{ crores.}$$

Gross Domestic Capital Formation

$$\begin{aligned} &= \text{Net Capital Formation} + \text{Depreciation} \\ &= ₹ 400 \text{ crores} + ₹ 100 \text{ crores} = ₹ 500 \text{ crores.} \end{aligned}$$