Test Series: October, 2021

MOCK TEST PAPER 1

INTERMEDIATE (NEW): GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

8A : FINANCIAL MANAGEMENT

SUGGESTED ANSWERS/ HINTS

1. (a) 1. Valuation of firms

Particulars	Levered Firm (₹)	Unlevered Firm (₹)
EBIT	60,000	60,000
Less: interest (1,50,000 x 10%)	15,000	Nil
Earnings available to Equity Shareholder/K_e	45,000	60,000
	12%	12%
Value of Equity	3,75,000	5,00,000
Debt	1,50,000	Nil
Value of Firm	5,25,000	5,00,000

Value of Levered company is more than that of unlevered company. Therefore, investor will sell his shares in levered company and buy shares in unlevered company. To maintain the level of risk he will borrow proportionate amount and invest that amount also in shares of unlevered company.

2. Investment & Borrowings

Sell shares in Levered company (3,75,000x20%)	75,000
Borrow money (1,50,000 x 20%)	30,000
Buy shares in Unlevered company	1,05,000

3. Change in Return

Income from shares in Unlevered company (1,05,000 x 12%)	12,600
Less: interest on loan (30,000 x 10%)	3,000
Net Income from unlevered firm	9,600
Income from Levered firm (75000 x 12%)	9,000
Incremental Income due to arbitrage	600

(b) (i) Computation of the weighted average cost of capital

Source of finance (a)	Market Value of capital (₹)	Weight (b)	After tax Cost of capital (%) (c)	WACC (%) (d) = (b) × (c)
Equity share (Working note 1) [₹120 × 2,00,000 shares]	2,40,00,000	0.6154	15	9.231
9% Preference share	60,00,000	0.1538	9	1.3842
8% Debentures	90,00,000	0.2308	5.60	1.2925
	3,90,00,000	1.0000		11.9077

(ii) Computation of Revised Weighted Average Cost of Capital

Source of finance (a)	Market Value of capital (₹)	Weight (b)	After tax Cost of capital (%) (c)	WACC (%) (d) = (b) × (c)
Equity shares (Working note 2) [₹115 × 2,00,000 shares]	2,30,00,000	0.3966	17.17	6.8096
9% Preference shares	60,00,000	0.1034	9.00	0.9306
8% Debentures	90,00,000	0.1552	5.60	0.8691
12% Loan	2,00,00,000	0.3448	8.40	2.8963
	5,80,00,000	1.0000		11.5056

Working Notes:

(1) Cost of Equity Shares

K_e = {Dividend Per Share (D_1)/Market Price Share (P_0)} + Growth Rate

= 12/120 + 0.05

= 0.15 or 15%

(2) Revised cost of equity shares (K_e)

Revised K_e = 14/115 + 0.05

= 0.1717 or 17.17%

(c) (i) Calculation of Average Inventory

Since gross profit is 25% of sales, the cost of goods sold should be 75% of the sales.

$$\text{Cost of goods sold} = 10,00,000 \times \frac{75}{100} = 7,50,000$$

$$\text{Inventory Turnover} = \frac{\text{Cost of goods sold}}{\text{Average Inventory}}$$

$$3 = \frac{7,50,000}{\text{Average Inventory}}$$

$$\text{Average Inventory} = \frac{7,50,000}{3} = 2,50,000$$

(ii) Calculation of Average Collection Period

$$\text{Average Collection Period} = \frac{\text{Average Debtors}}{\text{Credit Sales}} \times 360$$

$$\text{Where, Average Debtors} = \frac{\text{Opening Debtors} + \text{Closing Debtors}}{2}$$

Calculation of Closing balance of debtors

	₹	₹
Current Assets (2 x 2,00,000)		4,00,000
Less: Inventories	80,000	

Marketable Securities	50,000	
Cash	30,000	1,60,000
Debtors Closing Balance		**2,40,000**

Now, Average Debtors = $\frac{1,50,000+2,40,000}{2}$ = 1,95,000

So, Average Collection Period = $\frac{1,95,000}{10,00,000}$ x 360 = 70.2 or 70 days

(d) Given,

Cost of Equity (Ke)	12%
Number of shares in the beginning (n)	40,000
Current Market Price (P_0)	₹200
Net Profit (E)	₹5,00,000
Expected Dividend (D_1)	₹10 per share
Investment (I)	₹10,00,000

Situation 1 – When dividends are paid

(i) $P_0 = \frac{P1+D1}{1+Ke}$

$200 = \frac{P1+10}{1+0.12}$

$P_1 + 10 = 200 \times 1.12$

$P_1 = 224 - 10 = 214$

(ii) Calculation of funds required

= Total Investment - (Net profit - Dividend)

= 10,00,000 - (5,00,000 – 4,00,000)

= 9,00,000

(iii) No. of shares required to be issued for balance fund

No. of shares = $\frac{\text{Funds Required}}{\text{Price at end (P1)}}$

$\Delta n = \frac{9,00,000}{214}$ = 4205.61

(iv) Calculation of value of firm

$V_f = \frac{(n+\Delta n)P1-I+E}{1+Ke}$

Situation 2 – When dividends are not paid

(i) $P_0 = \frac{P1+D1}{1+Ke}$

$200 = \frac{P1+0}{1+0.12}$

$P_1 + 0 = 200 \times 1.12$

$P_1 = 224 - 0 = 224$

(ii) Calculation of funds required

= Total Investment - (Net profit - Dividend)

= 10,00,000 – (5,00,000 - 0)

= 5,00,000

(iii) No. of shares required to be issued for balance fund

No. of shares = $\frac{\text{Funds Required}}{\text{Price at end (P1)}}$

$\Delta n = \frac{5,00,000}{224}$ = 2232.14

(iv) Calculation of value of firm

$V_f = \frac{(n+\Delta n)P1-I+E}{1+Ke}$

$$= \frac{(40,000 + \frac{9,00,000}{214}) 214 - 10,00,000 + 5,00,000}{1 + 0.12} \qquad = \frac{(40,000 + \frac{5,00,000}{224}) 224 - 10,00,000 + 5,00,000}{1 + 0.12}$$

$$= \frac{94,60,000 - 5,00,000}{1.12} = 80,00,000 \qquad = \frac{94,60,000 - 5,00,000}{1.12} = 80,00,000$$

2. (i) Computation of Earnings per share (EPS)

Plans	A	B	C
Earnings before interest and tax (EBIT)	10,00,000	10,00,000	10,00,000
Less: Interest charges	---	(20,000) (10% × ₹2 lakh)	---
Earnings before tax (EBT)	10,00,000	9,80,000	10,00,000
Less: Tax (@ 30%)	(3,00,000)	(2,94,000)	(3,00,000)
Earnings after tax (EAT)	7,00,000	6,86,000	7,00,000
Less: Preference Dividend	---	---	(20,000) (10% × ₹2 lakh)
Earnings available for Equity shareholders (A)	7,00,000	6,86,000	6,80,000
No. of Equity shares (B)	20,000 (₹ 4 lakh ÷ ₹ 20)	10,000 (₹ 2 lakh ÷ ₹ 20)	10,000 (₹ 2 lakh ÷ ₹ 20)
EPS ₹ [(A) ÷ (B)]	35	68.6	68

(ii) Calculation of Financial Break-even point

Financial break-even point is the earnings which are equal to the fixed finance charges and preference dividend.

Plan A: Under this, plan there is no interest or preference dividend payment. Hence, the Financial Break-even point will be zero.

Plan B: Under this plan, there is an interest payment of ₹ 20,000 and no preference dividend. Hence, the Financial Break-even point will be ₹ 20,000 (Interest charges).

Plan C: Under this plan, there is no interest payment but an after tax preference dividend of ₹ 20,000 is paid. Hence, the Financial Break- even point will be before tax earnings of ₹ 28,571 (i.e. ₹ 20,000 ÷ 0.7)

(iii) Computation of indifference point between the plans.

The indifference between two alternative methods of financing is calculated by applying the following formula.

$$\frac{(EBIT - I_1)(1 - T)}{E_1} = \frac{(EBIT - I_2)(1 - T)}{E_2}$$

Where,

EBIT = Earnings before interest and tax.

I_1 = Fixed charges (interest or pref. dividend) under Alternative 1

I_2 = Fixed charges (interest or pref. dividend) under Alternative 2

T = Tax rate

E_1 = No. of equity shares in Alternative 1

E_2 = No. of equity shares in Alternative 2

Now, we can calculate indifference point between different plans of financing.

(a) Indifference point where EBIT of Plan A and Plan B is equal.

$$\frac{(EBIT-0)(1-0.3)}{20000} = \frac{(EBIT-20,000)(1-0.3)}{10,000}$$

0.7 EBIT (10,000) = (0.7 EBIT – 14,000) (20,000)

7,000 EBIT = 14,000 EBIT – 28 crores

EBIT = 40,000

(b) Indifference point where EBIT of Plan A and Plan C is equal

$$\frac{(EBIT-0)(1-0.3)}{20000} = \frac{(EBIT-0)(1-0.3)-20,000}{10,000}$$

0.7 EBIT (10,000) = (0.7 EBIT – 20,000) (20,000)

7000 EBIT = 14,000 EBIT – 40 crores

EBIT = 57,142.86

(c) Indifference point where EBIT of Plan B and Plan C are equal

$$\frac{(EBIT-20,000)(1-0.3)}{10000} = \frac{(EBIT-0)(1-0.3)-20,000}{10,000}$$

(0.7 EBIT – 14,000) (10,000) = (0.7 EBIT – 20,000) (10,000)

7,000 EBIT – 14 crore = 7,000 EBIT - 20 crore

There is no indifference point between the financial plans B and C.

3. (i) Project's Initial Cash Outlay

Cost	20,00,000
Installation Expenses	1,00,000
Total Cash Outflow	21,00,000
Depreciation per year = 21,00,000/5 =	4,20,000

Project's Operating Cash Flows over its 5-year life

Savings (A)

Reduction in salaries (₹ 3,00,000 x 5)	15,00,000
Reduction in production delays	3,00,000
Reduction in lost sales	2,50,000
Gains due to timely billing	2,00,000
	22,50,000

Costs (B)	
- Depreciation	4,20,000
- Additional Specialist Cost (₹ 5,00,000 x 2)	10,00,000
- Maintenance Cost	1,50,000
	15,70,000
Increase in Profit before tax **(A – B)**	6,80,000
Less: Tax @ 30%	2,04,000
Profit after tax	**4,76,000**

Cash Inflows = Profit after tax + Depreciation

= 4,76,000 + 4,20,000 = **8,96,000**

(ii) Evaluation of the project by using NPV Method

Year	Cash Inflows	PVAF (12%,5y)	Total PV
1-5	8,96,000	3.605	32,30,080
Less: Total Initial Cash Outflow			21,00,000
Net Present Value			**11,30,080**

Since NPV is positive, therefore, the project is acceptable.

Evaluation of the project by using Profitability Index Method

Profitability Index = Present Value of Cash Inflows/Present Value of Cash Outflows

= 32,30,080/21,00,000

= 1.538

Since, the profitability index is more than 1, the project is acceptable.

Calculation of the Project's Payback*

Year	Net Cash Flow	Cumulative Cash Flow
1	8,96,000	8,96,000
2	8,96,000	17,92,000
3	8,96,000	26,88,000
4	8,96,000	35,84,000
5	8,96,000	44,80,000

Here, the payback period is 2 years plus a fraction of the 3rd year

So, payback period = 2 years + 3,08,000/8,96,000

= 2.34 years

* Payback period may also be solved directly as follows: 21,00,000/8,96,000 = 2.34 years

(iii) Project's cash flows and NPV assuming that the book salvage for depreciation purpose is ₹ 2,00,000

Depreciation = (₹ 21,00,000 – 2,00,000)/5 = 3,80,000

Cash Inflows for the years 1 to 5 are:

Savings (calculated as earlier) 22,50,000

Less: Costs		
- Depreciation	3,80,000	
- Additional Specialists cost	10,00,000	
- Maintenance cost	1,50,000	15,30,000
Profit before tax		**7,20,000**
Less: Tax @ 30%		2,16,000
Profit after tax		5,04,000
Cash Inflow (5,04,000 + 3,80,000)		8,84,000

Calculation of NPV

It may be noted that at the end of year 5, the book value of the project would be ₹ 2,00,000 but its realizable value is nil. So, the capital loss of ₹ 2,00,000 will result in tax savings of ₹ 60,000 (i.e., ₹ 2,00,000 x 30%), as the capital loss is available for tax purposes in view of the information given. Therefore, at the end of year 5, there would be an additional inflow of ₹ 60,000. The NPV may now be calculated as follows:

Year	Cash Flow (₹)	PVAF (12%, n)	PV
1-5	8,84,000	3.605	31,86,820
5	60,000	0.567	34,020
PV of inflows			32,20,840
Outflows			21,00,000
NPV			11,20,840

As the NPV of the project is positive, the project is acceptable.

4. Working Notes:

(i) Cost of Goods Sold = Sales – Gross Profit (25% of Sales)

= ₹ 30,00,000 – ₹ 7,50,000

= ₹ 22,50,000

(ii) Closing Stock = Cost of Goods Sold / Stock Turnover

= ₹ 22,50,000/6 = ₹ 3,75,000

(iii) Fixed Assets = Cost of Goods Sold / Fixed Assets Turnover

= ₹ 22,50,000/1.5

= ₹ 15,00,000

(iv) Current Assets:

Current Ratio = 1.5 and Liquid Ratio = 1

Stock = 1.5 – 1 = 0.5

Current Assets = Amount of Stock × 1.5/0.5

= ₹ 3,75,000 × 1.5/0.5 = ₹ 11,25,000

(v) Liquid Assets (Debtors and Cash)

= Current Assets – Stock

= ₹ 11,25,000 – ₹ 3,75,000

= ₹ 7,50,000

(vi) Debtors = Sales × Debtors Collection period /12

= ₹ 30,00,000 × 2 /12

= ₹ 5,00,000

(vii) Cash = Liquid Assets – Debtors

= ₹ 7,50,000 – ₹ 5,00,000 = ₹ 2,50,000

(viii) Net worth = Fixed Assets /1.2

= ₹ 15,00,000/1.2 = ₹ 12,50,000

(ix) Reserves and Surplus

Reserves and Share Capital = 0.6 + 1 = 1.6

Reserves and Surplus = ₹ 12,50,000 × 0.6/1.6

= ₹ 4,68,750

(x) Share Capital = Net worth – Reserves and Surplus

= ₹ 12,50,000 – ₹ 4,68,750

= ₹ 7,81,250

(xi) Current Liabilities = Current Assets/Current Ratio

= ₹ 11,25,000/1.5 = ₹ 7,50,000

(xii) Long-term Debts

Capital Gearing Ratio = Long-term Debts / Equity Shareholders' Fund

Long-term Debts = ₹ 12,50,000 × 0.5 = ₹ 6,25,000

(a) Preparation of Balance Sheet of a Company

Balance Sheet

Liabilities	Amount (₹)	Assets	Amount (₹)
Equity Share Capital	7,81,250	Fixed Assets	15,00,000
Reserves and Surplus	4,68,750	Current Assets	
Long-term Debts	6,25,000	Stock	3,75,000
Current Liabilities	7,50,000	Debtors	5,00,000
		Cash	2,50,000
	26,25,000		**26,25,000**

(b) Statement Showing Working Capital Requirement

	(₹)	(₹)
Current Assets		
(i) Stocks		3,75,000
(ii) Receivables (Debtors)		5,00,000
(iii) Cash in hand & at bank		2,50,000
A. Current Assets: Total		11,25,000
Current Liabilities		
B. Current Liabilities: Total		7,50,000
Net Working Capital (A – B)		3,75,000
Add: Provision for contingencies (1/9th of Net Working Capital)		41,667
Working capital requirement		**4,16,667**

5. (a) (i) Financial leverage

Combined Leverage = Operating Leverage x Financial Leverage

So, financial leverage = Combined Leverage/Operating Leverage

= 2.8/1.4 = 2

(ii) P/V Ratio and EPS

$$\text{Operating Leverage} = \frac{\text{Contribution}}{\text{Contribution} - \text{Fixed Cost}}$$

$$1.4 = \frac{\text{Contribution}}{\text{Contribution} - 2,10,000}$$

1.4 Contribution – 2,94,000 = Contribution

0.4 Contribution = 2,94,000

Contribution = 7,35,000

$$\text{Now, P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100 = \frac{7,35,000}{40,00,000} \times 100 = 18.375\%$$

$$\text{EPS} = \frac{\text{Profit after tax (PAT)}}{\text{No. of equity shares}}$$

Earning before tax (EBT) = Contribution – Fixed Cost – Interest

= 7,35,000 – 2,10,000 – 2,50,000

= 2,75,000

Profit after tax = EBT – Tax @ 30%

= 2,75,000 – 82,500

= 1,92,500

$$\text{EPS} = \frac{1,92,500}{2,00,000} = 0.9625$$

(iii) Asset Turnover

Total Assets = Equity Share Capital + Debentures = ₹ 20 lakhs + ₹ 25 lakhs = ₹ 45 lakhs

$$\text{Asset Turnover} = \frac{\text{Sales}}{\text{Total Assets}} = \frac{40,00,000}{45,00,000} = 0.89$$

0.89 < 1.6, means lower than industry turnover.

(iv) EBT zero means 100% reduction in EBT. Since combined leverage is 2.8, sales have to be dropped by 100/2.8 = 35.71%. Hence new sales will be

40,00,000 x (100% - 35.71%) = 25,71,600

(b) Electronic Fund Transfer: With the developments which took place in the information technology, the present banking system has switched over to the computerization of banks branches to offer efficient banking services and cash management services to their customers. The network will be linked to the different branches, banks. This helped the customers in the following ways:

(i) Instant updating of accounts.

(ii) Quick transfer of funds.

(iii) Instant information about foreign exchange rates.

6. (a) The three finance function decisions are as follows:

Investment decisions: These decisions relate to the **selection of assets in which funds will be invested by a firm.** Funds procured from different sources have to be invested in various kinds of assets. Long term funds are used in a project for various fixed assets and also for current assets. The investment of funds in a project has to be made after careful assessment of the various projects through capital budgeting. A part of long-term funds is also to be kept for financing the working capital requirements.

Financing decisions: These decisions relate to **acquiring the optimum finance** to meet financial objectives and seeing that fixed and working capital are effectively managed. The financial manager needs to possess a good knowledge of the sources of available funds and their respective costs and needs to ensure that the company has a sound capital structure, i.e. a proper balance between equity capital and debt. Such managers also need to have a very clear understanding as to the difference between profit and cash flow, bearing in mind that profit is of little use unless the organisation is adequately supported by cash to pay for assets and sustain the working capital cycle.

Dividend decisions: These decisions relate to the **determination as to how much and how frequently cash can be paid out of the profits** of an organization as income for its owners/shareholders. The dividend decision thus has two elements – the amount to be paid out and the amount to be retained to support the growth of the organization, the latter being also a financing decision. The level and regular growth of dividends represent a significant factor in determining a profit-making company's market value, i.e. the value placed on its shares by the stock market.

(b) Sensitivity Analysis and its various steps: Sensitivity analysis put in simple terms is a modeling technique which is used in Capital Budgeting decisions which is used to study the **impact of changes in the variables on the outcome of the project**. In a project, several variables like weighted average cost of capital, consumer demand, price of the product, cost price per unit etc. operate simultaneously.

The changes in these variables impact the outcome of the project. It therefore becomes very difficult to assess change in which variable impacts the project outcome in a significant way. In Sensitivity Analysis, the project outcome is studied after taking into **change in only one variable.**

The more sensitive is the NPV, the more critical is that variable. So, Sensitivity analysis is a way of finding impact in the project's NPV (or IRR) for a given change in one of the variables.

Sensitivity Analysis is conducted by following the steps as below:

(i) Finding variables, which have an influence on the NPV (or IRR) of the project.

(ii) Establishing mathematical relationship between the variables.

(iii) Analysis the effect of the change in each of the variables on the NPV (or IRR) of the project.

(c) Two main objectives of Financial Management

Profit Maximisation

It has traditionally been argued that the primary objective of a company is to earn profit; hence the objective of financial management is also profit maximisation. This implies that the finance manager has to make his decisions in a manner so that the profits of the concern are maximised. Each alternative, therefore, is to be seen as to whether or not it gives maximum profit.

Wealth / Value Maximisation

We will first like to define what is Wealth / Value Maximization Model. Shareholders wealth are the result of cost benefit analysis adjusted with their timing and risk i.e. time value of money.

So, Wealth = Present Value of benefits – Present Value of Costs

It is important that benefits measured by the finance manager are in terms of cash flow. Finance manager should emphasis on Cash flow for investment or financing decisions not on Accounting profit. The shareholder value maximization model holds that the primary goal of the firm is to maximize its market value and implies that business decisions should seek to increase the net present value of the economic profits of the firm.

OR

(c) Financial Needs of a Business: Business enterprises need funds to meet their different types of requirements. All the financial needs of a business may be grouped into the following three categories-

Long-term financial needs: Such needs generally refer to those requirements of funds which are for a period exceeding **5-10 years**. All investments in plant, machinery, land, buildings, etc., are considered as long-term financial needs.

Medium- term financial needs: Such requirements refer to those funds which are required for a period exceeding one year but not exceeding 5 years.

Short- term financial needs: Such type of financial needs arises to finance current assets such as stock, debtors, cash, etc. Investment in these assets is known as meeting of working capital requirements of the concern for a period not exceeding one year.

PAPER 8B: ECONOMICS FOR FINANCE

SUGGESTED ANSWER

1. (a) Personal income is a measure of actual current income receipts of persons from all sources which may or may not be earned from productive activities during a given period. Personal income excludes retained earnings, indirect business taxes, corporate income taxes and contributions towards social security.

Personal Income = NI - Undistributed profits – Net interest payments made by households – Corporate Tax +Transfer Payments to the households from firms and government.

Disposable personal income is a measure of amount of the money in the hands of the individuals that is available for their consumption or savings. Disposable personal income is derived from personal income by subtracting the direct taxes paid by individuals and other compulsory payments made to the government

Disposable Income = Personal Income - Personal Income Taxes – Nontax payments

(b) Fiscal policy involves the use of government spending, taxation and borrowing to influence both the pattern of economic activity and level of growth of aggregate. demand, output, and employment. It includes any design on the part of the government to change the price level, composition, or timing of government expenditure or to alter the burden, structure, or frequency of tax payment. In other words, fiscal policy is designed to influence the pattern and level of economic activity in a country.

(c) GVAmp = GVAmp – Intermediate Consumption

= (Sales + Change in stock)- Intermediate Consumption

= 2500 – 800

= 1700 cr

GDPmp = GVAmp = 1700cr

NDPmp = GDP mp – Consumption of fixed Capital

= 1700 – 300

= 1400cr

NDPfc = NDPmp- Net Indirect taxes

= 1400- 400

= 1000cr

NDPfc = Compensation of employees + Operating Surplus + Mixed Income

1000 = 200 + operating surplus + 700

Operating Surplus = 100cr

(d) The monetary policy is intended to influence macro- economic variables such as aggregate demand, quantity of money and credit, interest rates etc., so as to influence overall economic performance. The process or channels through which the change of monetary aggregates affects the level of product and prices is known as 'monetary transmission mechanism'.

Generally central banks use the short-term interest rate as the policy instrument. These interest rate changes affect macro-economic variables such as consumption, investment, and exports which in turn influence aggregate demand, output, and employment. Changes in monetary policy

may have impact on people's expectations about inflation and therefore on aggregate demand. This in turn affects employment and output in the economy.

2. (a) In the preparation of State income estimates, certain activities such as railways, communications, banking. and insurance and central government administration, that cut across state boundaries, and thus their economic contribution cannot be assigned to any one state directly are known as the 'supra-regional sectors' of the economy. The estimates for these supra regional activities are compiled for the economy as a whole and allocated to the states based on relevant indicators.

(b) The classical economists maintained that the economy is self-regulating and is always capable of automatically achieving equilibrium at the 'natural level' of real GDP or output, which is the level of real GDP that is obtained when the economy's resources are fully employed. . If an excess in the labour force (unemployment) or products exist, the wage or price of these will adjust to absorb the excess. According to them, there will be no involuntary unemployment.

Keynesian believe that prices and wages are not so flexible; they are sticky, especially downward. The stickiness of prices and wages in the downward direction prevents the economy's resources from being fully employed and thereby prevents the economy from returning to the natural level of real GDP. Therefore, output will remain at less than the full employment level as long as there is insufficient spending in the economy

(c) Classical Approach: Changes in the general level of commodity prices or changes in the value or purchasing power of money are determined first and foremost by changes in the quantity of money in circulation.

Fisher's version, also termed as 'equation of exchange' or 'transaction approach' is formally stated as follows:

MV = PT

Where, M = the total amount of money in circulation in an economy

V = transactions velocity of circulation

P = average price level

T = the total number of transactions.

Cambridge Approach

The demand for money was primarily determined by the need to conduct transactions which will have a positive relationship to the money value of aggregate expenditure. Since the latter is equal to money national income, the Cambridge money demand function is stated as:

Md = k PY

Md = is the demand for money balances,

Y = real national income

P = average price level of currently produced goods and services

PY = nominal income

K = proportion of nominal income (PY) that people want to hold as cash balances

The term 'k' in the above equation is called 'Cambridge k' is a parameter reflecting economic structure and monetary habits, namely the ratio of total transactions to income and the ratio of desired money balances to total transactions. The neoclassical theory changed the focus of the quantity theory of money-to-money demand and hypothesized that demand for money is a function of only money income.

(d) The law of comparative advantage states that even if one nation is less efficient than the other nation in the production of all commodities, there is still scope for mutually beneficial trade. The first nation should specialize in the production and export of the commodity in which its absolute disadvantage is smaller and import the commodity in which its absolute disadvantage is greater.

Ricardo based his law of comparative advantage on the 'labour theory of value', which assumes that the value or price of a commodity depends exclusively on the amount of labour going into its production. This is quite unrealistic because labour is not the only factor of production, nor is it used in the same fixed proportion in the production of all commodities.

The Heckscher-Ohlin theory of trade states that comparative advantage in cost of production is explained exclusively by the differences in factor endowments of the nations. In a general sense of the term, 'factor endowment' refers to the overall availability of usable resources including both natural and man-made means of production. Nevertheless, in the exposition of the modern theory, only the two most important factors—labour and capital—are taken into account.

The Heckscher-Ohlin Trade Theorem establishes that a country tends to specialize in the export of a commodity whose production requires intensive use of its abundant resources and imports a commodity whose production requires intensive use of its scarce resources.

3. **(a)** Usually it is difficult to separate labour income from capital income because in many instances people provide both labour and capital services. Such is the case with self-employed people like lawyers, engineers, traders, proprietors etc. Other's problems include:

(a) lack of an agreed definition of national income,

(b) accurate distinction between final goods and intermediate goods,

(c) issue of transfer payments,

(d) services of durable goods,

(e) difficulty of incorporating distribution of income,

(f) valuation of a new good at constant prices, and valuation of government services

(b) Subsidy is a form of market intervention by government. It involves the government directly paying part of cost to the producers or consumers in order to promote the production (consumption) of goods and services. The aim of subsidy is to intervene with market equilibrium to reduce the costs and thereby the market price of goods and services and encourage increased production and consumption. Major subsidies in India are fertiliser subsidy, food subsidy, interest subsidy, etc.

(c) Exchange rate changes affect economic activity in the domestic economy. A depreciation of domestic currency primarily increases the price of foreign goods relative to goods produced in the home country and diverts spending from foreign goods to domestic goods. Increased demand, both for domestic import-competing goods and for exports, encourages economic activity and creates output expansion. Overall, the outcome of exchange rate depreciation is an expansionary impact on the economy at an aggregate level. The positive effect of currency depreciation, however, largely depends on whether the switching of demand has taken place in the right direction and in the right amount, as well as on the capacity of the home economy to meet that increased demand by supplying more goods.

(d) The WTO Agreements as acknowledged in the preamble of the Agreement creating the World Trade Organization, include raising standards of living, ensuring full employment and a large and steadily growing volume of real income and effective demand, and expanding the production of and trade in goods and services. The WTO, whose primary purpose is to open trade for the benefit of all, does its functions by acting as a forum for trade negotiations among member governments, administering trade agreements, reviewing national trade policies, assisting

developing countries in trade policy issues, through technical assistance and training programmes and cooperating with other international organizations.

4. (a) The reason for market failure lies in the fact that though perfectly competitive markets work efficiently, most often the prerequisites of competition are unlikely to be present in an economy. Market power can cause markets to be inefficient because it keeps price higher and output lower than the outcome of equilibrium of supply and demand.

The demand-side market failures are said to occur when demand curves do not consider the full willingness of consumers to pay for a product. The supply-side market failures happen when supply curves do not incorporate the full cost of producing the product.

(b) GDPmp = Private final Consumption Expenditure + Government final Consumption expenditure + Gross domestic capital formation + Net Export

= 1800 +70 + (-80)

= 1790 Cr

NDPfc = GDPmp- Consumption of fixed Capital + Net Indirect Taxes

= 1790+60

= 1850 cr

NNPfc = NDPfc + Net factor Income from abroad

= 1850+40

= 1890 cr

(c) FDI is an important monetary source for India's economic development. The import-substitution strategy of industrialisation followed by India post-independence era, stressed on an extremely careful and selective approach while formulating FDI policy. The government's strategy favouring foreign investments and the prevalent robust business environment have ensured that foreign capital keeps flowing into the country

Modes of FDI is as follows:

(i) Opening of a subsidiary or associate company in a foreign country,

(ii) Equity injection into an overseas company,

(iii) Acquiring a controlling interest in an existing foreign company,

(iv) Mergers and acquisitions(M&A)

(v) Joint venture with a foreign company.

(vi) Green field investment (establishment of a new overseas affiliate for freshly starting production by a parent company).

(vii) Brownfield investments (a form of FDI which makes use of the existing infrastructure by merging, acquiring, or leasing, instead of developing a completely new one. For e.g., in India 100% FDI under automatic route is allowed in Brownfield Airport projects.

(d) Open Market Operations (OMO) is a general term used for market operations conducted by the Reserve Bank of India by way of sale/ purchase of Government securities to/ from the market with an objective to adjust the rupee liquidity conditions in the market on a durable basis. When the RBI feels there is excess liquidity in the market, it resorts to sale of securities thereby sucking out the rupee liquidity. Similarly, when the liquidity conditions are tight, the RBI will buy securities from the market, thereby releasing liquidity into the market.

5. **(a)** The tools of fiscal policy are taxes, government expenditure, public debt, and the budget. A recession sets in with a period of declining real income, as measured by real GDP and a situation of rising unemployment.

During recession incomes are reduced leading to lower tax payments. Government expenditures increase due to increased transfer payments. These together provide proportionally more disposable income available for consumption spending to households.

The tax policy during recession and depression, is framed to encourage private consumption and investment. A general reduction in income taxes and low corporate taxes increases aggregate demand and investments respectively.

(b) The Concept of Club goods was first studied by Buchanan. Impure public goods which are replicable and therefore individuals who are excluded from one facility may get similar services from an equivalent provider. Examples of club goods are facilities such as swimming pools, fitness centres etc.

(c) Empirical evidence of liquidity trap is found during the global financial crisis of 2008 in the United States and Europe. Short-term interest rates moved close to zero. Some economists argued that these developed economies were in a liquidity trap. Even tripling of the monetary base in the US between 2008 and 2011 failed to produce significant effect on the domestic prices.

When interest rates fall to very low levels, the expectation is that since the interest rate is very low it cannot go further lower and that in all possibility it will move upwards. When interest rates rise, the bond prices will fall. To hold bonds at this low interest rate is to take the almost certain risk of a capital loss. Therefore, the desire to hold bonds is very low and approaches zero, and the demand to hold money in liquid form as alternative to bond holding approaches infinity. In other words, investors would maintain cash savings rather than hold bonds. The speculative demand becomes perfectly elastic with respect to interest rate and the speculative money demand curve becomes parallel to the X axis. This situation is called a 'Liquidity trap'.

(d) Transaction, precautionary and speculative demand – depends on the nature of the holder-institutional payments mechanisms and the gap between receipt and use of money, amount of income and changes in incomes, general level of prices, cost of conversion from near money to money etc.