MOCK TEST PAPER

INTERMEDIATE (NEW): GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT& ECONOMICS FOR FINANCE

SECTION A: FINANICAL MANAGEMENT

Suggested Answers/ Hints

1. **(a)** In this case the company has paid dividend of ₹2 per share during the last year. The growth rate (g) is 5%. Then, the current year dividend (D_1) with the expected growth rate of 5% will be ₹ 2.10

The share price is = $P_o = \dfrac{D_1}{K_e - g}$

$$= \dfrac{₹2.10}{0.155 - 0.05}$$

$$= ₹ 20$$

    (i) In case the growth rate rises to 8% then the dividend for the current year (D_1) would be ₹ 2.16 and market price would be-

$$= \dfrac{₹2.16}{0.155 - 0.08}$$

$$= ₹ 28.80$$

    (ii) In case growth rate falls to 3% then the dividend for the current year (D_1) would be ₹2.06 and market price would be-

$$= \dfrac{₹2.06}{0.155 - 0.03}$$

$$= ₹16.48$$

So, the market price of the share is expected to vary in response to change in expected growth rate is dividends.

    (b) **(a)** $\text{G.P. ratio} = \dfrac{\text{Gross Profit}}{\text{Sales}} = 25\%$

$$\text{Sales} = \dfrac{\text{Gross Profit}}{25} \times 100 \ = \dfrac{₹8,00,000}{25} \times 100 \ = ₹32,00,000$$

        (b) Cost of Sales = Sales – Gross profit

= ₹ 32,00,000 - ₹ 8,00,000

= ₹ 24,00,000

        (c) Receivable turnover = $\dfrac{\text{Sales}}{\text{Receivables}}$ = 4

= Receivables = $\dfrac{\text{Sales}}{4}$

$$= \dfrac{₹32,00,000}{4} = ₹ 8,00,000$$

(d) Fixed assets turnover $= \dfrac{\text{Cost of Sales}}{\text{Fixed Assets}} = 8$

Fixed assets $= \dfrac{\text{Cost of Sales}}{8} = \dfrac{₹24,00,000}{8} = ₹\,3,00,000$

(e) Inventory turnover $= \dfrac{\text{Cost of Sales}}{\text{Average Stock}} = 8$

Average Stock $= \dfrac{\text{Cost of Sales}}{8} = \dfrac{₹24,00,000}{8} = ₹\,3,00,000$

Average Stock $= \dfrac{\text{Opening Stock} + \text{Closing Stock}}{2}$

Average Stock $= \dfrac{\text{Opening Stock} + \text{Opening Stock} + 20,000}{2}$

Average Stock $=$ Opening Stock $+ ₹\,10,000$

Opening Stock $=$ Average Stock $- ₹\,10,000$

$= ₹\,3,00,000 - ₹10,000$

$= ₹\,2,90,000$

Closing Stock $=$ Opening Stock $+ ₹\,20,000$

$= ₹\,2,90,000 + ₹\,20,000 = ₹\,3,10,000$

(f) Payable turnover $= \dfrac{\text{Purchase}}{\text{Payables}} = 6$

Purchases $=$ Cost of Sales + Increase in Stock

$= ₹\,24,00,000 + ₹\,20,000 = ₹\,24,20,000$

Payables $= \dfrac{\text{Purchase}}{6} = \dfrac{₹24,20,000}{6} = ₹\,4,03,333$

(g) Capital turnover $= \dfrac{\text{Cost of Sales}}{\text{Capital Employed}} = 2$

Capital Employed $= \dfrac{\text{Cost of Sales}}{2} = \dfrac{₹24,00,000}{2} = ₹\,12,00,000$

(h) Capital $=$ Capital Employed – Reserves & Surplus

$= ₹12,00,000 – ₹2,00,000 = ₹10,00,000$

Balance Sheet of T Ltd as on……

Liabilities	Amount (₹)	Assets	Amount (₹)
Capital	10,00,000	Fixed Assets	3,00,000
Reserve & Surplus	2,00,000	Inventories	3,10,000
Payables	4,03,333	Receivables	8,00,000
		Other Current Assets	1,93,333
	16,03,333		16,03,333

(c) Computation of Profits after Tax (PAT)

Particulars	Amount (₹)
Sales	84,00,000
Contribution (Sales × P/V ratio)	23,14,200
Less: Fixed cost (excluding Interest)	(6,96,000)
EBIT (Earnings before interest and tax)	16,18,200
Less: Interest on debentures (12% × ₹37 lakhs)	(4,44,000)
Less: Other fixed Interest (balancing figure)	(88,160)*
EBT (Earnings before tax)	10,86,040
Less: Tax @ 40%	4,34,416
PAT (Profit after tax)	6,51,624

(i) Operating Leverage:

$$= \frac{\text{Contribution}}{\text{EBIT}} = \frac{₹\,23,14,200}{₹\,16,18,200} = 1.43$$

(ii) Combined Leverage:

= Operating Leverage × Financial Leverage

= 1.43 × 1.49 = 2.13

Or,

$$\text{Combined Leverage} = \frac{\text{Contribution}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{EBT}}$$

Or, $\quad \text{Combined Leverage} = \dfrac{\text{Contribution}}{\text{EBT}} = \dfrac{₹\,23,14,200}{₹\,10,86,040} = 2.13$

$^{*}\text{Financial Leverage} \quad = \dfrac{\text{EBIT}}{\text{EBT}} = \dfrac{₹16,18,200}{\text{EBT}} = 1.49$

So, $\quad \text{EBT} = \dfrac{₹\,16,18,200}{1.49} = ₹10,86,040$

Accordingly, other fixed interest

= ₹16,18,200 - ₹ 10,86,040 - ₹ 4,44,000 = ₹ 88,160

(iii) Earnings per share (EPS):

$$= \frac{\text{PAT}}{\text{No. of shares outstanding}} = \frac{₹\,6,51,624}{5,00,000 \text{ equity shares}} = ₹1.30$$

(d) Alternative I: Acquiring the asset by taking bank loan:

	Years	1	2	3	4	5
(a)	Interest (@15% p.a. on opening balance)	1,50,000	1,20,000	90,000	60,000	30,000
	Depreciation (@15%WDV)	1,50,000	1,27,500	1,08,375	92,119	78,301

			3,00,000	2,47,500	1,98,375	1,52,119	1,08,301
(b)	Tax shield (@35%)		1,05,000	86,625	69,431	53,242	37,905
	Interest less Tax shield (a)-(b)		45,000	33,375	20,569	6,758	(7,905)
	Principal Repayment		2,00,000	2,00,000	2,00,000	2,00,000	2,00,000
	Total cash outflow		2,45,000	2,33,375	2,20,569	2,06,758	1,92,095
	Discounting Factor @ 16%		0.862	0.743	0.641	0.552	0.476
	Present Value		2,11,190	1,73,398	1,41,385	1,14,130	91,437

Total P.V of cash outflow = ₹7,31,540

Alternative II: Acquire the asset on lease basis

Year	Lease Rentals (₹)	Tax Shield @35%	Net Cash Outflow	Discount Factor	Present Value
1	3,34,000	1,16,900	2,17,100	0.862	1,87,140
2	3,34,000	1,16,900	2,17,100	0.743	1,61,305
3	3,34,000	1,16,900	2,17,100	0.641	1,39,161
4	3,34,000	1,16,900	2,17,100	0.552	1,19,839
5	3,34,000	1,16,900	2,17,100	0.476	1,03,340
Present value of Total Cash out flow					7,10,785

By making analysis of both the alternatives, it is observed that the present value of the cash outflow is lower in alternative II by ₹ 20,755 (i.e. ₹ 731,540 – ₹ 7,10,785) Hence, it is suggested to acquire the asset on lease basis.

2. (i) **Computation of Earnings per Share (EPS) for each Plan**

Particulars	Plan A ₹	Plan B ₹	Plan C ₹
Earnings Before Interest Tax (EBIT)	1,60,000	1,60,000	1,60,000
Less: Interest on debt at 8%	---	(16,000)	---
Earnings Before Tax	1,60,000	1,44,000	1,60,000
Less: Tax at 50%	80,000	72,000	80,000
Earnings After Tax	80,000	72,000	80,000
Less: Preference Dividend at 8%	---	---	16,000
Earnings available for equity shareholders	80,000	72,000	64,000
Number of Equity Shares	20,000	10,000	10,000
Earnings per share (EPs)	₹4.00	₹7.20	₹6.40

(ii) **Financial Break-even Point for Each Plan**

Plan A : There is no fixed financial charges, hence the financial break-even point for Plan A is zero.

Plan B : Fixed interest charges is ₹16,000, hence the financial break-even point for Plan B is ₹16,000

Plan C : Fixed charge for preference dividend is ₹16,000, hence, the financial break-even point for Plan C is ₹16,000

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(iii) Indifference point between Plan A and C

$$\frac{(X - 0)(1 - 0.5) - 0}{20,000} = \frac{(X - 0)(1 - 0.5) - 16,000}{10,000}$$

or $\dfrac{0.5X}{20,000} = \dfrac{0.5X - 16,000}{10,000}$

or, 0.5X - X = -32,000

or, 0.5X = 32,000

or, X = ₹ 64,000

Thus point of indifference between plan A and C is ₹64,000.

3. **Estimate of the Requirement of Working Capital**

		(₹)	(₹)
A.	**Current Assets:**		
	Raw material stock	6,64,615	
	(Refer to Working note 3)		
	Work in progress stock	5,00,000	
	(Refer to Working note 2)		
	Finished goods stock	13,60,000	
	(Refer to Working note 4)		
	Receivables	25,10,769	
	(Refer to Working note 5)		
	Cash and Bank balance	25,000	50,60,384
B.	**Current Liabilities**:		
	Payables for raw materials	7,15,740	
	(Refer to Working note 6)		
	Payables for wages	91,731	(8,07,471)
	(Refer to Working note 7)		
	Net Working Capital (A - B)		42,52,913

Working Notes:

1. **Annual cost of production**

	₹
Raw material requirements (1,04,000 units × ₹ 80)	83,20,000
Direct wages (1,04,000 units × ₹ 30)	31,20,000
Overheads (exclusive of depreciation)(1,04,000 × ₹ 60)	62,40,000
	1,76,80,000

2. **Work in progress stock**

	₹
Raw material requirements (4,000 units × ₹ 80)	3,20,000
Direct wages (50% × 4,000 units × ₹ 30)	60,000
Overheads (50% × 4,000 units × ₹ 60)	1,20,000
	5,00,000

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3. **Raw material stock**

   It is given that raw material in stock is average 4 weeks' consumption. Since, the company is newly formed, the raw material requirement for production and work in progress will be issued and consumed during the year.

   Hence, the raw material consumption for the year (52 weeks) is as follows:

	₹
For Finished goods	83,20,000
For Work in progress	3,20,000
	86,40,000

   Raw material stock $= \dfrac{₹\,86,40,000}{52\text{ weeks}} \times 4 \text{ weeks i.e. } ₹\,6,64,615$

4. **Finished goods stock**

   8,000 units @ ₹ 170 per unit = ₹13,60,000

5. **Receivables for sale**

Credit allowed to debtors	Average 8 weeks
Credit sales for year (52 weeks) i.e. (1,04,000 units - 8,000 units)	96,000 units
Cost per unit	₹ 170
Credit sales for the year (96,000 units × ₹170)	₹ 1,63,20,000

   Receivables $= \dfrac{₹1,63,20,000}{52\text{ weeks}} \times 8 \text{ weeks i.e. } ₹\,25,10,769$

6. **Payables for raw material:**

Credit allowed by suppliers	Average 4 weeks
Purchases during the year (52 weeks) i.e. (₹ 83,20,000 + ₹ 3,20,000 + ₹ 6,64,615)	₹ 93,04,615

   (Refer to Working notes 1,2 and 3 above)

   Payables for raw materials $= \dfrac{₹93,04,615}{52\text{ weeks}} \times 4 \text{ weeks i.e. } ₹\,7,15,740$

7. **Payables for wages**

Lag in payment of wages	Average $1\frac{1}{2}$ weeks
Direct wages for the year (52 weeks) i.e. (₹31,20,000 + ₹60,000)	₹31,80,000

   (Refer to Working notes 1 and 2 above)

   Payables for wages $= \dfrac{₹31,80,000}{52\text{ weeks}} \times 1\frac{1}{2} \text{ weeks i.e. } ₹\,91,731$

4. (i) **Computation of Costs of Different Components of Capital:**

(a) **Equity Shares:**

$$K_e = \frac{D_1}{P_0} + g = \frac{D_0(1+g)}{P_0} + g$$

$$= \frac{₹\,3.60\,(1.09)}{₹54} + 0.09 \quad = 0.0727 + 0.09 \quad = 16.27\%.$$

(b) **Preference Shares:**

$$K_p = \frac{\text{Preference Share Dividend}}{P_0} = \frac{₹\,11}{₹\,95} \quad = 11.58\%.$$

(c) **Debt at 12%**

$$K_d\,(1-t) = 12\%\,(1-0.4) = 12\% \times 0.6 \quad = 7.20\%.$$

(ii) **Weighted Average Cost of Capital (WACC)**

WACC = $W_d K_d + W_p K_p + W_e K_e$

WACC = 0.25 (7.2%) + 0.15 (11.58%) + 0.60 (16.27%)

$\quad$ = 1.8 + 1.737 + 9.762 = 13.30%.

5. (i) **Payback Period Method**

The cumulative cash flows for each project are as follows:

Year	Cumulative Cash Flows	
	Project X (₹)	Project Y (₹)
0	(10,000)	(10,000)
1	(3,500)	(6,500)
2	(500)	(3,000)
3	2,500	500
4	3,500	4,000

$$\text{Payback}_x = 2 + \frac{₹\,500}{₹\,3,000} = 2.17 \text{ years.}$$

$$\text{Payback}_y = 2 + \frac{₹\,3,000}{₹\,3,500} = 2.86 \text{ years.}$$

Net Present Value (NPV)

$$NPV_x = -₹\,10,000 + \frac{₹\,6,500}{(1.12)^1} + \frac{₹\,3,000}{(1.12)^2} + \frac{₹\,3,000}{(1.12)^3} + \frac{₹\,1,000}{(1.12)^4}$$

$$= ₹\,966.01$$

$$NPV_y = -₹\,10,000 + \frac{₹\,3,500}{(1.12)^1} + \frac{₹\,3,500}{(1.12)^2} + \frac{₹\,3,500}{(1.12)^3} + \frac{₹\,3,500}{(1.12)^4}$$

$$= ₹\,630.72.$$

Internal Rate of Return (IRR)

To solve for each project's IRR, find the discount rates that equate each NPV to zero:

$IRR_x = 18.0\%$.

$IRR_y = 15.0\%$.

(ii) The following table summarizes the project rankings by each method:

	Project that ranks higher
Payback	X
NPV	X
IRR	X

Analysis: All methods rank Project X over Project Y. In addition, both projects are acceptable under the NPV and IRR criteria. Thus, both projects should be accepted if they are independent.

6.   (a)   Various Sources of Risk are:

Risk arises from different sources, depending on the type of investment being considered, as well as the circumstances and the industry in which the organisation is operating. Some of the sources of risk are as follows

1. **Project-specific risk-**Risks which are related to a particular project and affects the project's cash flows, it includes completion of the project in scheduled time, error of estimation in resources and allocation, estimation of cash flows etc. For example, a nuclear power project of a power generation company has different risks than hydel projects.

2. **Company specific risk**- Risk which arise due to company specific factors like downgrading of credit rating, changes in key managerial persons, cases for violation of Intellectual Property Rights (IPR) and other laws and regulations, dispute with workers etc. All these factors affect the cash flows of an entity and access to funds for capital investments. For example, two banks have different exposure to default risk.

3. **Industry-specific risk**- These are the risks which effects the whole industry in which the company operates. The risks include regulatory restrictions on industry, changes in technologies etc. For example, regulatory restriction imposed on leather and breweries industries.

4. **Market risk** – The risk which arise due to market related conditions like entry of substitute, changes in demand conditions, availability and access to resources etc. For example, a thermal power project gets affected if the coal mines are unable to supply coal requirements of a thermal power company etc.

5. **Competition risk**- These are risks related with competition in the market in which a company operates. These risks are risk of entry of rival, product dynamism and change in taste and preference of consumers etc.

6. **Risk due to Economic conditions** – These are the risks which are related with macro-economic conditions like changes monetary policies by central banks, changes in fiscal policies like introduction of new taxes and cess, inflation, changes in GDP, changes in savings and net disposable income etc.

7. **International risk –** These are risks which are related with conditions which are caused by global economic conditions like restriction on free trade, restrictions on market access, recessions, bilateral agreements, political and geographical conditions etc. For example, restriction on outsourcing of jobs to overseas market.

(b) There are various factors like price of the product/ service, demand, price of inputs e.g. raw material, labour etc., which is to be managed by an organisation on a continuous basis. Proportion of debt also needs to be managed by an organisation very delicately. Higher debt requires higher interest and if the cash inflow is not sufficient then it will put lot of pressure to the organisation. Both short term and long term creditors will put stress to the firm. If all the above factors are not well managed by the firm, it can create situation known as distress, so financial distress is a position where Cash inflows of a firm are inadequate to meet all its current obligations.

Now if distress continues for a long period of time, firm may have to sell its asset, even many times at a lower price. Further when revenue is inadequate to revive the situation, firm will not be able to meet its obligations and become insolvent. So, insolvency basically means inability of a firm to repay various debts and is a result of continuous financial distress.

(c) Modified Internal Rate of Return (MIRR): There are several limitations attached with the concept of the conventional Internal Rate of Return. The MIRR addresses some of these deficiencies. For example, it eliminates multiple IRR rates; it addresses the reinvestment rate issue and produces results, which are consistent with the Net Present Value method.

Under this method, all cash flows, apart from the initial investment, are brought to the terminal value using an appropriate discount rate (usually the cost of capital). This results in a single stream of cash inflow in the terminal year. The MIRR is obtained by assuming a single outflow in the zeroth year and the terminal cash inflow as mentioned above. The discount rate which equates the present value of the terminal cash in flow to the zeroth year outflow is called the MIRR.

MOCK TEST PAPER

INTERMEDIATE (NEW): GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

PAPER – 8B: ECONOMICS FOR FINANCE

SUGGESTED ANSWERS/HINTS

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 of time. It is the income 'actually paid out' to the household sector, but not necessarily earned. Some people obtain income for which no goods and services are provided in return. Examples of this include transfer payments such as social security benefits, unemployment compensation, welfare payments etc. Individuals also earn income which they do not actually receive; for example, undistributed corporate profits and the contribution of employers to social security. Personal income forms the basis for consumption expenditures and is derived from national income as follows:

   PI = NI + income received but not earned - income earned but not received.

   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.

   DI = PI - Personal Income Taxes

   (b) Credit Multiplier = 1/ Required Reserve Ratio

   $1000 \times 1 / 0.02 = 50,000$

   $1000 \times 1 / 0.05 = 20,000$

   $1000 \times 1 / 0.10 = 10,000$

   (c) **(i)** In respect of both commodities

   Productivity of Labour in Country X and Country Y

Productivity of Labour	Country X	Country Y
Units of cloth per hour	0.25	1.0
Units of wheat per hour	0.5	0.4

   (ii) Country X has absolute advantage in the production of wheat because productivity of wheat is higher in country X, or conversely, the number of labour hours required to produce wheat in country X is less compared to country Y.

   (iii) Country Y has absolute advantage in the production of cloth because productivity of cloth is higher in country Y, or conversely, the number of labour hours required to produce wheat in country Y is less compared to country X.

   (d) Externalities, also referred to as 'spillover effects', 'neighbourhood effects' 'third-party effects' or 'side-effects', occur when the actions of either consumers or producers result in costs or benefits that do not reflect as part of the market price. Externalities cause market inefficiencies because they hinder the ability of market prices to convey accurate information about how much to produce and how much to buy. Since externalities are not reflected in market prices, they can be a source of economic inefficiency. Externalities can be positive or negative. Negative externalities occur when the action of one party imposes costs on another party. Positive externalities occur when the action of one party confers benefits on another party. The four possible types of externalities are

negative externality initiated in production which imposes an external cost on others, positive production externality, example A firm which offers training to its employees for increasing their skills. The firm generates positive benefits on other firms when they hire such workers as they change their jobs. Another example is the case of a beekeeper who locates beehives in an orange growing area enhancing the chances of greater production of oranges through increased pollination less commonly seen, initiated in production that confers external benefits on others. Negative Production Externality example when a factory which produces aluminum discharges untreated waste water into a nearby river and pollutes the water causing health hazards for people who use the water for drinking and bathing. Pollution of river also affects fish output as there will be less catch for fishermen due to loss of fish resources. Negative consumption externalities initiated in consumption which produce external costs on others for example Smoking cigarettes in public place causing passive smoking by others, creating litter and diminishing the aesthetic value of the room and playing the radio loudly obstructing one from enjoying a concert. Positive consumption externality initiated in consumption that confers external benefits on others for example, consumption of the services of a health club by the employees of a firm would result in an external benefit to the firm in the form of increased efficiency and productivity.

2. (a) A recession is said to occur when overall economic activity declines or in other words, when the economy contracts. As a Finance Minister it is my responsibility to frame / suggest fiscal policy for the country at the time of recession or inflation so as to take the country out of it.

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.

Fiscal measures could be discretionary and non-discretionary.

During recession, the government has to use discretionary fiscal policies. Discretionary fiscal policy refers to deliberate policy actions on the part of the government to change the levels of expenditure and taxes to influence the level of national output, employment and prices. Since GDP = C + I + G + NX, governments can influence economic activity (GDP), by controlling G (Government Expenditure) directly and influencing C(Private Consumption), I(Private Investment), and NX (Net Exports) indirectly, through changes in taxes, transfer payments and expenditure.

During a recession as a part of government I may initiate a fresh wave of public works. These will involve employment of labour as well as purchase of multitude of goods and services. These expenditures directly generate incomes to labour and suppliers of material and services. Apart from this, there is also indirect effect in the form of working of multiplier.

Besides this, as a finance minister, I may reduce corporate and personal income tax to overcome contractionarily tendencies in the economy. A tax cut increases disposable income of households. Their inclination to spend a portion of additional disposable income determined by their marginal propensity to consumer and multiplier effect of spending would set out a chain reaction of spending, increased income and consequent increases output. Moreover, these can provide firms and households incentives to engage in investment.

(b) (i) Income Method

GDP_{MP} = Employee compensation (wages and salaries + employers'

contribution towards social security schemes) + profits + rent + interest +

mixed income + depreciation + net indirect taxes (Indirect taxes - subsidies)

GDP_{MP} = 6,508+ 34 + 1060 + 806+ 682 + 1,000 + 800 = **10,890**

GNP_{MP} = GDP_{MP} + NFIA =10,890+ 40 = **10,930**

Expenditure Method

Y = C + I + G + (X – M)

Y = 7314 + 1442 + 2196+ (1346 –1408)

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Y = (7314 + 1442 + 2196) – 62

Y = 10890

$GNP_{MP} = GDP_{MP} + NFIA = 10,890 + 40 = $ **10,930**

(ii) An automatic stabilizer is any feature of an economy that automatically reduces the changes in spending during the multiplier process, making the multiplier smaller. As GDP increases, an automatic stabilizer would reduce the increases in spending in each round of the multiplier making the final increase in GDP less than what would otherwise be. Therefore, automatic stabilizers reduce the size of the multiplier, and consequently reduce fluctuations in GDP and employment, making the economy more stable in the short run. Briefly put, automatic stabilizers diminish the impact of spending changes on real GDP.

3. **(a)** A public good (also referred to as a collective consumption good or a social good) is defined as one which all individuals enjoy in common in the sense that each individual's consumption of such a good leads to no subtraction from any other individual's consumption of that good.

National defence has all characteristics of a public good. It yields utility to people; its consumption is essentially non-rival, non-excludable and collective in nature and is characterized by indivisibility. National defence is available for all individuals whether they pay taxes or not and it is impossible to exclude anyone within the country from consuming and benefiting from it. No direct payment by the consumer is involved in the case of defence. Once it is provided, the additional resource cost of another person consuming it is zero. Defence also has the unique feature of public good i.e. it does not conform to the settings of market exchange. Though defence is extremely valuable for the well being of the society, left to market, it will not be produced at all or will be under produced.

(b) Moral hazard is associated with information failure and refers to a situation that increases the probability of occurrence of a loss or a larger than normal loss, because of a change in the unobservable or hard to observe behaviour of one of the parties in the transaction after the transaction has been made. Moral hazard is opportunism characterized by an informed person's taking advantage of a less-informed person through an unobserved action. It arises from lack of information about someone's future behaviour. Moral hazard occurs due to asymmetric information i.e., an individual knows more about his or her own actions than other people do. This leads to a distortion of incentives to take care or to exert effort when someone else bears the costs of the lack of care or effort. For example, in the insurance market, the expected loss from an adverse event increases as insurance coverage increases.

(b) (i) $C = 200 + .6Y;$ $Y = 2000$ billion.

C = 200 + .6(2000) = 1400 billion.

S = Y-C = 2000-14000 = 600 billion.

Consumers intend to consume 1,400 billion and save 600 billion.

(ii) The ratio of ΔY to ΔI is called the investment multiplier, k.

$$k = \frac{\text{Change in Income}}{\text{Change in Investment}} = \frac{\Delta Y}{\Delta I}$$

$$\text{Here} \quad \frac{2400}{600} = 4 \quad 4 = \frac{1}{1-MPC} = \frac{1}{MPS}$$

$$4 - 4MPC = 1$$

$$4\ MPC = 4-1 = 3$$

$$MPC = \frac{3}{4} = 0.75$$

$$MPS = 1-MPC = 0.25$$

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4. **(a)** **(i)** Money multiplier *m* is defined as a ratio that relates the change in the money supply to a given change in the monetary base.

$$\text{Money multiplier (m)} = \frac{\text{Money supply}}{\text{Monetary base}}$$

The multiplier indicates what multiple of the monetary base is transformed into money supply. The link from reserve money to money supply is through the money multiplier. The multiplier process operates as long as banks have excess reserves. If some portion of the increase in high-powered money finds its way into currency, this portion does not undergo multiple deposit expansion.

(ii) Changes in SLR chiefly influence the availability of resources in the banking system for lending. A rise in SLR -during periods of high liquidity - to lock up a rising fraction of a bank's assets in the form of eligible instruments - reduces the credit creation capacity of banks. A reduction in SLR during periods of economic downturn has the opposite effect.

(b) **(i)** Foreign Portfolio Investment: Foreign portfolio investment is the flow of 'financial capital' rather than 'real capital' and does not involve ownership or control on the part of the investor. Examples of foreign portfolio investment are the deposit of funds in an Indian or a British bank by an Italian company or the purchase of a bond (a certificate of indebtedness) of a Swiss company or of the Swiss government by a citizen or company based in France. Unlike FDI, portfolio capital, in general, moves to investment in financial stocks, bonds and other financial instruments and is effected largely by individuals and institutions through the mechanism of capital market. These flows of financial capital have their immediate effects on balance of payments or exchange rates rather than on production or income generation.

(ii) Real Exchange Rate: The 'real exchange rate' describes 'how many' of a good or service in one country can be traded for 'one' of that good or service in a foreign country. It is calculated as :

$$\text{Real exchange rate} = \text{Nominal exchange rate} \times \frac{\text{Domestic price Index}}{\text{Foreign price Index}}$$

Real Exchange Rate (RER) incorporates changes in prices.

5. **(a)** Fluctuations in the exchange rate affect the economy by changing the relative prices of domestically-produced and foreign-produced goods and services. Following are the major effects of depreciation of domestic currency.

(1) All else equal, depreciation lowers the relative price of a country's exports and raises the relative price of its imports. When a country's currency depreciates, foreigners find that its exports are cheaper and domestic residents find that imports from abroad are more expensive. Exporters will be benefitted as goods exported abroad will fetch forex which can now be converted to more rupees. By lowering export prices, currency depreciation helps increase the international competitiveness of domestic industries, increases the volume of exports and promotes trade balance. When a country's currency depreciates, production for exports and of import substitutes become more profitable. Therefore, factors of production will be induced to move into the tradable goods sectors and out of the non tradable goods sectors. Such resource movements involve economic wastes.

(2) Depreciation increases the price of foreign goods relative to goods produced in the home country and help divert 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.

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(3) For an economy where exports are significantly high, a depreciated currency would mean a lot of gain. In addition, if exports originate from labour-intensive industries, increased export prices will have spiraling effects on wages, employment and income.

(4) In an under developed or semi industrialized country, where inputs and components for manufacturing are mostly imported and cannot be domestically produced, increased import prices will increase firms' cost of production, push domestic prices up and decrease real output.

(5) Depreciation is also likely to fuel consumer price inflation, directly through its effect on prices of imported consumer goods and also due to increased demand for domestic goods. The impact will be greater if the composition of domestic consumption baskets consists more of imported goods. Indirectly, cost push inflation may result through possible escalation in the cost of imported components and intermediaries used in production.

(6) The fiscal health of a country whose currency depreciates is likely to be affected with rising import payments and consequent rising current account deficit (CAD). In case of foreign currency denominated government debts, currency depreciation will increase the interest burden and cause strain to the exchequer for repaying and servicing foreign debt.

(b) (i) Cash Reserve Ratio (CRR) refers to the fraction of the total net demand and time liabilities (NDTL) of a scheduled commercial bank in India which it should maintain as cash deposit with the Reserve Bank. CRR has, in recent years, assumed significance as one of the important quantitative tools aiding in liquidity management. The RBI may set the ratio in keeping with the broad objective of maintaining monetary stability in the economy.

Higher the CRR with the RBI, lower will be the liquidity in the system and vice versa. During deflation, the RBI reduces the CRR in order to enable the banks to expand credit and increase the supply of money available in the economy. During periods of inflation, the RBI increases the CRR in order to contain credit expansion.

(ii) The demand for money is a decision about how much of one's given stock of wealth should be held in the form of money rather than as other assets such as bonds. Demand for money is actually demand for liquidity and a demand to store value.

Demand for money is in the nature of derived demand; it is demanded for it purchasing power. Basically people demand money because they wish to have command over real goods and services with the use of money.

Demand for money has an important role in the determination of interest, prices and income in an economy. Higher the interest rate, higher would be opportunity cost of holding cash and lower the demand for money. Similarly, lower the interest rate, lower will be the opportunity cost of holding cash and higher the demand for money.