Test Series: March, 2023

MOCK TEST PAPER –1

INTERMEDIATE: GROUP – II

PAPER – 8: FINANCIAL MANAGEMENT & ECONOMICS FOR FINANCE

PAPER 8A : FINANCIAL MANAGEMENT

Suggested Answers/ Hints

1. (a) (i) Financial Leverage $= \frac{EBIT}{EBIT - Interest}$

Or, $3 = \frac{EBIT}{EBIT - Interest}$

Or, $3 = \frac{EBIT}{EBIT - ₹\ 85000}$

Or, EBIT = ₹1,27,500

(ii) Operating Leverage $= \frac{Contribution}{EBIT}$

Or, $= \frac{Contribution}{1,27,500} = 2$

Or, Contribution = ₹ 2,55,000

(iii) Sales = $\frac{Contribution}{P/V\ Ratio} = \frac{2,55,000}{15\%}$ = ₹17,00,000

(iv) Now, Contribution – Fixed cost = EBIT

Or ₹ 2,55,000 – Fixed cost = ₹1,27,500

Or Fixed Cost =₹1,27,500

Income Statement for the year ended 31st March 2022

Particulars	₹
Sales	17,00,000
Less: Variable Cost (85% of Rs.17,00,000)	(14,45,000)
Contribution	2,55,000
Less: Fixed Cost (Contribution - EBIT)	(1,27,500)
Earnings Before Interest and Tax (EBIT)	1,27,500
Less: Interest	(85,000)
Earnings Before Tax (EBT)	42,500
Less: Income Tax @ 25%	(10,625)
Earnings After Tax (EAT or PAT)	31,875

(b) Given,

Cost of Equity (K_e)	**15%**
Number of shares in the beginning (n)	25,000
Current Market Price (P_0)	120
Net Profit (E)	9,00,000
Expected Dividend (D_1)	15
Investment (I)	15,00,000

Computation of market price per share, when:

(i) No dividend is declared:

$$Po = \frac{P_1 + D_1}{1 + k_e}$$

$$₹120 = \frac{P_1 + 0}{1 + 0.15}$$

P_1 = ₹138 – 0 = ₹ 138

(ii) Dividend is declared:

$$₹120 = \frac{P_1 + 15}{1 + 0.15}$$

P_1 = ₹138 – ₹15 = ₹ 123

Calculation of number of shares required for investment.

	₹
Earnings	9,00,000
Dividend distributed	3,75,000
Fund available for investment	12,75,000
Total Investment	15,00,000
Balance Funds required	15,00,000 – 12,75,000 = 2,25,000

$$\text{No. of shares} = \frac{\text{Funds required}}{\text{Price at end}(P_1)}$$

$$= \frac{2,25,000}{123} = 1,830 \text{ Shares(approx.)}$$

(c) $$G.P.\,ratio = \frac{Gross\,Profit}{Sales} = 40$$

(a) $$Sales = \frac{Gross\,Profit}{40} x\,100 = \frac{15,00,000}{40} x100$$

= 37,50,000

(b) Cost of Sales = Sales Gross Profit = = ₹ 37,50,000 - ₹ 15,00,000

= ₹ 22,50,000

(c) Receivable turnover = $\frac{\text{Sales}}{\text{Receivables}} = 5$

$= \text{Receivables} = \frac{\text{Sales}}{5} = \frac{37,50,000}{5}$

= ₹7,50,000

(d) Fixed assets turnover = $\frac{\text{Cost of Sales}}{\text{Fixed Assets}} = 10$

Or Fixed assets = $\frac{\text{Cost of Sales}}{10} = \frac{₹\ 22,50,000}{10}$

= ₹ 2,25,000

(e) Inventory turnover = $\frac{\text{Cost of Sales}}{\text{Average Stock}} = 10$

Average Stock = $\frac{\text{Cost of Sales}}{10} = \frac{22,50,000}{10}$ = ₹ 2,25,000

Average Stock = $\frac{\text{Opening Stock + Closing stock}}{2} = \frac{\text{Opening stock + Opening stock + 40,000}}{2}$

Average Stock = Opening+ ₹ 20,000

Opening Stock= Average Stock- ₹ 20,000

Average Stock = ₹ 2,25,000 – ₹ 20,000

Opening Stock = ₹ 2,05,000

Closing Stock = Opening Stock + ₹ 40,000

Closing Stock = ₹ 2,05,000 +₹ 40,000 =₹ 2,45,000

(f) Payable turnover = $\frac{\text{Purchase}}{\text{Payables}} = 5$

Purchases = Cost of Sales + Increase in Stock

Purchases = ₹22,50,000 + ₹40,000 = ₹22,90,000

Payables = $\frac{\text{Purchase}}{5} = \frac{₹\ 22,90,000}{5}$ = ₹4,58,000

(h) Capital Employed = $\frac{\text{Cost of Sales}}{3} = \frac{₹\ 22,50,000}{3}$

= ₹7,50,000

Equity share Capital = Capital Employed – Reserves & Surplus

= ₹7,50,000 – ₹5,00,000 = ₹2,50,000

Balance Sheet of T Ltd as on……

Liabilities	₹	Assets	₹
Capital	2,50,000	Fixed Assets	2,25,000
Reserve & Surplus	5,00,000	Stock	2,45,000
Payables	4,58,000	Receivables	7,50,000
		Other Current Assets (balancing figure)	2,38,000
	14,58,000		14,58,000

(d) Computation of Rate of Preference Dividend

$$\frac{\text{(EBIT- Interest) (1 -t)}}{\text{No. of Equity Shares } (N_1)} = \frac{\text{(EBIT(1-t) - Preference Dividend}}{\text{No. of Equity Shares } (N_2)}$$

$$\frac{\text{(7,60,000 - 1,80,000) x (1-0.25)}}{\text{90,000 shares}} = \frac{\text{7,60,000 (1-0.25) - Preference Dividend}}{\text{90,000 shares}}$$

$$\frac{\text{4,35,000}}{\text{90,000 shares}} = \frac{\text{5,70,000 - Preference Dividend}}{\text{90,000 shares}}$$

₹ 4,35,000 = ₹ 5,70,000 – Preference Dividend

Preference Dividend = ₹ 5,70,000 – ₹ 4,35,000 = ₹ 1,35,000

$$\text{Rate of Dividend} = \frac{\text{Preference Dividend}}{\text{Preference share capital}} \times 100$$

$$= \frac{1,35,000}{20,00,000} \times 100 = 6.75\ \%$$

2. Computation of EPS under three-financial plans.

Plan I: Equity Financing

	(₹)	(₹)	(₹)	(₹)	(₹)
EBIT	15,62,500	22,50,000	62,50,000	93,75,000	1,56,25,000
Interest	0	0	0	0	0
EBT	15,62,500	22,50,000	62,50,000	93,75,000	1,56,25,000
Less: Tax @ 25%	3,90,625	5,62,500	15,62,500	23,43,750	39,06,250
PAT	11,71,875	16,87,500	46,87,500	70,31,250	1,17,18,750
No. of equity shares	6,50,000	6,50,000	6,50,000	6,50,000	6,50,000
EPS	1.80	2.60	7.21	10.82	18.03

Plan II: Debt – Equity Mix

	(₹)	(₹)	(₹)	(₹)	(₹)
EBIT	15,62,500	22,50,000	62,50,000	93,75,000	1,56,25,000
Less: Interest	22,50,000	22,50,000	22,50,000	22,50,000	22,50,000
EBT	(6,87,500)	0	40,00,000	71,25,000	1,33,75,000
Less: Tax @ 25%	1,71,875*	0	10,00,000	17,81,250	33,43,750
PAT	(5,15,625)	0	30,00,000	53,43,750	1,00,31,250
No. of equity shares	4,00,000	4,00,000	4,00,000	4,00,000	4,00,000
EPS (₹)	(1.29)	0.00	7.50	13.36	25.08

* The Company can set off losses against the overall business profit or may carry forward it to next financial years.

Plan III: Preference Shares – Equity Mix

	(₹)	(₹)	(₹)	(₹)	(₹)
EBIT	15,62,500	22,50,000	62,50,000	93,75,000	1,56,25,000
Less: Interest	0	0	0	0	0

EBT	15,62,500	22,50,000	62,50,000	93,75,000	1,56,25,000
Less: Tax @ 25%	3,90,625	5,62,500	15,62,500	23,43,750	39,06,250
PAT	11,71,875	16,87,500	46,87,500	70,31,250	1,17,18,750
Less: Pref. dividend *	22,50,000	22,50,000	22,50,000	22,50,000	22,50,000
PAT after Pref. dividend.	(10,78,125)	(5,62,500)	24,37,500	47,81,250	94,68,750
No. of Equity shares	4,00,000	4,00,000	4,00,000	4,00,000	4,00,000
EPS	(2.70)	(1.41)	6.09	11.95	23.67

* In case of cumulative preference shares, the company has to pay cumulative dividend to preference shareholders.

(ii) In case of lower EBIT Plan I i.e Equity Financing is better however in case of higher EBIT Plan II i.e Debt=Equity Mix is best.

3. Computation – Collections from Customers

Particulars	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
	(₹)	(₹)	(₹)	(₹)	(₹)	(₹)	(₹)	(₹)
Total Sales	6,60,000	7,70,000	4,40,000	3,30,000	4,40,000	5,50,000	4,40,000	3,30,000
Credit Sales (75% of total Sales)	4,95,000	5,77,500	3,30,000	2,47,500	3,30,000	4,12,500	3,30,000	2,47,500
Collection (within one month)		2,97,000	3,46,500	1,98,000	1,48,500	1,98,000	2,47,500	1,98,000
Collection (within two months)			1,98,000	2,31,000	1,32,000	99,000	1,32,000	1,65,000
Total Collections			**5,44,500**	**4,29,000**	**2,80,500**	**2,97,000**	**3,79,500**	**3,63,000**

Monthly Cash Budget for Six Months: April to September 2023

Particulars	April	May	June	July	August	Sept.
	(₹)	(₹)	(₹)	(₹)	(₹)	(₹)
Receipts:						
Opening Balance	35,000	35,000	35,000	35,000	35,000	35,000
Cash Sales	1,10,000	82,500	1,10,000	1,37,500	1,10,000	82,500
Collections from Debtors	5,44,500	4,29,000	2,80,500	2,97,000	3,79,500	3,63,000
Total Receipts (A)	**6,89,500**	**5,46,500**	**4,25,500**	**4,69,500**	**5,24,500**	**4,80,500**
Payments:						
Purchases	2,47,500	3,30,000	4,12,500	3,30,000	2,47,500	4,12,500
Wages and Salaries	49,500	44,000	55,000	55,000	49,500	49,500
Interest on Loan	18,000	-----	-----	18,000	-----	-----
Tax Payment	-----	-----	-----	26,000	-----	-----
Total Payment (B)	**3,15,000**	**3,74,000**	**4,67,500**	**4,29,000**	**2,97,000**	**4,62,000**
Minimum Cash Balance	35,000	35,000	35,000	35,000	35,000	35,000
Total Cash Required (C)	**3,50,000**	**4,09,000**	**5,02,500**	**4,64,000**	**3,32,000**	**4,97,000**
Surplus/ (Deficit) (A)-(C)	3,39,500	1,37,500	-77,000	5,500	1,92,500	-16,500

Investment/Financing:						
Total effect of (Invest)/ Financing (D)	-3,39,500	-1,37,500	77,000	-5,500	-1,92,500	16,500
Closing Cash Balance (A) + (D) - (B)	35,000	35,000	35,000	35,000	35,000	35,000

4. (i) Calculation of Base for depreciation or Cost of New Machine

Particulars	(₹)
Purchase price of new machine	6,50,000
Less: Sale price of old machine	1,60,000
	4,90,000

(ii) Calculation of Profit before tax as per books

Particulars	Old machine	New machine	Difference
	(₹)	(₹)	(₹)
PBT as per books	4,70,888	5,61,513	90,625
Add: Depreciation as per books	34,800	60,175	25,375
Profit before tax and depreciation (PBTD)	5,05,688	6,21,688	1,16,000

Calculation of Incremental NPV

Year	PVF	PBTD	Dep. @ 9%	PBT	Tax @ 25%	Cash Inflows	PV of Cash Inflows
	@ 10%	(₹)	(₹)	(₹)	(₹)	(₹)	(₹)
	1	2	3	4(2-3)	(5) = (4) x 0.25	(6) = (4) – (5) + (3)	(7) = (6) x (1)
1	0.909	1,16,000.00	44,100.00	71,900.00	17,975.00	98,025.00	89,104.73
2	0.826	1,16,000.00	40,131.00	75,869.00	18,967.25	97,032.75	80,149.05
3	0.751	1,16,000.00	36,519.21	79,480.79	19,870.20	96,129.80	72,193.48
4	0.683	1,16,000.00	33,232.48	82,767.52	20,691.88	95,308.12	65,095.45
5	0.621	1,16,000.00	30,241.56	85,758.44	21,439.61	94,560.39	58,722.00
6	0.564	1,16,000.00	27,519.82	88,480.18	22,120.05	93,879.95	52,948.29
7	0.513	1,16,000.00	25,043.03	90,956.97	22,739.24	93,260.76	47,842.77
8	0.467	1,16,000.00	22,789.16	93,210.84	23,302.71	92,697.29	43,289.63
9	0.424	1,16,000.00	20,738.14	95,261.86	23,815.47	92,184.53	39,086.24
10	0.386	1,16,000.00	18,871.70	97,128.30	24,282.07	91,717.93	35,403.12
							5,83,834.77
Add: PV of Salvage value of new machine (₹ 63,000 ´ 0.386)							24,318.00
Total PV of incremental cash inflows							6,08,152.77
Less: Cost of new machine [as calculated in point(i)]							4,90,000.00
Incremental Net Present Value							1,18,152.77

Analysis: Since the Incremental NPV is positive, the old machine should be replaced.

5. (i) (a) Expected Net Cash Flow (ENCF) of Projects

Project X			Project Y		
Net Cash Flow (₹)	Probability	Expected Net Cash Flow (₹)	Net Cash Flow (₹)	Probability	Expected Net Cash Flow (₹)
3,12,500	0.2	62,500	9,75,000	0.1	97,500
3,75,000	0.2	75,000	8,25,000	0.3	2,47,500
4,37,500	0.6	2,62,500	6,75,000	0.6	4,05,000
		4,00,000			**7,50,000**

(b) Variance of Projects

Project X

= (₹3,12,500 – ₹4,00,000)^2 (0.2) + (₹3,75,000 – ₹4,00,000)^2 (0.2) + (₹4,37,500 – ₹4,00,000)^2 (0.6)

= ₹1,53,12,50,000 + ₹12,50,00,000 + ₹84,37,50,000

= ₹2,50,00,00,000

Project Y

= (₹9,75,000 – ₹7,50,000)^2 (0.1) + ₹ (8,25,000 – ₹7,50,000)^2 (0.3) + (₹6,75,000 – ₹7,50,000)^2 (0.6)

= ₹5,06,25,00,000 + ₹1,68,75,00,000 + ₹3,37,50,00,000

= ₹10,12,50,00,000

(c) Standard Deviation of Projects

Project X

$= \sqrt{\text{Variance}}$

$= \sqrt{2,50,00,00,000}$ = ₹ 50,000

Project Y

$= \sqrt{\text{Variance}}$

$= \sqrt{10,12,50,00,000}$

= ₹10,0623.06

(d) Coefficient of Variation of Projects

Project	Coefficient of variation = $\frac{\text{Standard Deviation}}{\text{Expected Net Cash Flow}}$
X	$\frac{50,000}{4,00,000}$ **= 0.125 or 12.5%**
Y	$\frac{1,00,623.06}{7,50,000}$ **= 0.1342 or 13.42%**

(ii) Coefficient of Variation of Project X is 0.125 and Project Y is 0.1342. So, the risk per rupee of net cash flow is less of Project X, therefore, Project X is better than Project Y.

6. (a) Debt Securitisation: It is a method of recycling of funds. It is especially beneficial to financial intermediaries to support the lending volumes. Assets generating steady cash flows are packaged together and against this asset pool, market securities can be issued, e.g. housing finance, auto loans, and credit card receivables.

Process of Debt Securitisation

(i) *The origination function* – A borrower seeks a loan from a finance company, bank, HDFC. The credit worthiness of borrower is evaluated and contract is entered into with repayment schedule structured over the life of the loan.

(ii) *The pooling function* – Similar loans on receivables are clubbed together to create an underlying pool of assets. The pool is transferred in favour of Special purpose Vehicle (SPV), which acts as a trustee for investors.

(iii) *The securitisation function* – SPV will structure and issue securities on the basis of asset pool. The securities carry a coupon and expected maturity which can be asset-based/mortgage based. These are generally sold to investors through merchant bankers. Investors are – pension funds, mutual funds, insurance funds.

The process of securitization is generally without recourse i.e. investors bear the credit risk and issuer is under an obligation to pay to investors only if the cash flows are received by him from the collateral. The benefits to the originator are that assets are shifted off the balance sheet, thus giving the originator recourse to off-balance sheet funding.

(b) Agency Problem and Agency Cost: Though in a sole proprietorship firm, partnership etc., owners participate in management but incorporates, owners are not active in management so, there is a separation between owner/ shareholders and managers. In theory, managers should act in the best interest of shareholders however in reality, managers may try to maximise their individual goal like salary, perks etc., so there is a principal agent relationship between managers and owners, which is known as **Agency Problem**. In a nutshell, Agency Problem is the chances that managers may place personal goals ahead of the goal of owners. Agency Problem leads to Agency Cost. **Agency cost** is the additional cost borne by the shareholders to monitor the manager and control their behaviour to maximise shareholders wealth. Generally, Agency Costs are of four types (i) monitoring (ii) bonding (iii) opportunity (iv) structuring.

(c) Secured Premium Notes: Secured Premium Notes is issued along with a detachable warrant and is redeemable after a notified period of say 4 to 7 years. The conversion of detachable warrant into equity shares will have to be done within time period notified by the company.

PAPER 8B: ECONOMICS FOR FINANCE

ANSWERS

1. (a) Keynesian equilibrium with equality of planned aggregate expenditures and output need not take place at full employment. If the aggregate expenditure line intersects the 45-degree line at the level of potential GDP, then there is full employment equilibrium. There is no recession, and unemployment is at the natural rate. But there is no guarantee that the equilibrium will occur at the potential GDP level of output. The economy can settle at any equilibrium which might be higher or lower than the full employment equilibrium.

(b) There are many conceptual difficulties related to measurement which are difficult to resolve, such as:

(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

(c) NVA at FC = Value of Output – Intermediate Consumption – Depreciation – (Excise Duty – Subsidy)

Thus, Value of output = Net value added at factor cost + Intermediate consumption + Depreciation + (Excise duty-Subsidy)

= 800 + 500 + 80 + (400-60)

= ₹ 1720 lakhs

2. (a) Nominal GDP = 5000 Crores Real GDP = 6 000 Crores

$$\text{DP Deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$$

$$= 5000 \div 6000 \times 100$$

$$= 83.33$$

The price level has fallen since GDP deflator is less than 100 at 83.33

(b) Gross value at factor cost = Total Sales + Change in Stock - Intermediate Consumption – Net Indirect Tax

= (1000 x 30) + (3000 - 2000) – 12000 - (2500 + 3500)

= ₹ 13000

(c) The leakages are caused due to:

- progressive rates of taxation which result in no appreciable increase in consumption despite increase in income.
- high liquidity preference and idle saving or holding of cash balances and an equivalent fall in marginal propensity to consume.
- increased demand for consumer goods being met out of the existing stocks or through imports.
- additional income spent on purchasing existing wealth or purchase of government securities

and shares from shareholders or bond holders.

- undistributed profits of corporations
- part of increment in income used for payment of debts.
- case of full employment additional investment will only lead to inflation, and
- scarcity of goods and services despite having high MPC

(d) A government failure is said to occur when government intervention in the market creates inefficiency and leads to misallocation of society's scarce resources. The possible sources of this type of government failures are inadequate information, political self-interest, conflicting objectives, bureaucracy, corruption and red tape, and high administrative costs involved in government intervention. Government failure may be relatively inconsequential if it gets restricted to being simply ineffective and therefore the costs of such intervention are limited to the resources wasted for such intervention. Government failure is more serious when such intervention has generated new and serious problems which will have far reaching adverse consequences on the welfare of citizens. Governments should, therefore, identify and evaluate the inefficiencies that may result from market failure and the potential inefficiencies associated with deliberate government policies framed to redress market failure.

3. (a) Government expenditure injects more money into the economy and stimulates demand. On the other hand, taxes reduce the disposable income of people and therefore, reduce effective demand. During recession, in order to ensure income protection, the government increases its expenditure or cuts down taxes or adopts a combination of both so that aggregate demand is kept stable or even boosted up with more money put into the hands of the people. On the other hand, to control high inflation the government cuts down its expenditure or raises taxes. In other words, an expansionary fiscal policy is adopted to alleviate recession and a contractionary fiscal policy is resorted to for controlling high inflation. Generally, government's fiscal policy has a strong influence on the performance of the macro economy in terms of employment, price stability, economic growth, and external balance.

(b) The unique feature of an externality is that it is initiated and experienced not through the operation of the price system, but outside the market. Since it occurs outside the price mechanism, it has not been compensated for, or in other words it is uninternalized or the cost (benefit) of it is not borne (paid) by the parties. Suppose a workshop creates ear- splitting noise and imposes an externality on a baker who produces smoke and disturbs the workers in the workshop, then this is a case of reciprocal externality. If an accountant who is disturbed by loud music but has not imposed any externality on the singers, then the externality is unidirectional.

(c) Spending multiplier (also known as Keynesian or fiscal policy multiplier) represents the multiple by which GDP increases or decreases in response to an increase and decrease in government expenditures and investment, holding the real money supply constant. Quantitatively, the government spending multiplier is the same as the investment multiplier. It is the reciprocal of the marginal propensity to save (MPS). Higher the MPS, lower the multiplier, and lower the MPS, higher the multiplier.

(d) The crowding out view is that a rapid growth of government spending leads to a transfer of scarce productive resources from the private sector to the public sector where productivity might be lower. An increase in the size of government spending during recessions will 'crowd-out' private spending in an economy and lead to reduction in an economy's ability to self-correct from the recession, and possibly also reduce the economy's prospects of long-run economic growth.

4. **(a)** The distinction between Expansionary and Contractionary Policy is as follows:

Expansionary fiscal policy is designed to stimulate the economy during the contractionary phase of a business cycle and is accomplished by increasing aggregate expenditures and aggregate demand through an increase in all types of government spending and / or a decrease in taxes.

Contractionary fiscal policy is designed to restrain the levels of economic activity of the economy during an inflationary phase by decreasing the aggregate expenditures and aggregate demand through a decrease in all types of government spending and/ or an increase in taxes.

(b) **Hard peg:** An exchange rate policy where the central bank sets a fixed and unchanging value for the exchange rate.

Soft peg: An exchange rate policy under which the exchange rate is generally determined by the market, but in case the exchange rate tend to be move speedily in one direction, the central bank will intervene in the market.

(c) An anti-dumping duty is a protectionist tariff that a domestic government imposes on foreign imports that it believes are priced below fair market value. Dumping occurs when manufacturers sell goods in a foreign country below the sales prices in their domestic market or below their full average cost of the product. Dumping may be persistent, seasonal, or cyclical. Dumping may also be resorted to as a predatory pricing practice to drive out established domestic producers from the market and to establish monopoly position.

(d) Country of origin means the country in which a good was produced, or in the case of a traded service, the home country of the service provider. Rules of origin are the criteria needed by governments of importing countries to determine the national source of a product. Their importance is derived from the fact that duties and restrictions in several cases depend upon the source of imports. Important procedural obstacles occur in the home countries for making available certifications regarding origin of goods, especially when different components of the product originate in different countries.

5. **(a)** A floating exchange rate has many advantages:

(i) A floating exchange rate has the greatest advantage of allowing a Central bank and /or government to pursue its own independent monetary policy.

(ii) Floating exchange rate regime allows exchange rate to be used as a policy tool: for example, policymakers can adjust the nominal exchange rate to influence the competitiveness of the tradable goods sector.

(iii) As there is no obligation or necessity to intervene in the currency markets, the central bank is not required to maintain a huge foreign exchange reserves.

(b) So long as the current rate of interest is higher than the critical rate of interest, a typical wealth-holder would hold in his asset portfolio only government bonds, and if the current rate of interest is lower than the critical rate of interest, his asset portfolio would consist wholly of cash. When the current rate of interest is equal to the critical rate of interest, a wealth-holder is indifferent to holding either cash or bonds.

(c) Since positive externalities promote welfare, governments implement policies that promote positive externalities. When positive externalities are present, government may attempt to solve the problem through corrective subsidies to the producers aimed at either increasing the supply of the good or through corrective subsidies to consumers aimed at increasing the demand for the good.

(d) $Y = C + I + G$

$Y = 80 + 0.40 (Y - T + TR) + I + G$

$Y = 100 + 0.40(Y - 20 - 0.5Y + 50) + 400 + 200$

$Y = 100 + 0.40Y - 8 - 0.2Y + 20 + 600$

$Y = 712 + 0.2Y$

$Y - 0.2Y = 712$

$0.8\ Y = 712$

$Y = 712 \div 0.8$

$= 890$

OR

Gross Domestic Product (GDP) evaluated at current market prices and is not inflation adjusted. Therefore, nominal values of GDP for different time periods can differ due to changes in quantities of goods and services and/or changes in general price levels.