

B. A. (ECONOMICS HONOURS) EXAMINATION, 2024

(2nd Year, 1st Semester)

ECONOMICS

PAPER : ECO/B/C3.2

(Macroeconomics BI)

Time : Two Hours

Full Marks : 30

Answer *any two* questions.

1. (a) “In the Keynesian framework, the open economy proportional tax multiplier is less than the closed economy tax multiplier”. Examine the validity of the statement with proper mathematical and theoretical justification.
- (b) Consider a closed economy where the general price level is exogenously fixed at P . The goods market clearing condition is given by : $Y = C + I + G$, where the consumption demand (C) is a function of the disposable income ($Y - T$) such that $C = c(Y - T)$, $0 < c < 1$; the investment demand (I) is a function of the real interest r such that $I = \bar{I} - dr$, $d > 0$; total tax revenue in the economy (T) is a function of the aggregate real income such that $T = \tau Y$, $0 < \tau < 1$; and the Government expenditure (G) is autonomous such that $G = \bar{G}$. The money market clearing condition is given by : $\frac{M}{P} = L$,

(2)

where supply of money (M) is exogenous such that $M = \bar{M}$; and the demand for real balance (L) is a function of the real income (Y) and the nominal interest rate (i) such that $L = aY - bi$, $a, b > 0$. Finally, the nominal interest rate is the sum of the real rate of interest (r) and the expected rate of inflation (π^e) such that $i = r + \pi^e$. Assume that the economy starts from an equilibrium situation space where both the goods market and the money market are clear.

- (i) What is the impact of change in Government expenditure on equilibrium income?
- (ii) If expected inflation decreases, how will equilibrium income and real interest rate get affected?
- (iii) Now, assume that the economy faces inflationary pressures. Will this be contractionary or expansionary?

(Use mathematical derivation and graphical expositions to explain your answers)

- (c) Suppose in an economy,

$$C = 50 + 0.75Y(1 - t)$$

$$\bar{I} = 200 \quad G = 50 \quad t = 0.2$$

- (i) If the Government restricts unplanned inventory accumulation at 10% of the output, what is the level of output?
- (ii) If the Government wants to cut taxes so that in the current period, the unplanned inventory is sold out, how much should be the cut in taxes?

$$3 + (4 + 2 + 2) + (2 + 2)$$

[Continued]

(5)

Sl. No.	Particulars	Rs. In Crores
1	Factor income from NDP accruing to private sector	300
2	Income from property accruing to Government	70
3	Savings of non-departmental enterprises	60
4	Factor income from abroad	20
5	Consumption of fixed capital	35
6	Current transfers from rest of the world	15
7	Corporation taxes	25
8	Factor income to abroad	30
9	Current transfers from Governmental administrative department	40
10	Income tax paid by households	20
11	National debt interest	05
12	Savings of the private corporate sector	80

(4+5+6)

★ ★ ★

(3)

2. (a) Suppose in an economy there are two groups of income earners ---- Rich having an income of Y_R and Poor with income Y_P . The income share in GDP (Y) of Rich people is S_R and that of Poor is S_P , where $S_R > S_P$. The MPC of Rich is b_R and that of poor is b_P where $b_R < b_P$. The Rich pay a tax T_R and the poor pay a tax of T_P , where the share of tax of Rich in the total lumpsum tax (T) is W_R and that of Poor is W_P where $W_R > W_P$. Assume that $S_R \neq W_R$ and $S_P \neq W_P$. Assume that the Government raises G and balances it with a rise in T .

(i) If all the shares S_R, S_P, W_R, W_P remain unchanged, then do you still think that $\frac{dY}{dG} = 1$? Derive and justify the results.

(ii) Now assume that taxes are paid only by the Rich which gets distributed as subsidy amongst the Poor. If the taxes increase by dT , what will be the impact on GDP? Derive the multiplier here and then explain your result with proper logical justification.

(b) Consider the following data for an economy :

$$C = 295 + 0.8(Y - T); I = 275 - 50r$$

$$T = 25; G = 50$$

$$M / P = 0.65Y - 25r; M = 330$$

$$Y = 40N^{0.5}$$

$$W = 20$$

(All symbols have their usual meanings)

ECO-173

[Turn Over]

(4)

- (i) Derive the equation of the AD and AS curves and find out the equilibrium values of output prices and interest rate.
- (ii) If Government expenditure rises by 90, find out the change in output Y in terms of slope of AD and AS curves by deriving the appropriate formula.
- (iii) If the Central Bank of the economy adopts a tight monetary policy, explain with the help of diagram and intuition the impact on the economy, when

(A) Prices are sticky in the very short run.
(No mathematical derivation is required)

(B) Prices are fully flexible in the long run.
(No mathematical derivation is required)

(3+2)+(3+4+3)

3. (a) Explain, using diagrams, the $AD-AS$ equilibrium resulting from a decline in investment in the general Keynesian case in the short run in the presence of wage rigidity.

(b) Derive the Phillip's curve from the AS curve. Explain the rationale behind the shape of the Phillip's curve under :

(i) Adaptive Expectation

(ii) Rational Expectation

(c) Calculate (i) Private income, (ii) Personal income, (iii) Private disposable income from the following data :

ECO-173

[Continued]