Sales to Firm 2	50
Subsidies received by Firm 2	50
Purchases of labour from households	1500
Purchases of labour from abroad	500
Purchase of machinery from abroad	2000
Purchases from Firm 2	50
Capital consumption allowance	100
Indirect taxes paid by Firm 2	20
Business transfers of Firm 2	50
Government purchases from firms	200
Government wages	10
Government transfers	200
Subsidies paid by Government	200
Indirect taxes received by Government	100
Corporate profit taxes earned by Government	20
Personal taxes received by Government	10

(2+1)+(2+2)+(3+3+2)

★★★

BACHELOR OF ARTS EXAMINATION, 2025

[2nd Year, 1st Semester (Repeat)]

ECONOMICS

Course : ECO/UG/B/C3.2

(Macroeconomics B1)

Time : 2 *Hours* *Full Marks* : 30

Answer *any* **two** questions

1. *(a)* "There is more certainty in achieving a desired effect on output (Y) if government expenditure (G) changes rather than tax-rate (t) changes." Intuitively justify your answer.

(b) Suppose there are two groups of consumers in the economy given by A and B and the GDP is equally divided between them. The consumption functions of the two groups are

$$C_A = 100 + 0.5Y_A$$

$$C_B = 150 + 0.75Y_B$$

where C_A and C_B denote consumption and Y_A and Y_B denote income levels of group A and group B respectively. Also suppose $I = 200$, where I is investment.

(i) If the government takes away $\bar{T}$ amount of tax from group A and gives it to group B, then what will be the state of the economy at the initial equilibrium income (Y). Also, find out the amount of C, S and I (where C denotes aggregate consumption, S denotes aggregate savings and I denotes investment) at the same level of Y.

(ii) Will Y remain unchanged at the initial equilibrium level? If not, then describe in detail the process of change in Y that will occur.

(iii) Derive aggregate consumption function with MPC for the economy as a whole and the autonomous expenditure multiplier.

(iv) If the level of autonomous expenditure goes up by $\bar{T}$, then will the change in Y be the same as in *(ii)*? If not, then explain why.

(c) Consider the following function related to IS-LM model.

$$S = -500 + 0.2(Y - T) + 100r$$

$$I = 100 + 2Y - 80r$$

$$G = 300, T = 300$$

$$P = 1$$

$$M = 500$$

(All symbols have their usual meanings)

(c) Consider the data of a hypothetical economy with only two firms along with Government. All the following figures are in crores of rupees. From the following information on the hypothetical economy,

(i) calculate GDP at factor cost using the three methods of computing National Income.

(ii) calculate GNP and NNP at factor cost.

(iii) calculate aggregate national savings. Does the Savings-Investment identity hold?

Sales to households by Firm 1	1000
Sales to Government	100
Sales to abroad	20
Sales to Firm 2	50
Purchases of labour from households	500
Purchases of labour from abroad	20
Purchase of inputs from abroad	500
Purchase of machinery from abroad	1000
Purchases from Firm 2	50
Capital consumption allowance of Firm 1	50
Sales to households by Firm 2	2000
Sales to Government	100
Sales to abroad	200

(i) What are the equilibrium values of income (Y) and interest rate (r)?

(ii) Suppose the Central Bank increases money supply (M) directly by open market operations. Derive and explain, how will that intervention affect the income and interest rate?

(iii) Do you find any paradoxical result in part *(ii)*? Explain using proper justification.

(2+2+2+2)+(2+2+2+1)

2. *(a)* Compare and contrast the effects of increase in Government expenditure (G) on output level (Y) in the Complete Keynesian Model (CKM) with the IS-LM model. (Use appropriate derivations)

(b) Consider the following data :

Production Function : $Y = K^{0.5}L^{0.5}$

Capital Stock : $K = 10{,}000$

Labor Supply Function : $L_S = 20\dfrac{W}{P}$

Money Wage Rate : $\bar{W} = 10$

AD Function : $Y = 501 - P$

(i) Derive the values of L_f, Y_f and $\left(\dfrac{W}{P}\right)_f$.

(ii) Derive the aggregate supply function.

(iii) Derive the equilibrium values of Y, P and L. Also find $\dfrac{W}{P}$.

(iv) Derive the autonomous component of AD function for which real wage rate at $\bar{W} = 10$ is the full employment real wage rate.

(v) If the value of the autonomous component of AD function goes up further, how will W and P behave?

(c) Derive the Phillip's Curve from the AS curve using appropriate assumptions. 4+(2+1+2+2+1)+3

3. *(a)* Conceptually differentiate between personal income and personal disposable income. State the usefulness of these respective measures.

(b) Explain briefly whether the following statements are ***true*** or ***false***.

(i) The difference between investment and saving in a country equals the excess of borrowing by the investors over domestic savings.

(ii) The difference between GNP and GDP equals the surplus in the Balance of Trade (BOT).