Mid-Semester Exam (2024-25W)
LAL200 Macroeconomics

Date:19-02-2025 **Total Marks: 35**
Time: 2 Hours

PART A [5*3=15 Marks]

1. The value of nominal GDP of an economy was Rs. 2500 crores in a particular year. The value of GDP of that country in the same year, evaluated at the base year price was Rs. 3000 crores. Calculate the GDP deflator of the year in percentage terms. Has the price level risen between the base year and the current year under consideration?
   Soln:
   (Nominal GDP/Real GDP)*100 [1mark]
   (2500/3000) *100 = 83.33 [1mark]
   No, the price level has fallen by 16.7% [1 mark]

2. What impact does "money illusion" have on:
   (i) Neutrality of money - There is an indirect relation as the real wages will not affect nominal wages (classical dichotomy); and money is not just a medium of exchange according to Keynes. [1 mark]
   (ii) Wage Rigidity – Wages are downward rigid as the workers are highly concerned about the reduction in money wages (and not real wages). [1 mark]
   (iii) Labour demand curve in Keynesian models – Labour demand curve in the Keynesian models are dependent on the real wage and not nominal wages. [1 mark]

3. Following a downward shift in the consumption function, what resultant changes will you observe in the following variables? Explain the dynamics.
   (i) Income - Income will fall lowing to a reduction in consumption and aggregate demand [1 mark]
   (ii) Rate of Interest – As consumption falls, AD falls and inorder to boost the economy, the interest must be reduced so as to stimulate investments [1 mark]
   (iii) Liquidity Preference – Reduction in consumption shall reduce the AD causing a fall in output and income and thereby a fall in the liquidity preference.[1 mark]

4. What is the range of Gini coefficient? State the values of the coefficient corresponding to perfect inequality and illustrate the Lorenz curve when inequality is very high.
   0-1 [1 mark]
   1 [1 mark]
   Lorenz curve will be highly bulging towards the x-axis. [1mark]

5. Show graphically how your IS curve looks like if:
   (i) Investment does not depend on interest rate – IS curve vertical [1 mark]
   (ii) MPC is zero – Downward sloping steeper IS (As only one component, interest rate causes a change in Investment and thereby Income) [1 mark]
   (iii) MPC is one – Horizontal IS curve (For all values of Y, the equilibrium will be attained at a special rate of interest). [1 mark]

PART B [2*10 = 20 Marks]

1. (i) Calculate the national income and gross national disposable income from: [6 Marks]

Sl. No.	Item	Rs. (Crores)
1	Net Indirect Tax	5
2	Net Domestic Capital Formation	100
3	Net Exports	-20
4	Govt. Final Consumption Expenditure	200
5	Net Current Transfers from Abroad	15
6	Private Final Consumption Expenditure	600
7	Change in Stock	10
8	Net Factor Income from Abroad	5
9	Gross Domestic Fixed Capital Formation	125

Soln:

GDPmp = Item 4+ Item 6+ Item 9+ Item 3 = 905 Crores [2 marks]
NNPfc= GDPmp+ Item 8 - (Item 9 - Item 2 = depreciation = 25) - Item 1 = 880 Crores [2 marks]
GNDI = NNPfc+ Item 5+ depreciation = 920 Crores [2 marks]

(ii) From the transactions related to three sectors of an economy given below, calculate GDP at Factor Cost. [4 marks]

Item	Primary	Secondary	Tertiary
Sales	500	750	650
Intermediate Consumption	75	125	75
Indirect Taxes	60	65	85

Depreciation	50	60	75
Subsidies	35	40	35

Soln:
GDPmp = GVAprimary+ GVAsecondary+ GVAtertiary = 425+625+575=1625 [2 marks]
Total Net Indirect Taxes = (60-35)+(65-40)+(85-35) =100 [1 mark]
GDPfc= 1625-100 = 1525. [1 mark]

2. (i) Given the following goods and money market variables, find (a) IS and LM functions [4 Marks]; (b) Equilibrium level of income and interest rate [2 Marks].

$$C = 100 + 0.8(Y - T)$$
$$I = 100 - 100i$$
$$G = 200$$
$$T = 0.25Y$$
$$M_d = 0.5Y + 100 - 37.5i$$
$$M_s = 200$$

C is consumption, I is investment, G is government spending, Y is income, T is taxes and i is interest rate. M_d is money demand and M_s is money supply.
Soln: For IS, solve Y = C +I+G; gives Y = 1000 – 25i [2 marks]
For LM solve, Md=Ms gives 0.5Y+100-37.5i=200 implies Y = 200+75i [2 marks]
IS = LM gives equilibrium Y = 800 and I = 8% [2 marks]

(i) Consider the following IS-LM model: [4 Marks]

$$Y = Z$$
$$Z = C + I + G$$
$$C = c_0 + c_1(Y - T)$$
$$I = b_0 + b_1 Y - b_2 i$$
$$i = \bar{\imath}$$

C is consumption, I is investment, G is government spending, T is taxes and i is interest rate. Suppose the Central bank sets the nominal interest rate $i = \bar{\imath}$, and T and G are given. Parameters c_0, c_1, b_0, b_1 and b_2 are positive and $b_1 + c_1 < 1$. Derive the equation of IS curve (i as a function of Y). What is the slope of the IS curve?
Soln:
Add: Y= C+I+G = $\frac{1}{1-c_1-b_1}(c_0 - c_1 T + b_0 - b_2 i + G)$ [1 mark]
Implies $i = -\frac{(1-c_1-b_1)}{b_2} Y + \frac{1}{b_2}(c_0 - c_1 T + b_0 + G)$ [2 marks]
Slope = $-\frac{(1-c_1-b_1)}{b_2}$ [1 mark]