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ECN121: INTRODUCTION TO ECONOMICS (MACRO)

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QUESTIONS
1) State four uses of macroeconomic models
2) Given a consumption function 40 + 0.75Y and an autonomous investment 60
   a) Find the equilibrium output, consumption and savings at equilibrium
   b) Show that at equilibrium spending equals output and savings leakages equals
      investment injection.
3) State five macroeconomic objectives and specify an appropriate goal for each.
4) Using an appropriate diagram fully explain the circular flow of income in an open
   economy.
5) Using appropriate examples distinguish between frictional and structural unemployment
6) Graphically illustrate the concept of inflationary and deflationary gaps.
7) State three costs of economic growth
8) Algebraically illustrate the three sources of financing investment
9) Identify five importance of national income data
10) Distinguish between the following:  i) Absolute income and relative income hypothesis
    (ii) income and life-time income hypothesis
    a. List and explain three (3) types of unemployment.
    b) List and explain ways by which governments can reduce unemployment. C)What are the potential benefits of falling
   unemployment to the (i) unemployed individual (ii) economy (iii) government?
11) Write short notes on the following; i) international trade  ii) autarky iii) factor proportions theory  iv) Leontief paradox  v) import tariff  vi) import quota

12) Given the following structural equations for a 2-sector economy (in Naira).

\[ C = 100 + 0.75Y \]
\[ I = 300 \]

(i) Calculate the equilibrium level of income (Y), consumption (C) and savings (S).
(ii) If the full employment income is N5000, by how much must investment change to bring the economy to the full employment level?
(iii) What are the full employment levels of I, C and S.

13) State the rule of 72.

i). In how many years will it take income to double if it is rising each year by 2, 3 and 4 percent?
ii). Which country would have higher income in 36 years: country A that begins with income of N3,000, increasing at an annual rate of 4 percent a year or country B that begins with income of N6,000, increasing at an annual rate of 2 percent a year? Which will have higher income in 72 years?
iii) A country's income begins at N10,000 and rises to N20,000 in 18 years. What is the approximate annual rate of increase of income?

14) Explain the major types of inflation.

15) With vivid examples, distinguish between frictional and structural unemployment.

16) Briefly explain why Nations trade according to the following predictions:

i) Mercantilist  ii) Adam Smith  iii) David Ricardo  (5 marks each)

18) Answer the following questions using the table below.

<table>
<thead>
<tr>
<th>Year</th>
<th>Real Output</th>
<th>Nominal Output</th>
<th>GDP deflator (2000=100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>5161.92</td>
<td>2789.5</td>
<td></td>
</tr>
<tr>
<td>1981</td>
<td>5291.61</td>
<td></td>
<td>59.12</td>
</tr>
<tr>
<td>1982</td>
<td></td>
<td>3255.0</td>
<td>62.73</td>
</tr>
<tr>
<td>1983</td>
<td></td>
<td></td>
<td>65.21</td>
</tr>
<tr>
<td>1984</td>
<td>5813.18</td>
<td>3933.2</td>
<td></td>
</tr>
</tbody>
</table>
a. What is the GDP deflator in 1980?
b. What is nominal output in 1981?
c. What is real output in 1982?
d. Real output rose 4.5% in 1983. What was nominal output in 1983?
e. What was the GDP deflator in 1984?
f. Why are all the GDP deflators less than 100?

19) Consider the trade relations between Nigeria and Ghana as shown below:

<table>
<thead>
<tr>
<th></th>
<th>Yam</th>
<th>Banana</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nigeria</td>
<td>60</td>
<td>75</td>
</tr>
<tr>
<td>Ghana</td>
<td>120</td>
<td>150</td>
</tr>
</tbody>
</table>

i. Which has an absolute advantage in Yam?
ii. Which has an absolute advantage in Banana?
iii. Which has a comparative advantage in Banana
iv. Which has a comparative advantage in Yam?
v. Assume that Nigeria sells 700 tonnes of banana at $5 per tonnes to Ghana and buys 950 tonnes of Yam at $9 per tonne. What is Nigeria’s trade balance? Is it a deficit or surplus?

20) From the information in the table below, calculate the following statistics.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal consumption</td>
<td>₦1,344</td>
</tr>
<tr>
<td>Investment</td>
<td>456</td>
</tr>
<tr>
<td>Net nonbusiness interest income</td>
<td>270</td>
</tr>
<tr>
<td>Government purchases</td>
<td>480</td>
</tr>
<tr>
<td>Profit</td>
<td>406</td>
</tr>
<tr>
<td>Employee compensation</td>
<td>1520</td>
</tr>
<tr>
<td>Net exports</td>
<td>24</td>
</tr>
<tr>
<td>Rents</td>
<td>2</td>
</tr>
<tr>
<td>Depreciation</td>
<td>278</td>
</tr>
<tr>
<td>Indirect business taxes</td>
<td>156</td>
</tr>
<tr>
<td>Corporate retained earnings</td>
<td>249</td>
</tr>
<tr>
<td>Description</td>
<td>Value</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Net foreign factor income</td>
<td>5</td>
</tr>
<tr>
<td>Interest</td>
<td>98</td>
</tr>
<tr>
<td>Social Security taxes</td>
<td>150</td>
</tr>
<tr>
<td>Transfer payments</td>
<td>300</td>
</tr>
<tr>
<td>Personal taxes</td>
<td>214</td>
</tr>
<tr>
<td>Statistical discrepancy</td>
<td>0</td>
</tr>
</tbody>
</table>

a. Gross domestic product  
b. Gross national product  
c. Net domestic product  
d. National income  
e. Personal income  
f. Disposable personal income
SUGGESTED ANSWERS

1. Four uses of macroeconomic models
   ✓ To explain macroeconomic issues
   ✓ To contribute to theoretical debates
   ✓ To predict macroeconomic phenomena
   ✓ Basically the role of macroeconomic models is to predict the direction of change in macroeconomic variables as well as to analysis macroeconomic issues

3) State 5 macroeconomic objectives and specify a goal for each
   ✓ Stable domestic price or minimal inflation.
   ✓ Full employment or minimum unemployment
   ✓ Rapid economic government/Goal: to achieve an average of 5% growth rate over the next 5 years.
   ✓ Balance of payment equilibrium
   ✓ Exchange rate stability

5) Frictional unemployment results from moving between jobs. This is a result of inadequate information about better job opportunities, going through the process of application through to taking on an appointment. For instance, if one resigns from a teaching appointment with the hope of picking up a job in an oil company but failed to secure the appointment…

   WHILE
   Structural unemployment is occasioned by structural changes in the economy, which render some workers unsuitable because of their skills do not match the new needs of the labour market. For example, technological advancement, which allows for the use of machines to displace manual labour?

7) State the costs of economic growth
   ✓ Inflation
   ✓ Externalities
   ✓ Inequality

9) Significance of national income
   ✓ Forms the basis of national policies
   ✓ Used for economic planning
   ✓ Used to access the economic growth of a country
   ✓ To know how well each sector is performing
   ✓ For comparison.
11) a. List and explain three (3) types of unemployment.

**Hint: Explain the following and any other**
- i. Frictional unemployment
- ii. Cyclical Unemployment
- iii. Structural Unemployment
- iv. Underemployment
- v. Open Unemployment

b. List and explain ways by which governments can reduce unemployment.

**Hint: Explain the following and any other**
- i. Providing a near perfect information system for the labour market (of job seekers and prospective employers)
- ii. Stabilization policies, government policies intended to maintain full employment and a reasonably stable price level, can be used.
- iii. Expansionary fiscal and monetary policies can be used.
- iv. Provision of vocational training programs

c. What are the potential benefits of falling unemployment to the (i) unemployed individual (ii) economy (iii) government?

**Hint: Explain the following and any other**
- i. Benefit to individual: income security; happiness; stable standard of living; skill development; increased entrepreneurial drive; fulfilment; good physical and mental health
- ii. Benefit to economy: higher aggregate demand; reduced tendency for social conflict and crime; increasing gross domestic product; increasing savings rate; increase in goods and services; high living standards; improved income distribution; reduction in inequality; can promote investment
- iii. Benefit to government: higher tax income; reduced expenditure; reduced external borrowing; will spend less on unemployment benefits

13) Given the following structural equations for a 2-sector economy (in \( \mathbb{N} \)).

\[
C = 100 + 0.75Y \\
I = 300
\]

i) Calculate the equilibrium level of income (Y), consumption (C) and savings (S).

ii) If the full employment income is \( \mathbb{N}5000 \), by how much must investment change to bring the economy to the full employment level?

iii) What are the full employment levels of I, C and S.

i) \( C = 100 + 0.75Y \)
I = 300
Y = C + I = 100 + 0.75Y + 300
Y = 1600

C = 100 + 0.75(1600)
   = 100 + 1200 = 1300
S = Y – C
   1600 – 1300 = 300

ii) \[ \Delta Y = \text{NEW INCOME} - \text{OLD INCOME} \]
\[ \Delta Y = 5000 - 1600 = 3400 \]
\[ \Delta Y = \frac{1}{1-b} (\Delta I) \]
\[ \Delta I = 3400 (1 - 0.75) \]
   = 850

iii) Full employment level of I, C and S

I = I + \Delta I
   = 1150

C = 100 + 0.75(5000)
   = 3850

S = Y – C
   = 1150

15) Major types of inflation

Demand-Pull Inflation

**Demand-pull inflation** is an inflation that results from an initial increase in aggregate demand. Demand-pull inflation may result from any factor that increases aggregate demand. Two factors controlled by the government are increases in the quantity of money and increases in government purchases. A third possibility is an increase in exports.

**Initial Effect of an Increase in Aggregate Demand**
Starting from full employment, an increase in aggregate demand shifts the $AD$ curve rightward. Real GDP increases, the price level rises, and an inflationary gap arise. The rising price level is the first step in the demand-pull inflation. The higher level of output means that real GDP exceeds potential GDP—an inflationary gap. The money wages rises and the $SAS$ curve shifts leftward. Real GDP decreases back to potential GDP but the price level rises again. Aggregate demand keeps increases and the process just described repeats indefinitely. Although any of several factors can increase aggregate demand to start a demand-pull inflation, only an ongoing increase in the quantity of money can sustain it.

**Cost-Push Inflation**
Cost-push inflation is an inflation that results from an initial increase in costs. There are two main sources of increased costs: an increase in the money wage rate or an increase in the money price of raw materials, such as oil.

**Initial Effect of a Decrease in Aggregate Supply**
FIGURE 29.4  A Cost-Push Rise in the Price Level

Factor price rise shifts SAS leftward and causes stagflation.
The rising price level is the start of the cost-push inflation. The initial increase in costs a one-time rise in the price level, not inflation. To create inflation, aggregate demand must increase. The figure above illustrates an aggregate demand response to stagflation, which might arise because the Fed stimulates demand to counter the higher unemployment rate and lower level of real GDP.

The increase in aggregate demand shifts the $AD$ curve rightward. Real GDP increases and the price level rises again.

2. **Unanticipated Inflation in the Labor Market**: Unanticipated inflation has two main consequences in the labor market.

a. it redistributes income and brings departures from full employment.

b. Higher than anticipated inflation lowers the real wage rate and employers gain at the expense of workers.

c. Lower than anticipated inflation raises the real wage rate and workers gain at the expense of employers.

d. Lower than anticipated inflation raises the real wage rate, decreases the quantity of labor demanded, and increases the unemployment rate.

e. Unanticipated inflation imposes costs on both workers and firms.

**Unanticipated Inflation in the Market for Financial Capital**

a. Unanticipated inflation has two main consequences in the market for financial capital: it redistributes income and results in too much or too little lending and borrowing.

b. If the inflation rate is unexpectedly high, borrowers gain but lenders lose.

c. If the inflation rate is unexpectedly low, lenders gain but borrowers lose.

d. When the inflation rate is higher than anticipated, the real interest rate is lower than anticipated, and borrowers want to have borrowed more and lenders want to have loaned less.

e. When the inflation rate is lower than anticipated, the real interest rate is higher than anticipated, and borrowers want to have borrowed less and lenders want to have loaned more.
17) Briefly explain why Nations trade according to the following predictions:

i) Mercantilist ii) Adam Smith iii) David Ricardo (5 marks each)

i) Mercantilism

✔ Nations trade to increase their wealth
✔ To achieve this, they strive to increase the volume of gold and silver through increase in export and reduction of imports.
✔ Thus, nations trade to increase their wealth through trade surplus

ii) Adam Smith

✔ Nations trade because of absolute advantage

iii. David Ricardo

✔ Nations trade due to comparative advantage

19)

i) Nigeria has an absolute advantage in yam since 60 < 1

ii) Nigeria has an absolute advantage in banana since 75 < 1

iii. None, since 75/60 = 150/120

iv) None, since 60/120 = 75/150

v) Trade balance = X – M = 3500 8500 = -5030