S5 Economics Practice Paper 2 | national income, unemployment, inflation, exchange rate and multipliers

Senior Secondary Economics

S5 Economics practice paper with answers: GDP by expenditure, unemployment, CPI inflation, real wage, exchange rate, trade balance, fiscal and deposit multipliers.

1. National income: expenditure approach and output per head (16 marks)

An economy (amounts in billions of dollars): private consumption 1,200, gross domestic fixed capital formation 380, government final consumption expenditure 450, exports of goods and services 900, imports of goods and services 780, net factor income from abroad -40 and depreciation 120. Population 7.5 million.

#	Question	Answer and marking notes
1	(a) Calculate gross domestic product (GDP) using the expenditure approach.	Answer: GDP = C + I + G + X - M = 1,200 + 380 + 450 + 900 - 780 = $2150 billion.
2	(b) Calculate gross national product (GNP).	Answer: GNP = GDP + net factor income from abroad = 2150 + (-40) = $2110 billion.
3	(c) Calculate net national product (NNP).	Answer: NNP = GNP - depreciation = 2110 - 120 = $1990 billion.
4	(d) Calculate GDP per head in dollars to the nearest dollar and state two limitations of using it to compare living standards.	Answer: GDP per head = 2150 billion / 7.5 million = $286,667. Limitations: it ignores price level differences and income distribution, and it excludes non-market activity such as housework and volunteering, environmental costs and the value of leisure.

2. Unemployment rate and labour force participation (18 marks)

In a place the working-age population is 6.2 million, the labour force is 3.72 million and employment is 3.57 million. Give rates to two decimal places.

#	Question	Answer and marking notes
5	(a) Calculate the number of unemployed persons and the unemployment rate.	Answer: unemployed = 3.72 - 3.57 = 15 (ten thousand); unemployment rate = 150000 / 3720000 x 100 per cent = 4.03 per cent.
6	(b) Calculate the labour force participation rate.	Answer: participation rate = 3720000 / 6200000 x 100 per cent = 60.00 per cent.
7	(c) If 40000 unemployed persons give up job search, recalculate the unemployment rate and the participation rate and explain the direction of change.	Answer: labour force = 3720000 - 40000 = 3680000; unemployed = 110000; unemployment rate = 2.99 per cent (falls); participation rate = 59.35 per cent (falls). Those who stop searching leave the labour force, so both the numerator and the denominator shrink and the measured rate is pushed down.
8	(d) Apart from the case above, state one other factor that makes the official unemployment rate understate labour market slack.	Answer: underemployment, where workers can only find part time or temporary work, is not counted as unemployment although hours and income are insufficient, so the official rate understates the slack; hidden employment in the informal sector is also excluded.

3. Consumer price index, real wage and real interest rate (16 marks)

Basket weights: food 0.35, housing 0.32, transport 0.12, others 0.21. All base period group indices are 100 and the current period indices are 108, 106, 103 and 102. The nominal wage rises by 6.2 per cent and the nominal interest rate is 3.5 per cent.

#	Question	Answer and marking notes
9	(a) Calculate the current weighted consumer price index to two decimal places.	Answer: CPI = 0.35×108 + 0.32×106 + 0.12×103 + 0.21×102 = 105.50.
10	(b) Calculate the inflation rate.	Answer: inflation rate = (105.50 - 100) / 100 x 100 per cent = 5.50 per cent.
11	(c) Calculate the percentage change in the real wage to two decimal places.	Answer: change in real wage = (1.062 / 1.0550 - 1) x 100 per cent = 0.66 per cent, so the real wage rises only slightly.
12	(d) Calculate the exact real interest rate to two decimal places and state whether the saver purchasing power rises or falls.	Answer: real interest rate = (1.035 / 1.0550 - 1) x 100 per cent = -1.90 per cent, which is negative, so because inflation exceeds the nominal rate the purchasing power of the saver falls.

4. Exchange rate movements and the trade balance (18 marks)

The Hong Kong dollar is linked to the US dollar and the rate falls from 7.80 to 7.85 Hong Kong dollars per US dollar. A Hong Kong exporter charges 100 US dollars per unit and imports raw materials costing 250 US dollars. Annual goods exports are 420 billion dollars and goods imports are 450 billion dollars.

#	Question	Answer and marking notes
13	(a) How much does the exporter receive per unit in Hong Kong dollars before and after the change, and what is the percentage change?	Answer: from 100 x 7.80 = $780 to 100 x 7.85 = $785, a change of (7.85 / 7.80 - 1) x 100 per cent = 0.64 per cent.
14	(b) What is the Hong Kong dollar cost of the imported materials per unit before and after the change?	Answer: from 250 x 7.80 = $1950 to 250 x 7.85 = $1962.5, an increase of $12.5, or 0.64 per cent.
15	(c) Calculate the trade balance and the ratio of exports to imports as a percentage to two decimal places.	Answer: trade balance = 4,200 - 4,500 = -$300 billion, a deficit; exports as a percentage of imports = 4,200 / 4,500 x 100 per cent = 93.33 per cent.
16	(d) A weaker Hong Kong dollar should improve export competitiveness, yet the deficit may not narrow at once. Explain why.	Answer: in the short run import contracts and volumes are fixed, so a weaker dollar raises import costs measured in Hong Kong dollars and the deficit widens first; exporters also need time to win orders and adjust capacity, and the balance only improves once export volumes rise and import volumes fall in response to higher prices. This is the J curve effect.

5. Fiscal multiplier and the balanced budget multiplier (16 marks)

In an economy the marginal propensity to consume is 0.75, there is substantial spare capacity and the price level is constant.

#	Question	Answer and marking notes
17	(a) Calculate the government expenditure multiplier.	Answer: multiplier = 1 / (1 - 0.75) = 4.0.
18	(b) Government expenditure rises by 80 billion dollars. Calculate the change in equilibrium output.	Answer: change in output = 80 x 4.0 = $320 billion.
19	(c) If the government also raises lump sum tax by 80 billion dollars to keep the budget balanced, calculate the tax multiplier and the net change in output.	Answer: tax multiplier = -0.75 / (1 - 0.75) = -3.0; change from the tax = 80 x (-3.0) = -$240 billion; net change = 320 - 240 = +$80 billion.
20	(d) Explain why the balanced budget multiplier equals 1 rather than zero.	Answer: each dollar of government spending injects a full dollar of demand, while each dollar of extra tax cuts consumption by only 0.75 because the rest comes out of saving, so the injection exceeds the leakage and the net effect equals the size of the balanced change, giving a multiplier of 1.

6. Deposit multiplier and the required reserve ratio (16 marks)

The required reserve ratio is 10 per cent, the public holds no extra cash and banks hold no excess reserves. The central bank buys 50 billion dollars of bonds in the open market.

#	Question	Answer and marking notes
21	(a) Calculate the deposit multiplier of the banking system.	Answer: deposit multiplier = 1 / 0.10 = 10.0.
22	(b) Calculate the total deposits the banking system can eventually create.	Answer: new deposits = 50 x 10.0 = $500 billion.
23	(c) If the required reserve ratio is raised to 12.5 per cent, recalculate the multiplier and the deposits created by the same 50 billion dollars.	Answer: multiplier = 1 / 0.125 = 8.0; new deposits = 50 x 8.0 = $400 billion.
24	(d) Explain why the actual deposit creation is usually smaller than the theoretical value.	Answer: the public holds cash, so part of the money leaks out of the banking system; banks may also keep excess reserves for withdrawals and regulatory requirements; and when demand for loans is weak the process stops early, so fewer deposits are created.