S6 Economics Practice Paper: Price Elasticity of Demand, Cross and Income Elasticity, Market Intervention and Efficiency, Production and Costs, National Income and Macro Indicators, Money, Banking and Inflation, International Trade and Exchange Rates

S6 | Economics | Time: 75 minutes | Total: 100 marks | 24 questions

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Price, Cross and Income Elasticity

Part A: Elasticity of demand (16 marks)

1. The price of a good rises by 10% and its quantity demanded falls by 5%. Find the price elasticity of demand (absolute value) and state whether demand is elastic or inelastic. [4]

Answer: PED = 5% / 10% = 0.5, which is less than 1, so demand is inelastic and a price rise raises total revenue.

2. The price of good B rises by 8% and the quantity demanded of good A rises by 4%. Find the cross price elasticity of A with respect to B and state whether the goods are substitutes or complements. [4]

Answer: XED = 4% / 8% = 0.5; the value is positive, so the goods are substitutes: a rise in the price of B makes buyers switch to A.

3. A consumer income rises by 5% % and the quantity demanded of a good rises by 8% %. Find the income elasticity and state whether the good is a normal good, an inferior good or a luxury good. [4]

Answer: YED = 8% / 5% = 1.6; since it exceeds 1, the good is a normal good of the luxury type (income elastic).

4. The price of a good falls from $100 to $90 and sales rise from 50 to 60 units. Find total revenue before and after the price change and the percentage change in total revenue. [4]

Answer: Old TR = 100 x 50 = $5000; new TR = 90 x 60 = $5400; change = (5400 - 5000) / 5000 x 100% = +8%.

Market Intervention and Efficiency

Part B: Market intervention and efficiency (16 marks)

5. The equilibrium price of a market is $25. The government sets a price ceiling of $20: at that price quantity demanded is 180 units and quantity supplied is 120 units. Find the shortage. [4]

Answer: Shortage = 180 - 120 = 60 units; the ceiling is below the equilibrium price, so quantity demanded exceeds supply.

6. A per unit tax of $6 is imposed; the price rises from $22 to $26 and 90 units are traded. Find the tax burden on consumers and on producers, and the tax revenue. [4]

Answer: Consumer burden = 26 - 22 = $4; producer burden = 6 - 4 = $2; tax revenue = $6 x 90 = $540.

7. An import quota of 80 units is set and the domestic price rises from the world price of $22 to $30. Find the quota rent per unit and the total quota rent. [4]

Answer: Quota rent per unit = $30 - $22 = $8; total = $8 x 80 = $640.

8. Under free trade 100 units are traded; after a quota the quantity falls to 80 units and the price rises from $22 to $30. Find the deadweight loss using the triangle area. [4]

Answer: Deadweight loss = 1/2 x (100 - 80) x ($30 - $22) = 1/2 x 20 x 8 = $80.

Production and Costs

Part C: Production and costs (17 marks)

9. A firm has total fixed cost of $600 and total variable cost of $1500 at an output of 30 units. Find total cost, average cost, average variable cost and average fixed cost. [4]

Answer: TC = 600 + 1500 = $2100; AC = 2100 / 30 = $70; AVC = 1500 / 30 = $50; AFC = 600 / 30 = $20.

10. When a firm raises output from 30 to 34 units, total cost rises from $2100 to $2280. Find the marginal cost. [4]

Answer: MC = (2280 - 2100) / (34 - 30) = 180 / 4 = $45.

11. A perfectly competitive firm faces a market price of $45; its profit-maximising output is 40 units and total cost at that output is $1680. Find total revenue and profit. [4]

Answer: TR = $45 x 40 = $1800; profit = $1800 - $1680 = $120, a positive short-run profit.

12. When output rises from 100 to 200 units, long-run average cost falls from $80 to $64. Find the percentage fall in LRAC, state whether this shows economies or diseconomies of scale, and give one cause. [5]

Answer: Fall = (80 - 64) / 80 x 100% = 20%; cost falls as scale rises, which is economies of scale, caused for example by bulk buying, greater division of labour and spreading specialist machinery over more units.

National Income and Macro Indicators

Part D: National income and macro indicators (17 marks)

13. Calculate GDP by the expenditure approach: private consumption $1200, investment $400, government spending $300, exports $900 and imports $800 (in billions). [4]

Answer: GDP = C + I + G + X - M = 1200 + 400 + 300 + 900 - 800 = $2000 billion.

14. Nominal GDP rises by 5% while the GDP deflator rises by 2%. Find the real GDP growth rate (one decimal place). [4]

Answer: Real growth = (1.05 / 1.02 - 1) x 100% = 2.9%, the real gain after removing price changes.

15. A place has a GDP of $2000 billion and a population of 8 million. Find GDP per capita in dollars (to the nearest dollar). [4]

Answer: GDP per capita = 2000 x 10^9 / 8 x 10^6 = $266667.

16. A place has 3.6 million employed and 0.24 million unemployed. Find the labour force and the unemployment rate (two decimal places), and state whether a rise in the unemployment rate always means fewer people employed. [5]

Answer: Labour force = 3.6 + 0.24 = 3.84 million; unemployment rate = 0.24 / 3.84 x 100% = 6.25%. Not necessarily: if the labour force grows faster than employment, employment can rise while the unemployment rate also rises.

Money, Banking and Inflation

Part E: Money, banking and inflation (17 marks)

17. The required reserve ratio of a banking system is 20% and the central bank injects new deposits of $1000. Find the money multiplier and the maximum total deposits the system can create. [4]

Answer: Money multiplier = 1 / 0.20 = 5; maximum deposits = $1000 x 5 = $5000.

18. The consumer price index rises from 120 to 126 while the nominal interest rate is 3%. Find the inflation rate and the real interest rate. [4]

Answer: Inflation = (126 - 120) / 120 x 100% = 5%; real interest rate = 3% - 5% = -2%, a negative real rate, so deposits lose purchasing power.

19. A person deposits $1000 and the inflation rate over the year is 5%. Find the real purchasing power of the money after one year in today prices (two decimal places). [4]

Answer: Real purchasing power = $1000 / (1 + 0.05) = $952.38; the price rise means the same money buys $47.62 less.

20. The reserve ratio is 25% and a customer deposits $5000. Find the money multiplier, the maximum total deposits and the extra deposits the banking system can create. [5]

Answer: Money multiplier = 1 / 0.25 = 4; maximum deposits = $5000 x 4 = $20000; extra deposits = $20000 - $5000 = $15000.

International Trade and Exchange Rates

Part F: International trade and exchange rates (17 marks)

21. The exchange rate moves from 7.80 HKD per USD to 7.50 HKD per USD. Find the appreciation of the HKD and state the effect on Hong Kong exports. [4]

Answer: HKD appreciation = (7.80 / 7.50 - 1) x 100% = 4.0%; exports become dearer in foreign currency, so export competitiveness falls.

22. Country A needs 2 hours for one unit of cloth and 8 hours for one unit of wine; Country B needs 4 hours for one unit of cloth and 4 hours for one unit of wine. Find the opportunity cost of cloth in each place and state who has a comparative advantage in cloth. [4]

Answer: Opportunity cost for A = 2 / 8 = 0.25 units of wine; for B = 4 / 4 = 1 unit of wine. A has the lower opportunity cost, so A has a comparative advantage in cloth and should specialise in it.

23. An imported good has a world price of $100 and the government imposes an ad valorem tariff of 20%; imports fall from 500 to 300 units. Find the domestic price and the tariff revenue. [4]

Answer: Domestic price = $100 x (1 + 0.20) = $120; tariff revenue = ($120 - $100) x 300 = $6000.

24. A place has goods exports of $900 billion, goods imports of $800 billion and net factor income from abroad of -$50 billion. Find the current account balance and state whether it is a surplus or a deficit. [5]

Answer: Current account = 900 - 800 + (-50) = $50 billion, a surplus, which means the place is a net exporter of capital.
