# S4 Economics Practice Paper: Basic Economic Problems and Opportunity Cost, Demand, Supply and Elasticity, Price Controls, Production and Cost, Market Structure, National Income

Level: S4 | Subject: Economics | 75 minutes | 100 marks | 24 questions | question paper

## Section A Basic Economic Problems and Opportunity Cost (18 marks)

**Show all working. Give units and a brief explanation in every answer.**

| # | Question | Marks |
|---|---|---|
| 1 | Ming can work in a convenience store for $180 an hour or tutor for $250 an hour. He has 5 hours available each evening. (a) What is the opportunity cost of tutoring for the whole evening? (b) How much better off is he than if he worked in the store for the whole evening? | 4 |
| 2 | An economy produces only rice and cloth. Using all resources for rice gives 200 tonnes, and for cloth gives 1.5 million metres. The production possibility curve is a straight line. (a) Calculate the opportunity cost of one more tonne of rice. (b) Where does the combination of 150 tonnes of rice and 0.3 million metres of cloth lie? | 4 |
| 3 | A community has 1,000 labour hours, which can produce either 500 meal boxes or 250 garments. (a) State the three basic economic questions. (b) Calculate the opportunity cost of one garment. (c) Which is a free good, oxygen in the air or a meal box? Explain. | 5 |
| 4 | Country A can produce 10 phones or 20 garments per hour; Country B can produce 6 phones or 18 garments per hour. Each country has 10 labour hours and currently devotes 5 hours to phones and 5 hours to garments. (a) Calculate the opportunity cost of one phone in each country. (b) State the good each country should specialise in. (c) If each specialises by comparative advantage, what are the combined outputs? | 5 |

## Section B Demand, Supply and Elasticity (17 marks)

**Calculate elasticities with the original-value method and show the percentage changes.**

| # | Question | Marks |
|---|---|---|
| 5 | The price of a good falls from $20 to $18 and quantity demanded rises from 500 to 560 units. (a) Calculate the price elasticity of demand. (b) Classify the elasticity and calculate the change in total revenue. | 4 |
| 6 | A household income rises from $25,000 to $27,000 a month and its demand for organic food rises from 40 to 46 packs. (a) Calculate the income elasticity of demand. (b) Classify the good. | 4 |
| 7 | The price of good Y rises by 10% and this makes the quantity demanded of good X fall by 4%. (a) Calculate the cross elasticity of demand of X with respect to Y. (b) State the relationship between X and Y and give one example. | 4 |
| 8 | In a market the demand function is Qd = 180 - 4P and the supply function is Qs = 20 + 4P (Q is quantity, P is price). (a) Calculate the equilibrium price and quantity. (b) If demand becomes Qd = 220 - 4P, calculate the new equilibrium. (c) State whether this is a change in demand or in supply and explain why. | 5 |

## Section C Price Controls and Market Intervention (17 marks)

**Use Qd = 180 - 4P and Qs = 20 + 4P unless stated otherwise.**

| # | Question | Marks |
|---|---|---|

| | | |
|---|---|---|
| 9 | The government imposes a price ceiling of $15. (a) Calculate quantity demanded, quantity supplied and the shortage. (b) Give two non-price rationing methods that appear under a price ceiling. | 4 |
| 10 | The government instead sets a price floor of $25. (a) Calculate the surplus. (b) If the government buys up the whole surplus, what is the cost? (c) Explain why the policy causes a loss of efficiency. | 4 |
| 11 | The government instead sets a quota of 90 units. (a) Calculate the market price under the quota. (b) Compared with the free-market equilibrium, explain how consumer surplus and the surplus of quota holders change. | 4 |
| 12 | The government levies a per-unit tax of $6 on sellers. (a) Calculate the price paid by buyers and the quantity traded. (b) Calculate the governments tax revenue. (c) State who bears the larger share of the tax and explain why. | 5 |

## Section D Production and Cost (16 marks)

**Costs are in dollars. Give units in every answer.**

| # | Question | Marks |
|---|---|---|
| 13 | A firm has total fixed cost of $300 and total variable cost of $500 at an output of 20 units. (a) Calculate total cost, average fixed cost, average variable cost and average total cost. (b) If output rises to 25 units and total variable cost rises to $650, calculate the marginal cost. | 4 |
| 14 | When the number of workers rises from 1 to 4, total output is 10, 24, 36 and 44 units. (a) Calculate the marginal product of each additional worker. (b) State from which worker diminishing marginal returns begins and explain why. | 4 |
| 15 | A firm expands output from 1,000 to 2,000 units and long-run average cost falls from $40 to $28. (a) Calculate the percentage fall in average cost. (b) Give three sources of economies of scale that explain this. | 4 |
| 16 | A product sells for $50; average variable cost is $30 and total fixed cost is $4,000. (a) Calculate the contribution per unit and the break-even output. (b) Calculate the profit if 300 units are produced and sold. | 4 |

## Section E Market Structure and Firm Behaviour (16 marks)

**Explain the reasoning and the effect on the market in every answer.**

| # | Question | Marks |
|---|---|---|
| 17 | A perfectly competitive firm faces a market price of $50 and its marginal cost is MC = 10 + 2Q. (a) Calculate the profit-maximising output. (b) If average cost is $30 at 20 units, calculate profit. (c) What adjustment occurs in the long run? | 4 |
| 18 | A monopolist faces demand P = 100 - 2Q and a constant marginal cost of $20. (a) Using MR = 100 - 4Q, calculate the profit-maximising output and price. (b) Compare output and price with perfect competition (P = MC) and state the effect on efficiency. | 4 |
| 19 | An industry has total sales of $20 billion; the four largest firms have sales of $4 billion, $2.5 billion, $1.5 billion and $1 billion. (a) Calculate the four-firm concentration ratio (CR4). (b) State which market structure the industry tends towards and explain. | 4 |
| 20 | In a market six firms have shares of 30%, 25%, 15%, 10%, 10% and 10%. (a) Calculate the Herfindahl index (HHI). (b) If the two largest firms merge, what is the new HHI? Comment on the effect of the merger. | 4 |

## Section F National Income and Macroeconomic Indicators (16 marks)

**Amounts are in billion dollars; state rates as percentages.**

| # | Question | Marks |
|---|---|---|
| 21 | An economy has consumption $800 billion, investment $250 billion, government spending $200 billion, exports $450 billion and imports $500 billion. (a) Calculate GDP by the expenditure approach. (b) State net exports and what they imply. | 4 |
| 22 | Nominal GDP is $1,320 billion and the GDP deflator is 110. (a) Calculate real GDP. (b) If real GDP last year was $1,200 billion, calculate the real growth rate and explain the difference from nominal growth. | 4 |
| 23 | Real GDP is $1,200 billion and population is 7.5 million. (a) Calculate real GDP per capita. (b) If population rises to 8 million with real GDP unchanged, calculate the new value and the percentage change. (c) Give two reasons why GDP per capita is an imperfect measure of living standards. | 4 |
| 24 | The labour force is 3.8 million and employment is 3.61 million. (a) Calculate the number unemployed and the unemployment rate. (b) If 100,000 unemployed people give up job search and leave the labour force, calculate the new unemployment rate and explain the effect. | 4 |