S4 Economics Practice Paper | Price elasticity, market equilibrium, per-unit tax, price controls, costs of production, market structure and efficiency

S4 Economics | Time allowed: 75 minutes | Total: 100 marks | 24 questions

Part A Price elasticity of demand and total revenue

Question 1 (16 marks)

1. The price of a good falls from HKD 20 to HKD 16 and quantity demanded rises from 1,000 to 1,300 units. Using the percentage method, calculate the price elasticity of demand and state whether demand is elastic, unit elastic or inelastic. (4 marks)

2. Calculate total revenue before and after the price cut, and find the percentage change in total revenue. (4 marks)

3. The price of related good Y rises 10% and the quantity demanded of this good falls 8%. Find the cross price elasticity and state the relationship between the two goods. (4 marks)

4. A consumer income rises 25% and quantity demanded of a good rises 10%. Find the income elasticity and classify the good. (4 marks)

Part B Market equilibrium and a per-unit tax

Question 2 (16 marks)

5. In a market, quantity demanded is Qd = 1,400 - 50P and quantity supplied is Qs = 200 + 50P (Q in units, P in dollars). Find the equilibrium price and quantity. (4 marks)

6. If demand becomes Qd = 1,600 - 50P while supply is unchanged, find the new equilibrium price and quantity and explain the change in quantity. (4 marks)

7. The government imposes a per-unit tax of HKD 6 on sellers and demand returns to Qd = 1,400 - 50P. Find the price paid by consumers, the net price received by producers and the quantity traded. (4 marks)

8. Find the total tax revenue and the tax burden per unit borne by consumers and by producers. (4 marks)

Part C Price ceiling, price floor and quota

Question 3 (17 marks)

9. Using Qd = 1,400 - 50P and Qs = 200 + 50P, the government sets a price ceiling of HKD 10. Find quantity demanded, quantity supplied and the shortage. (4 marks)

10. If a price floor of HKD 16 is imposed instead, find the surplus and the government purchase cost. (4 marks)

11. If an import quota limits quantity to 600 units with local supply unchanged, find the price consumers are willing to pay, the lowest price local producers accept and the quota rent. (4

marks)

12. Compare the efficiency effects of a price ceiling, a price floor and a quota, and give one non-price rationing or administrative cost for each. (5 marks)

Part D Short-run costs and economies of scale

Question 4 (17 marks)

13. A firm has total cost TC = 500 + 20Q + 0.5Q^2 in dollars. Find total cost, average cost and marginal cost at Q = 20. (4 marks)

14. Find average cost at Q = 40, the percentage fall in average cost from Q = 20 to Q = 40, and state whether economies of scale exist. (4 marks)

15. Find the output at which average cost is minimised and that minimum average cost, to two decimal places. (4 marks)

16. A firm hires 0 to 5 workers with total product 0, 10, 26, 45, 58 and 66 units. Find the marginal product of the first to fifth worker, state when diminishing marginal returns begin and explain why. (5 marks)

Part E Monopoly pricing and market concentration

Question 5 (17 marks)

17. A monopolist faces demand P = 140 - 2Q with total cost TC = 200 + 20Q + 2Q^2. Find the profit-maximising output, price and profit. (4 marks)

18. Explain why demand is elastic at the profit-maximising output and why a monopolist never produces where demand is inelastic. (4 marks)

19. If the government regulates the price at marginal cost, find the price, output and resulting profit. (4 marks)

20. Five firms in an industry hold market shares of 40%, 25%, 15%, 10% and 10%. Compute the market concentration index as the sum of squared shares and compare pricing and efficiency with a perfectly competitive market. (5 marks)

Part F Consumer surplus and socially optimal output

Question 6 (17 marks)

21. Using Qd = 1,400 - 50P and Qs = 200 + 50P, find consumer surplus, producer surplus and total surplus at equilibrium. (4 marks)

22. After the HKD 6 per-unit tax, find the new consumer surplus, producer surplus and government tax revenue. (4 marks)

23. Find total surplus after the tax and the deadweight loss, and explain its source. (4 marks)

24. Each unit produced imposes HKD 2 of external cost, so marginal social cost equals marginal private cost plus 2. Find the socially optimal output, compare it with the market equilibrium and name a suitable policy tool. (5 marks)