

## 2.1 Demand, supply and policy

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Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

Total: 25 marks

**KEY WORDS** price elasticity of demand • indirect tax

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#### Objective

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Apply movements versus shifts, equilibrium and welfare read from a diagram, the PED/PES calculations with the total-revenue test, and the evaluation of government intervention (syllabus 2.1–2.7, SL).

### 1 Key knowledge and worked examples

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**Unit 2 toolkit.** Demand slopes downward by diminishing marginal utility; supply slopes upward. On the shared diagram the equilibrium is (20, 100); CS 2500 and PS 1000; allocative efficiency where  $P = MC$ . PED at 20 → 22 is  $-0.4$  with TR rising 2000 → 2112 (inelastic); PES at 20 → 24 is  $+0.8$ . A tax of 6 lifts the consumer price to 24 at quantity 92 (producers keep 18; revenue 552; incidence 4:2). A subsidy of 6 cuts price to 16 at 108. A maximum price of 16 leaves a shortage of 24; a minimum price of 24 a surplus of 24.

### 2 Practice

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**2.1** State the law of demand and its utility explanation. [2]

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**2.2** Name any four shift factors of the demand curve and any three of supply. [2]

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**2.3** At a price of 12 the diagram shows quantity demanded 116 and quantity supplied 68. State the size of the excess demand and explain how the market returns to equilibrium. [3]

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**2.4** Price rises from 20 to 22 and quantity demanded falls from 100 to 96. Calculate PED and use the total revenue test to classify demand. [4]

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**2.5** Price rises from 20 to 24 and quantity supplied rises from 100 to 116. Calculate PES and state one determinant that would make supply more elastic. [3]

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### 3 Exam-style questions

**3.1** (*Original, Paper 2 style.*) The government imposes a specific tax of 6. On the diagram the consumer price rises from 20 to 24, quantity falls from 100 to 92 and producers receive 18. Calculate the tax revenue, state how the burden is shared, and explain which elasticity decides the split. [5]

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**3.2** (*Original, Paper 1 style.*) The government instead sets a maximum price of 16, at which quantity demanded is 108 and quantity supplied 84. Using a diagram, evaluate the policy. [4]

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**3.3** (*Original, behaviour critique.*) Give two reasons real consumers may not maximise utility, naming the behavioural-economics evidence. [2]

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## Solutions

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**2.1** As price falls, quantity demanded rises (the law of demand) (1) – each extra unit gives less additional satisfaction (diminishing marginal utility), so only a lower price justifies buying more (1).

**2.2** Demand: income; substitutes' prices; complements' prices; tastes; expectations; number of consumers (any four). Supply: costs of production; technology; indirect taxes; subsidies; number of sellers (any three).

**2.3** Excess demand =  $116 - 68 = 48$  (1). Unsatisfied buyers bid the price up (1); as price rises quantity demanded falls and quantity supplied rises until they are equal at (20, 100) – the price signal, rationing and incentive functions in one movement (1).

**2.4**  $\% \Delta Q_d = -4\%$ ,  $\% \Delta P = +10\%$ , so  $PED = -0.4$  (2). TR at 20 = 2000; TR at 22 = 2112 (1): revenue ROSE when price rose, so demand is price INELASTIC over this range (1).

**2.5**  $\% \Delta Q_s = +16\%$ ,  $\% \Delta P = +20\%$ , so  $PES = +0.8$  (2). Any one: spare capacity, stocks that can be released, mobile factors, a longer time period (1).

**3.1** Revenue =  $6 \times 92 = 552$  (1). Consumers pay  $24 - 20 = 4$  more per unit (1); producers receive  $20 - 18 = 2$  less (1) – a 4:2 split. The relative price elasticities decide it (1): demand ( $PED -0.4$ ) is the less elastic side, so consumers bear the larger share (1).

**3.2** Diagram: ceiling below equilibrium,  $Q_d = 108$ ,  $Q_s = 84$ , shortage 24 (1). Benefit: lower price for those who obtain the good – equity (1). Costs: rationing by queues or favouritism, black markets at higher prices, falling supply over time, lost producer surplus and deadweight loss (1). Judgement: justified only for necessities with a plan for the shortage (subsidised supply or rationing); otherwise the intervention trades allocative efficiency for a smaller equity gain (1).

**3.3** Any two with evidence: bounded rationality (limited calculation leads to rules of thumb); herd behaviour (choices copy others – seen in demand surges); framing (presentation changes the choice); imperfect information (choices made on partial facts).

Local review guidance: percentage changes before dividing; the burden shares read as price differences from the diagram, not solved algebraically – that is HL; (R1 3.2) an evaluation needs a judgement, not a list. This is authored classroom guidance.