2.4 Government intervention in markets

Name: _____ Class: _____ Date: _____ **Total: 26 marks**

KEY WORDS maximum price • minimum price • indirect tax • subsidy • tax incidence • shortage

Objective

Build the skills to answer exam questions on **government intervention** : maximum and minimum prices, **indirect taxes** , **subsidies** , and their effects on stakeholders.

You must be able to:

- explain the reasons for government intervention in markets
- explain the effects of maximum and minimum prices on markets and stakeholders
- explain the effects of indirect taxes and subsidies, and how PED and PES decide who pays
- calculate the effects of price controls, taxes and subsidies from diagrams and linear functions

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1 Key knowledge and worked examples

Government intervention

Reasons to intervene: to raise revenue; to support firms (e.g. farmers) or low-income households; to change production or consumption (less tobacco, more renewable energy); to correct market failure; to promote equity.

tool	how it works	effects
maximum price (price ceiling, below equilibrium)	e.g. rent controls, food price caps	**shortage**; queues, black markets, lower quality; some buyers gain, sellers lose
minimum price (price floor, above equilibrium)	e.g. farm price support, minimum wage	**surplus**; government may buy and store the surplus (cost to taxpayers); in labour markets, possible unemployment
indirect tax (specific: $ per unit; *ad valorem*: a %) \lvert shifts supply **up/left** by the tax \rvert price rises, quantity falls; tax revenue for the government \lvert		
subsidy	a payment to firms per unit; shifts supply **down/right**	price falls, quantity rises; costs the government

Tax incidence: who pays the tax. When demand is **inelastic** (or supply elastic), **consumers** pay most of it; when demand is **elastic** (or supply inelastic), **producers** pay most.

Other tools: direct provision (state schools, roads); **command and control** regulation and legislation (bans, limits); consumer nudges.

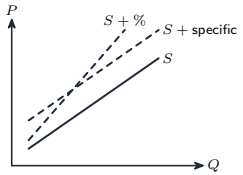
Stakeholders to cover: consumers, producers, workers, the government (revenue or spending), and society (welfare loss).

AHL – calculations: with a **specific tax** t, the supply function becomes $Q_s = c + d(P - t)$. Tax revenue $= t \times Q$. Consumer burden $= (P_c - P_e) \times Q$; producer burden $= (P_e - P_p) \times Q$. With a maximum price, shortage $= Q_d - Q_s$ at that price. Welfare loss is a triangle: $\frac{1}{2}\times$ base $\times$ height.

Answer shapes: diagram with the control or tax clearly marked → effects on price and quantity → effects on each stakeholder → evaluate (who gains, who loses, efficiency vs equity).

2 Practice

2.1 Distinguish between a specific tax and an *ad valorem* tax. [2]



2.2 State **two** reasons why a government might subsidize a product. [2]

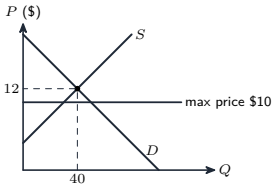


2.3 A city sets a maximum rent below the equilibrium rent. Using a diagram, explain **two** consequences. [4]



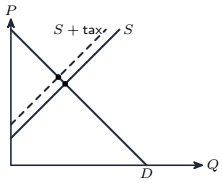
[[drawlines:4]]

2.4 In the market for a good, $Q_d = 100 - 5P$ and $Q_s = -20 + 5P$. The government sets a maximum price of \$10. Calculate the equilibrium price and quantity, and the shortage at the maximum price. [3]



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2.5 In the same market, the government instead puts a specific tax of \$2 per unit on producers. Calculate the new price paid by consumers, the price received by producers, and the tax revenue. [3]



3 Exam-style questions

3.1 A government introduces a minimum price for wheat above the equilibrium price to support farmers.

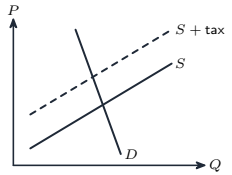
(a) Identify **one** group that gains and **one** that loses. [2]



(b) Using a diagram, explain the consequences of the minimum price for the market and for the government. [6]

[[drawlines:6]]

3.2 Demand for cigarettes is price inelastic. The government adds a specific tax.



Using a diagram, explain why consumers pay most of the tax. [4]

[[drawlines:4]]

Solutions

Marking: **M1** a correct method, **A1** the correct answer, **B1** an independent mark.

Each answer shows the steps, then the **result**.

2.1

specific tax: a fixed amount per unit, e.g. \$1 per litre; supply shifts up in parallel; ad valorem: a percentage of the price, e.g. 20% VAT; the gap grows at higher prices

2.2

any two: to lower prices for consumers, e.g. basic food; to support producers' incomes, e.g. farmers; to increase output of goods with positive externalities, e.g. solar energy, vaccines; to help a new industry compete

2.3

diagram with a maximum price below equilibrium and the shortage Q_s to Q_d shown; quantity demanded rises and quantity supplied falls, giving a shortage of flats; any two consequences: long waiting lists / queues; illegal "key money" or black markets; landlords spend less on repairs, so quality falls; some flats move to other uses, so supply falls further in the long run

2.4

$100 - 5P = -20 + 5P$, so $P = \$\mathbf{12}$, $Q = \mathbf{40}$; at \$10: $Q_d = 50$, $Q_s = 30$; shortage = **20** units

2.5

new supply: $Q_s = -20 + 5(P - 2) = -30 + 5P$; $100 - 5P = -30 + 5P$, so $P_c = \$\mathbf{13}$, $Q = 35$; producers receive $13 - 2 = \$\mathbf{11}$; tax revenue $= 2 \times 35 = \$\mathbf{70}$

3.1

(a) gains: wheat farmers (higher price and income); loses: consumers (pay more) / taxpayers

(b) diagram: minimum price above equilibrium, surplus between Q_d and Q_s; higher price lowers quantity demanded and raises quantity supplied; to keep the price up, the government must buy the surplus, at a cost of minimum price × surplus; storage costs, waste, or selling abroad cheaply (dumping), which hurts foreign farmers; resources are over-allocated to wheat: allocative inefficiency / welfare loss

3.2

diagram: steep (inelastic) demand, supply shifts up by the tax per unit, P_c and P_p marked; price rises by almost the full tax, quantity falls only a little; the consumer share $(P_c - P_e) \times Q$ is much larger than the producer share $(P_e - P_p) \times Q$; because buyers have few substitutes, firms can pass the tax on

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