



Edexcel A - AS Level Economics

Theme 1 – Introduction to Markets and Market Failure

1.4 Government Intervention

Worked Examples

Contents

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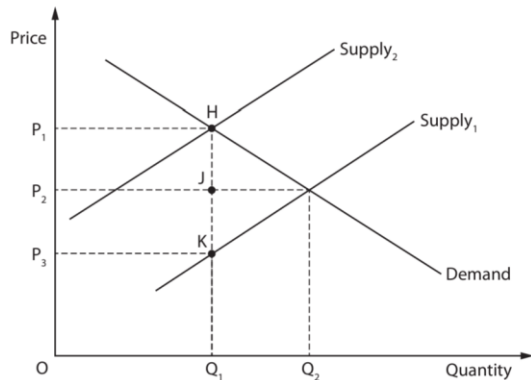
- [1.4.1 Government intervention in markets](#)
- [1.4.2 Government failure](#)

1.4.1 Government intervention in markets

Exam Style Question 1 – Indirect Tax

The UK Government uses a range of indirect taxes to affect the market prices and quantities of many goods and services.

- (a) In the diagram below, the government imposes a specific tax on a product. This shifts the supply curve from $Supply_1$ to $Supply_2$.



The government's tax revenue is shown by the area:

- A OP_1HQ_1
- B P_2P_1HJ
- C P_3P_1HK
- D P_3P_2JK

- (b) Using an example, explain why the government imposes **specific** taxes on many goods and services. [3]



1.4.1 Government intervention in markets

Exam Style Question 1

Answer:

(a) C [1]

- **Option A:** Incorrect because OP_1HQ_1 is the total cost of the product plus tax revenue producers' share of the tax.
- **Option B:** Incorrect, because P_2P_1HJ is the consumers' share of the tax.
- **Option C:** Incorrect, because P_3P_2JK is the producers' share of the tax.

(b) Why does the government use specific taxes?

Definition: Specific tax is a fixed tax amount per unit of the product sold. [1]

Application:

Specific taxes are a way for governments to make people think twice before buying harmful stuff, like cigarettes or alcohol. These taxes, often called "**sin taxes**," raise the price of harmful goods, reducing how much people buy. For instance, if cigarettes are taxed more heavily, fewer people might smoke, leading to better public health and lower NHS costs. [1]

Analysis:

Specific taxes also bring in money for the government, which can be spent on services like healthcare or education. [1]

1.4.1 Government intervention in markets

Exam Style Question 2 – Indirect Tax

In 2016 the average energy bill per household was £1070 per year, excluding VAT, an indirect tax charged at 5%.

(Source: adapted from ©Crown Copyright <https://www.ofgem.gov.uk/publications-and-updates/infographic-bills-prices-and-profits>)

(a) The amount of VAT paid per year from energy bills by an average household in 2016 was:

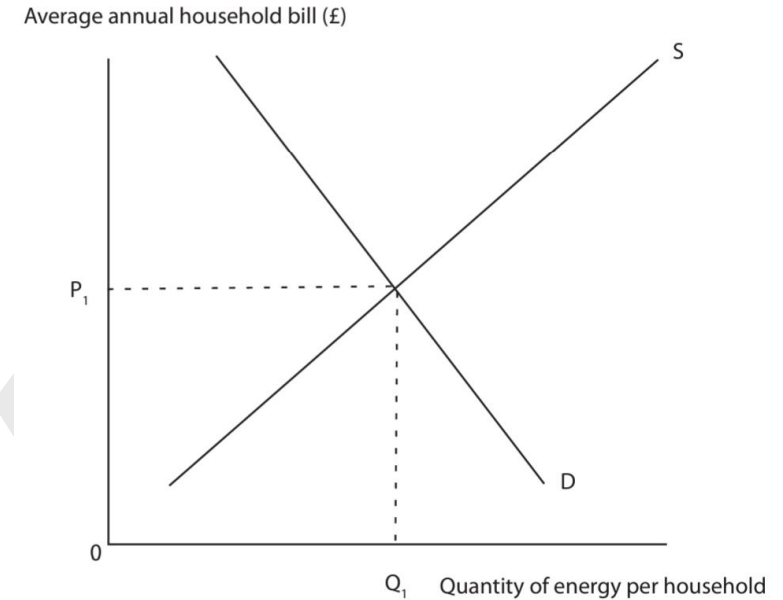
[1]

- A £53.50
- B £214.00
- C £1019.00
- D £1123.50

1.4.1 Government intervention in markets

Exam Style Question 2

(b) On the diagram below annotate the effect of a rise in VAT on the market for household energy use. [2]



(c) Define the term 'indirect tax'. [1]



1.4.1 Government intervention in markets

Exam Style Question 2 – Indirect Tax

In 2016 the average energy bill per household was £1070 per year, excluding VAT, an indirect tax charged at 5%.

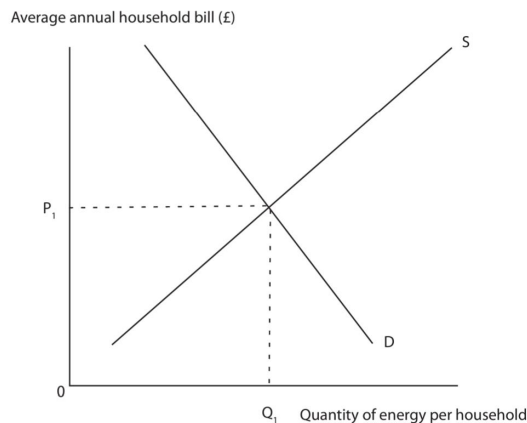
(Source: adapted from ©Crown Copyright <https://www.ofgem.gov.uk/publications-and-updates/infographic-bills-prices-and-profits>)

(a) The amount of VAT paid per year from energy bills by an average household in 2016 was:

[1]

- A £53.50
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1.4.1 Government intervention in markets

Exam Style Question 2

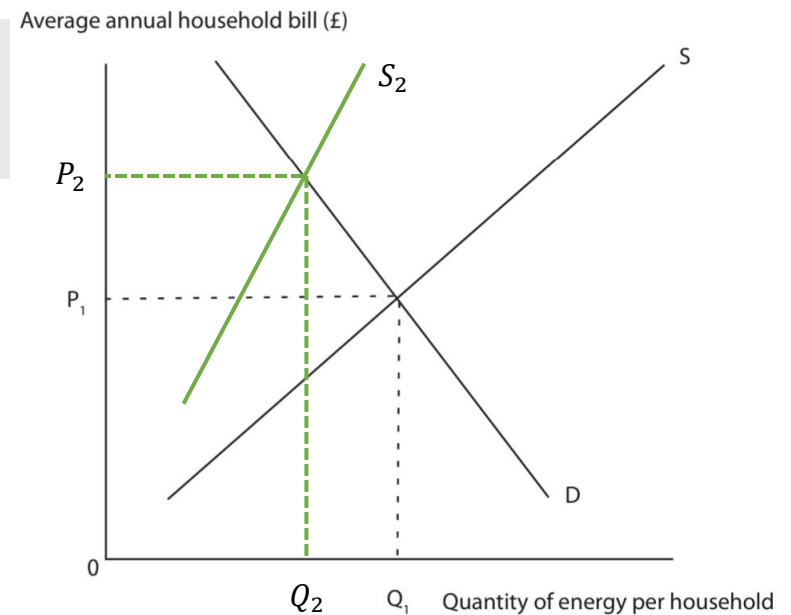
Answer:

(a) A [1]

The VAT paid per year can be calculated as 5% of the annual energy bill, which is £1,070.

$$VAT \text{ paid} = \frac{5}{100} \times 1070 = 53.50$$

(b) On the diagram below annotate the effect of a rise in VAT [2]:



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1.4.1 Government intervention in markets

Exam Style Question 2 – Indirect Tax

In 2016 the average energy bill per household was £1070 per year, excluding VAT, an indirect tax charged at 5%.

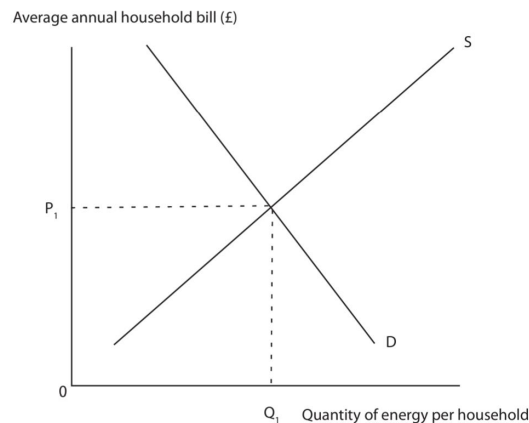
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(a) The amount of VAT paid per year from energy bills by an average household in 2016 was:

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- A £53.50
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(b) On the diagram below annotate the effect of a rise in VAT on the market for household energy use. [2]



(c) Define the term 'indirect tax'. [1]

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1.4.1 Government intervention in markets

Exam Style Question 2

Answer:

(c) Define the term 'indirect tax'.

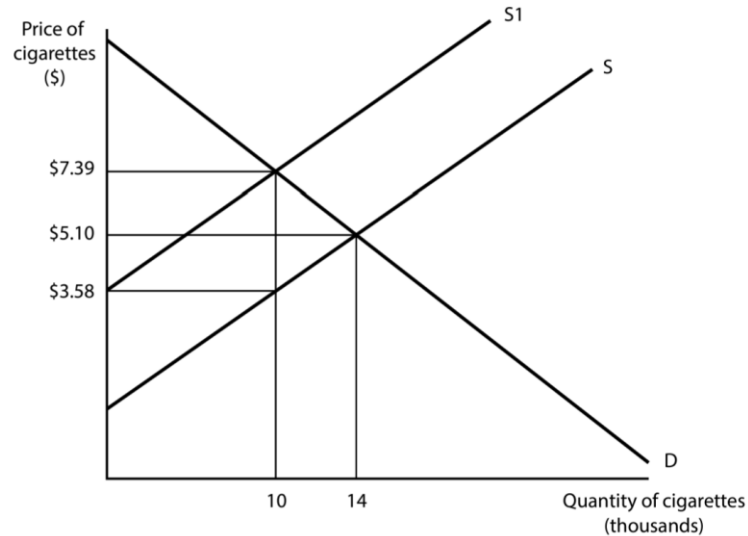
An **indirect tax** is a tax on goods or services imposed on producer by the government but often passed on to consumers through higher prices. [1]



1.4.1 Government intervention in markets

Exam Style Question 3 – Indirect Tax

Hawaii has a tax on packets of cigarettes. The diagram below shows the effect of this tax.



(a) The tax imposed on a packet of cigarettes in the diagram above is an example of:

[1]

- A An income tax
- B A subsidy
- C A specific tax
- D An ad valorem tax



1.4.1 Government intervention in markets

Exam Style Question 3

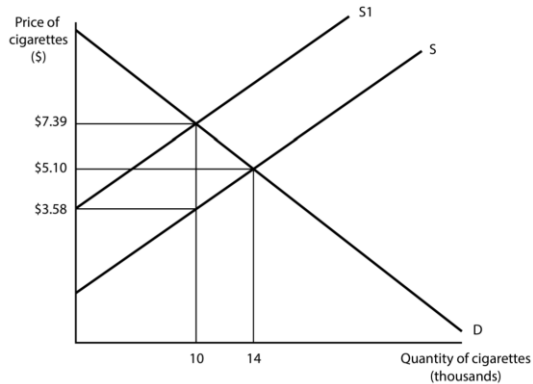
(b) Calculate the total incidence of the tax on consumers. You are advised to show your working. [2]

(c) Calculate the total tax revenue. You are advised to show your working. [2]

1.4.1 Government intervention in markets

Exam Style Question 3 – Indirect Tax

Hawaii has a tax on packets of cigarettes. The diagram below shows the effect of this tax.



(a) The tax imposed on a packet of cigarettes in the diagram above is an example of:

- A An income tax
- B A subsidy
- C A specific tax
- D An ad valorem tax

[1]

(b) Calculate the total incidence of the tax on consumers. You are advised to show your working. [2]

(c) Calculate the total tax revenue. You are advised to show your working. [2]

1.4.1 Government intervention in markets

Exam Style Question 3

Answer:

(a) C [1]

(b) Calculate the tax incidence on consumers

- The tax paid by consumers is the difference in price they now pay, which is the gap between **\$7.39** (new price) and **\$5.10** (old price).
- So, **tax per packet paid by consumers = \$7.39 – \$5.10 = \$2.29**. [1]
- Quantity sold after tax is **10,000 packets** (from the graph).

Total consumer tax incidence = \$2.29 × 10,000 = \$22,900 [1]

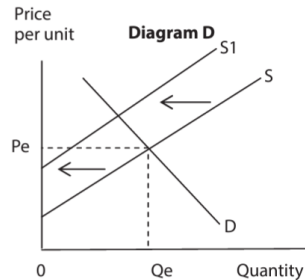
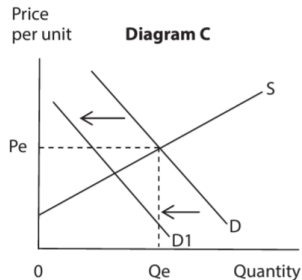
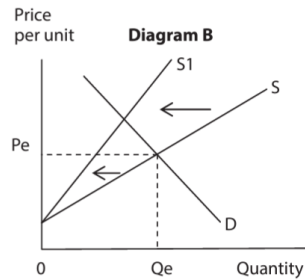
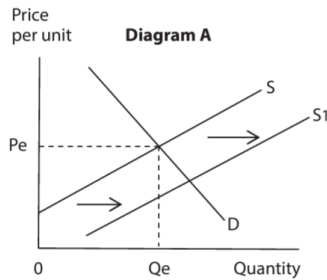
(c) Calculate the total tax revenue

- The total tax revenue comes from **the entire tax amount per packet (\$7.39 – \$3.58 = \$3.81)** multiplied by the **quantity sold (10,000 packets)**. [1]

Total tax revenue = \$3.81 × 10,000 = \$38,100 [1]

1.4.1 Government intervention in markets

Exam Style Question 4 – Indirect Tax



In September 2012, the Spanish Government increased the sales tax (VAT) on goods such as clothing to 21%. Which of the diagrams, labelled A, B, C and D, best illustrates the effects of the increase in sales tax? (You may annotate the relevant diagram in your answer.)

[1]

Answer

Explanation [3]



1.4.1 Government intervention in markets

Exam Style Question 4

Answer:

B [1]

Explanation:

When the Spanish Government increased the VAT to 21%, it acted like a tax on producers. This is an indirect tax (ad valorem tax) imposed by the government. [1]

This pushed the supply curve to the left and is non-parallel (from **S** to **S1**) because it increased the cost of providing goods. The price consumers pay went up (to a new higher equilibrium price), while the quantity of goods sold decreased. [2]

Rejection marks:

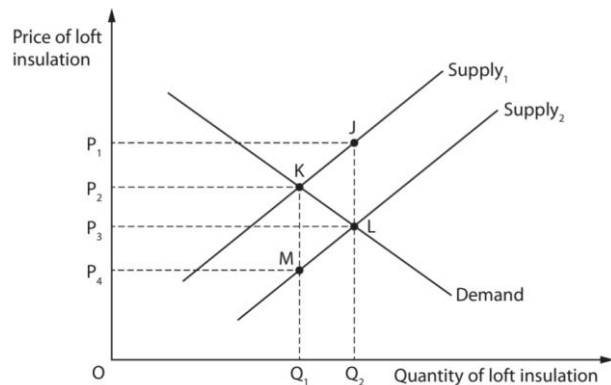
- **Option A:** Incorrect since an outward shift of the supply curve would be the result of a subsidy. [1]
- **Option C:** Incorrect because a tax imposed on a good adds to the supply price, so shifting the supply curve rather than the demand curve. [1]
- **Option D:** Incorrect since this is the effect of a specific tax which causes a parallel shift in the supply curve. [1]

1.4.1 Government intervention in markets

Exam Style Question 5 – Subsidies

The 'Energy Company Obligation' is the government's term for its programme to make houses in the UK more energy efficient.

In the diagram below, the government grants a subsidy to energy suppliers to install loft insulation. This shifts the market supply curve for loft insulation from $Supply_1$ to $Supply_2$.



The total amount spent by the government on subsidies is represented by the area:

[1]

- A OP_1JQ_2
- B OP_3LQ_2
- C P_3P_1JL
- D P_4P_2KM



1.4.1 Government intervention in markets

Exam Style Question 5

Answer:

C [1]

Other options:

- **Option A:** Incorrect since the supply curve shift has been ignored.
- **Option B:** Incorrect because this is the cost to the consumer.
- **Option D:** Incorrect since this is the total amount received by the producer.

1.4.1 Government intervention in markets

Exam Style Question 6 – Subsidies

In 2015 the UK government cut subsidies for the installation of solar energy panels.

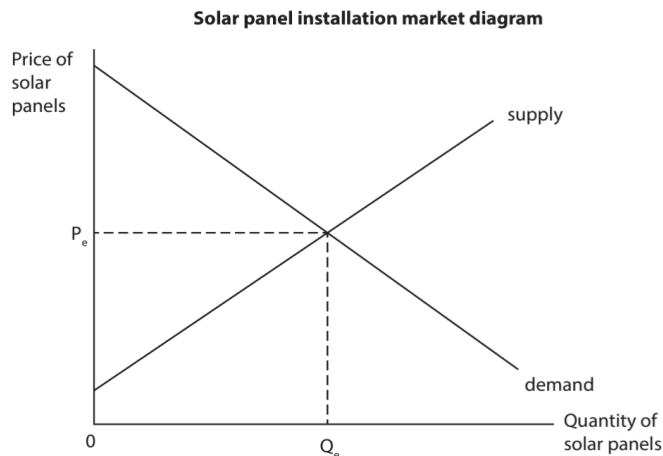
(a) Define the term 'subsidies'. [1]

(b) The most likely effect of cutting subsidies for the installation of solar panels is to:

[1]

- A Increase producer surplus
- B Decrease the provision of public goods
- C Decrease consumer surplus
- D Increase government expenditure

(c) Annotate the diagram below to show the effect of removing the solar panel installation subsidy on the equilibrium price and quantity. [2]



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1.4.1 Government intervention in markets

Exam Style Question 6

Answer:

(a) Define the term 'subsidies'.

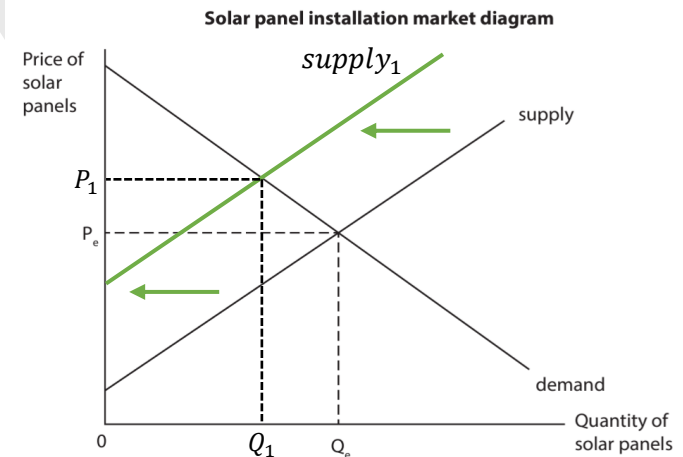
Subsidies are government grants to help reduce costs for producers or consumers, making goods or services cheaper and encouraging their production or use. [1]

(b) The most likely effect of cutting subsidies for the installation of solar panels is:

Answer: C [1]

Explanation: Without subsidies solar panels become more expensive, meaning fewer people can afford them (lower consumer surplus).

(c) Annotate the diagram to show the effect of removing the subsidy.



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1.4.1 Government intervention in markets

Exam Style Question 7 – Subsidies

In 2011 the UK Government introduced a unit subsidy of £5000 for new electric powered cars such as the Nissan Leaf and Mitsubishi-MiEV. The most likely effect is to increase.

[1]

- A The demand for petrol powered cars.
- B Carbon emissions from non-electric powered cars.
- C The demand for bus transport.
- D The supply of electric powered cars.

Answer

Explanation [3]



1.4.1 Government intervention in markets

Exam Style Question 7

Answer:

D [1]

Explanation:

Definition: Subsidies are government grants to help to increase production of a good or service. [1]

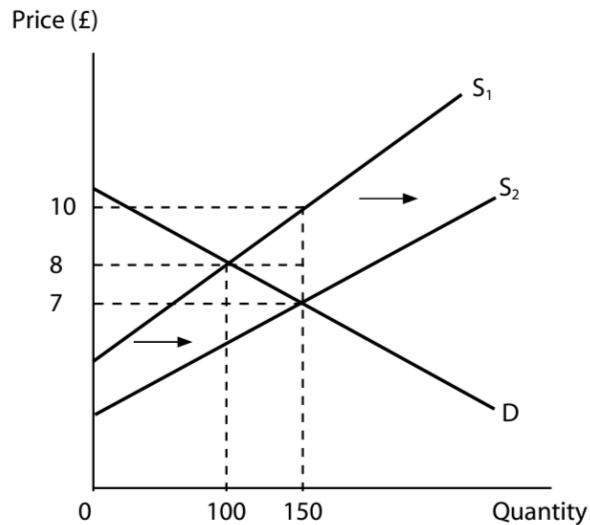
The government gave a £5000 subsidy for electric cars, reducing costs of production and make them cheaper to purchase. [1] With lower costs, car manufacturers had more incentive to make electric cars, increasing their supply. This shift was aimed at encouraging greener travel and cutting down on carbon emissions from petrol-powered vehicles. [1]

Rejection marks:

- **Option A or C:** Incorrect as petrol powered cars or bus travel are substitutes. [1]
- **Option B:** Incorrect since demand for electric cars will rise due to the subsidy causing a fall in price. [1]

1.4.1 Government intervention in markets

Exam Style Question 8 – Subsidies



The diagram illustrates the effect of a government subsidy on a good. The total government expenditure on the subsidy will be:

- A £100
- B £150
- C £450
- D £1,050

[1]

Answer

Explanation [3]



1.4.1 Government intervention in markets

Exam Style Question 8

Answer:

C [1]

Explanation:

Definition: Subsidies are government grants to help reduce costs for producers or consumers, making goods or services cheaper and encouraging their production or use. [1]

The subsidy reduces the price from £10 to £7 (a £3 subsidy per unit). The quantity of goods supplied increases from 100 to 150 units. To find the total government expenditure:

- Multiply the subsidy per unit (£3) by the total number of subsidised units (150).
- $£3 \times 150 = £450$. [2]

1.4.1 Government intervention in markets

Exam Style Question 9

In 2010 the Scottish Government proposed a legal minimum price per unit of alcoholic drink. Other things being equal, a minimum price set above the market equilibrium price is likely to cause

[1]

- A: an excess supply
- B: a fall in price
- C: an increase in consumption
- D: no effect in the market

Answer

Explanation [3]

1.4.1 Government intervention in markets

Exam Style Question 9

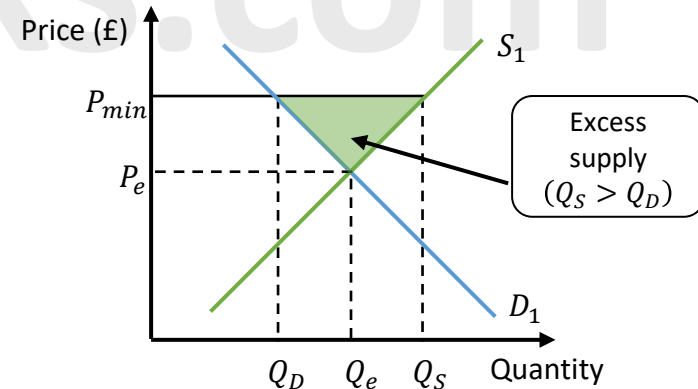
Answer:

A [1]

Explanation:

Definition: Minimum price is the lowest price a good is allowed to be sold for and is set by the government. [1]

If the government sets a minimum price above the market equilibrium, sellers are happy to produce and sell more because they get a higher price. But consumers aren't as keen to buy at this higher price, so demand drops. Therefore, the supply exceeds the demand, and we get **excess supply**. [2]



Or diagram showing the minimum price and excess supply [2]



1.4.1 Government intervention in markets

Exam Style Question 10

Which of the following methods of government intervention could help correct market failure?

[1]

- A:** State provision of healthcare
- B:** Taxation of goods which yield high external benefits
- C:** Abolition of the tradable pollution permit scheme
- D:** Provision of subsidies to goods which yield high external costs.

Answer

Explanation [3]

1.4.1 Government intervention in markets

Exam Style Question 10

Answer:

A [1]

Explanation:

Definition: Market failure occurs when the price mechanism causes an inefficient allocation of resources; the forces of demand and supply lead to a net welfare loss in society. [1]

Application: Market failure happens when the free market doesn't provide enough of something beneficial (like healthcare) or provides too much of something harmful (like pollution). For example, external benefits like the positive effects of healthcare may be ignored by the market, causing under-provision and issues like increased illness or reduced productivity. [1]

Government intervention, such as taxing incomes to fund free healthcare, addresses these failures and ensures resources are allocated more efficiently to improve societal welfare. [1]

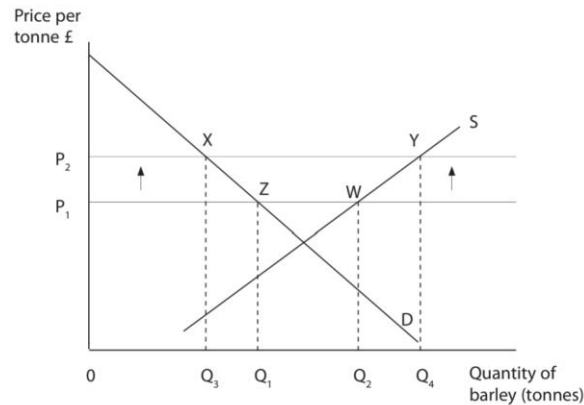
Rejection marks:

- **Option B:** Incorrect since the government should subsidise a good which yields external benefits as there is under-consumption. [1]
- **Option C:** Incorrect since abolition of tradable permits will increase pollution. [1]
- **Option D:** Incorrect since the government should tax goods which yield high external costs as there is over-consumption. [1]



1.4.1 Government intervention in markets

Exam Style Question 11



The diagram shows the European Union (EU) barley market, where a minimum price scheme operates. The EU guarantees to purchase any surplus output at the minimum price. Initially the minimum price is at OP_1 and the EU purchases Q_1Q_2 of barley. If the minimum price is increased to OP_2 which of the following is correct

[1]

- A: Producer surplus decreases
- B: Excess demand for barley increases
- C: EU spending on the minimum price scheme for barley increases
- D: Output of barley decreases.

Answer

Explanation [3]



1.4.1 Government intervention in markets

Exam Style Question 11

Answer:

C [1]

Explanation:

Definition: Minimum price is the lowest price a good is allowed to be sold for and is set by the government. [1]

Application: The EU has set a minimum price for barley (P_1), meaning farmers are guaranteed a price above the normal market equilibrium. At this price government spending on barley is Q_1Q_2WZ . [1]

When this minimum price increases to P_2 , farmers produce even more barley (Q_4), but consumers demand less (Q_3). This creates a bigger surplus. The EU promises to buy this surplus, so they're now purchasing Q_3 to Q_4 of barley. Therefore, new government spending on barley is Q_3Q_4YX . [1]

1.4.1 Government intervention in markets

Exam Style Question 12 – Tradable pollution

The EU tradable pollution permits scheme is expected to become more effective by 2020, due to recent reductions in the number of tradable pollution permits.

(Source adapted from: https://ec.europa.eu/clima/policies/ets_en)

- (a) Explain **one** likely effect of reducing the number of tradable pollution permits. [4]
- (b) Regulation of firms that pollute is likely to be a problem because it
- [1]
- A Allows firms to use price signals
 - B Creates unintended consequences
 - C Fills information gaps for businesses
 - D Means lower administrative costs

1.4.1 Government intervention in markets

Exam Style Question 12

Answer:

(a) Explain one likely effect of reducing the number of tradable pollution permits:

If the EU reduces the number of pollution permits, there are fewer permits for firms to buy, so the price of each permit will increase. [1]
This makes it much more expensive for businesses to pollute. [1]
This encourages firms to cut down on emissions by switching to cleaner, greener alternatives instead of paying for expensive permits. [1]
This can lead to a big environmental win, as overall pollution levels are likely to fall. However, it might increase costs for businesses, which could lead to higher prices for consumers. [1]

(b) Regulation of firms that pollute is likely to be a problem because it:

Answer: B – creates unintended consequences [1]

Why B? Regulations can sometimes backfire. For example, firms might look for loopholes or shift operations to countries with looser rules (a practice called "regulatory arbitrage"). This could reduce the intended environmental benefits of the policy while adding complications.

Option A: incorrect because regulation may cause the distortion of price signals as a problem.

Option C: incorrect because regulation may result in the problem of information gaps.

Option D: incorrect as regulation may result in the problem of excessive administrative costs.

1.4.1 Government intervention in markets

Exam Style Question 13 – Tradable Pollution

Tradable pollution permits would be more effective in reducing carbon dioxide emissions within the European Union (EU) if:

[1]

- A: There is an excess supply of pollution permits
- B: Major polluting industries such as air travel are excluded from the carbon trading system
- C: It is difficult to monitor and prosecute firms for exceeding their pollution permits
- D: The EU is prepared to decrease the supply of pollution permits if the price falls too low.

Answer

Explanation [3]

1.4.1 Government intervention in markets

Exam Style Question 13

Answer:

D [1]

Definition: Tradable pollution permits are given out by the government to firms as an allowance on the amount of pollution the firm may emit. These permits can be bought and sold in the market. [1]

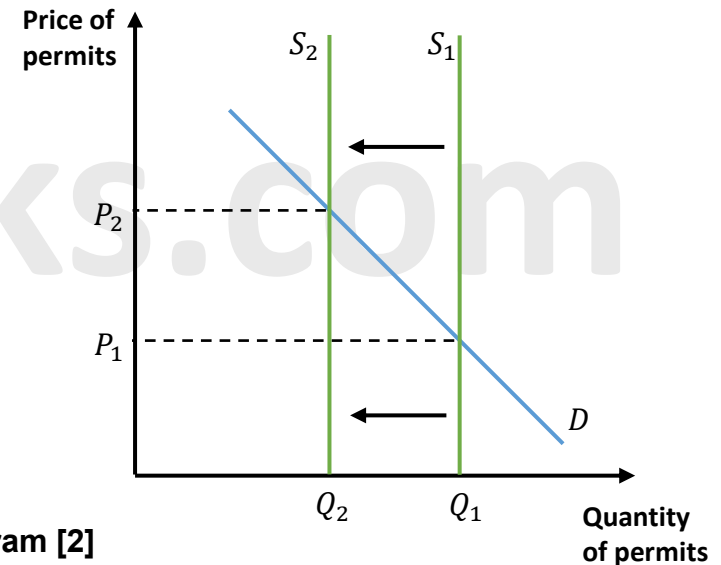


Diagram [2]

By reducing the number of permits (like the EU plans to do), prices stay higher, and firms are pushed to innovate and cut pollution to avoid costly permits. [1]



1.4.1 Government intervention in markets

Exam Style Question 14 – Tradable Pollution

The European Union Carbon Emissions Trading Scheme permitted the power, cement, steel, oil and paper industries to emit up to 1.9 billion tonnes of carbon dioxide in 2008. The purpose of the scheme is to:

[1]

- A: fine companies which pollute up to their allowances
- B: reduce market failure from the major carbon polluting industries
- C: tax companies which pollute up to their allowances
- D: prevent industries from buying and selling carbon permits between themselves

Answer

Explanation [3]

1.4.1 Government intervention in markets

Exam Style Question 14

Answer:

B [1]

Definition: Market failure occurs when resources are not allocated efficiently, leading to a loss in society's welfare. [1]

Explanation: One key reason for this failure is external costs, like pollution, which harm society but aren't accounted for in market prices. [1]

Application: The EU Carbon Emissions Trading Scheme tackles this by limiting the total carbon emissions from industries. It does this through tradable permits, which set a cap on pollution. By restricting pollution, the scheme helps reduce the negative impact (external costs) of these industries, improving welfare overall. [1]



1.4.2 Government failure

Exam Style Question 1

HS2 is a high-speed rail network linking the north and south England. HS2 will be four years late and cost double the Department for Transport's original estimate.

(Source: <https://www.transportxtra.com/publications/local-transport-today/news/58459/hs2-will-be-four-years-late-and-cost-double-the-dft-s-estimate-mps-told>)

Define the term 'government failure'. [1]

1.4.2 Government failure

Exam Style Question 1

Answer:

Definition: Government failure occurs when government intervention in the economy causes a net welfare loss in economic welfare. [1]

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1.4.2 Government failure

Exam Style Question 2

In 2007, a packet of cigarettes priced at £5.30 included £4.13 of tax. The high level of tax on cigarettes may lead to **government failure** if:

[1]

- A:** some people continue to purchase cigarettes
- B:** the tax revenue generated from cigarettes meets the cost of treating smokers on the National Health Service
- C:** cigarette smuggling is encouraged
- D:** the marginal social cost exceeds the marginal private cost from cigarette smoking

Answer

Explanation [3]



1.4.2 Government failure

Exam Style Question 2

Answer:

C – Cigarette smuggling is encouraged [1]

Definition: Government failure occurs when government intervention in the economy causes a net welfare loss in economic welfare. [1]

Explanation: When taxes on cigarettes are super high, like in this case (£4.13 of tax on a £5.30 packet), it can lead to unintended consequences, also known as government failure. Instead of discouraging smoking, some people might turn to illegal means, like smuggling, to avoid the hefty taxes. [1]

This undermines the government's goal of reducing smoking and may create a black market, costing the government tax revenue and causing other issues. [1]

Please see the '1.4 Government Intervention
Revision Notes' pack for detailed notes.

For more revision notes, tutorials, worked
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