Edexcel A - AS Level Economics

Theme 1 – Introduction to Markets and Market Failure

1.3 Market Failure

Worked Examples

Contents

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1.3 Market Failure

Exam Style Question 1

Which **one** of the following statements about public goods is true?

[1]

A: They are only provided by the price mechanism.

B: They involve no opportunity cost in their provision.

C: Their production uses no scarce resources.

D: They are characterised by the free rider problem.

Answer ☐

Explanation [3]

1.3 Market Failure

Exam Style Question 1

Answer:
D [1]

Definition: Public goods, like streetlights, are non-excludable (you can't stop people from benefitting) and non-rivalrous (one person's use doesn't reduce availability for others). **[1]**

Explanation: This creates the free rider problem, once a public good is provided, it is difficult to make people pay for the consumption of it. As a result, private companies avoid providing public goods, leaving it to the government to step in. **[2]**

Rejection marks:

- **Option A:** Incorrect because public goods aren't provided by the price mechanism. Since the price mechanism tends to under-provide or not provide since there is no way charging people for consumption of it. **[1]**
- **Option B:** Incorrect, there are opportunity costs; resources used could go elsewhere.
- **Option C:** Incorrect, public goods still require scarce resources to produce. **[1 mark for B and C]**

1.3 Market Failure

Exam Style Question 2

Market failure may arise in an economy when

[1]

A: train fares rise in response to an excess demand for rail travel

B: government taxes on petrol reduce the number of motor vehicle journeys

C: external benefits from bus travel are ignored by the price mechanism

D: loss making taxi firms exit the market

Answer ☐

Explanation [3]

You may use a supply and demand diagram in your answer.

1.3 Market Failure

Exam Style Question 2

Answer:
C [1]

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]**

Definition: External benefits are benefits which the price mechanism fails to take into account. **[1]**

Application: C is correct because when external benefits (like reduced pollution or less traffic due to bus travel) are ignored, the market undervalues buses, causing under-provision. This is a classic **positive externality** problem. If we accounted for these benefits, society would enjoy more bus travel. **[1+1]**

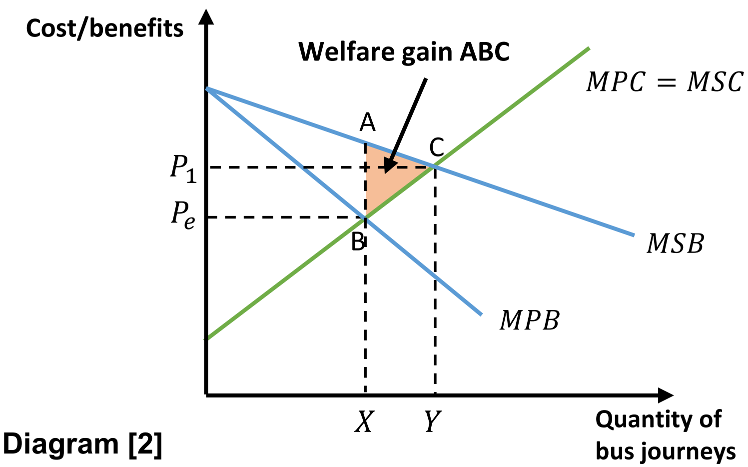


Diagram [2]

1.3 Market Failure

Exam Style Question 3

In 2010 the UK Government expressed concerns that many workers had **not** made adequate pension contributions to fund their retirement. A possible explanation for this under funding of pension is:

[1]

A: pensions are a public good.

B: there is no opportunity cost to making pension contributions.

C: workers have imperfect information.

D: tax incentives for making pension contributions have increased.

Answer ☐

Explanation [3]

1.3 Market Failure

Exam Style Question 3

Answer:
C [1]

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]**

Understanding: Pension – contributions that workers make from their income which they can use on retirement. **[1]**

Explanation and Application: The underfunding of pensions can be explained by **imperfect information**. Workers often don't fully understand how much they need to save for their retirement or underestimate how long they'll need those savings to last. **[2]**

Rejection marks
- **Option A: is wrong** because pensions are not public goods—they're rivalrous and excludable. **[1]**
- **Option B: is wrong** because there is an opportunity cost to making pension contributions (you're giving up spending that money now). **[1]**
- **Option D: is wrong** because increased tax incentives should encourage contributions, not explain underfunding. **[1]**

Exam Style Question 4

Dentists working in a market economy may undertake non-essential dental work on patients. A likely explanation for this is:

[1]

A: dental care is a public good

B: the existence of asymmetric information

C: significant external benefits result from dental care

D: there is a shortage of dentists

Answer ☐

Explanation [3]

1.3 Market Failure

Exam Style Question 4

Answer:
B [1]

Explanation and Application: Dentists might carry out non-essential dental work because of **asymmetric information**, where they know way more about dental procedures than their patients do. **[1]**

If a dentist suggests a "necessary" whitening treatment, how would you know if it's truly needed or just nice-to-have? **[1]**

Patients rely on the dentist's expertise, which creates a knowledge gap. This can sometimes lead to unnecessary treatments being performed as dentists act in self-interest in order to gain more revenue. **[1]**

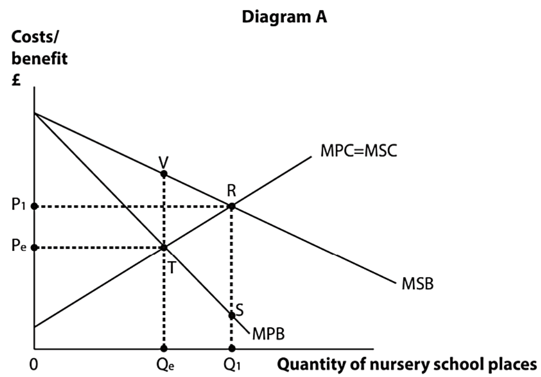
Rejection marks:
- **A is wrong** because dental care isn't a public good; it's excludable and rivalrous.
- **C is wrong** because external benefits, like better public health, don't explain non-essential treatments.
- **D is wrong** because a shortage of dentists wouldn't increase non-essential treatments—it would do the opposite.

1.3.2 Externalities

Exam Style Question 1

1 (a) Define the term ‘external benefits’. **[1]**

Diagram A shows the market for nursery school places.



(b) Which **one** of the following measures could a government introduce to achieve the social optimum consumption of nursery school places?

It could introduce a:

[1]

- ◯ **A** Maximum price of 0P1 per unit
- ◯ **B** Subsidy of RS per unit
- ◯ **C** Tax of VT per unit
- ◯ **D** Minimum price of 0P1 per unit

(c) Annotate on Diagram A the welfare gain area and the new social optimum output resulting from successful government intervention in the market for nursery places. **[2]**

1.3.2 Externalities

Exam Style Question 1

Answer:

(a) Define the term 'external benefits':

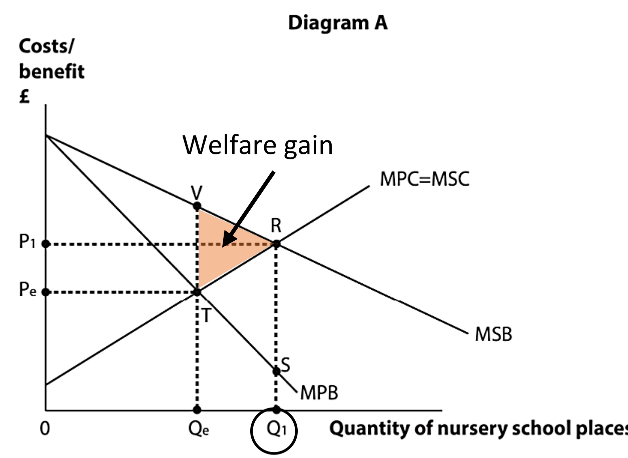
External benefits are the positive effects enjoyed by third parties who are not directly involved in the production or consumption of a good or service. **[1]**

(b) Which one of the following measures could a government introduce to achieve the social optimum consumption of nursery school places?

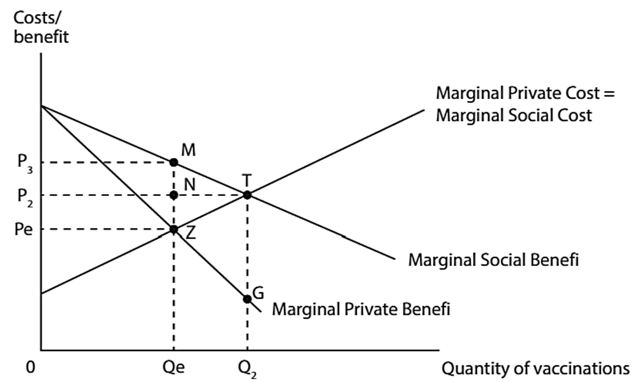
The correct answer is **B - Subsidy of RS per unit**. **[1]**

Why? A subsidy lowers the cost for providers and encourages more consumption of nursery places, shifting the market closer to the socially optimal level.

(c) Annotate on Diagram A the welfare gain area and the new social optimum output:



Exam Style Question 2



The diagram shows the market for vaccinations. Assume there are no external costs. Which one of the following is true?

[1]

A: The free-market equilibrium quantity exceeds the social optimum quantity

B: At the free-market equilibrium quantity, marginal social cost exceeds marginal social benefits

C: An increase in quantity from the free-market equilibrium will lead to a net welfare gain

D: At the free-market equilibrium price there is an excess supply of vaccinations.

Answer

Explanation [3]

1.3.2 Externalities

Exam Style Question 2

Answer:
C [1]

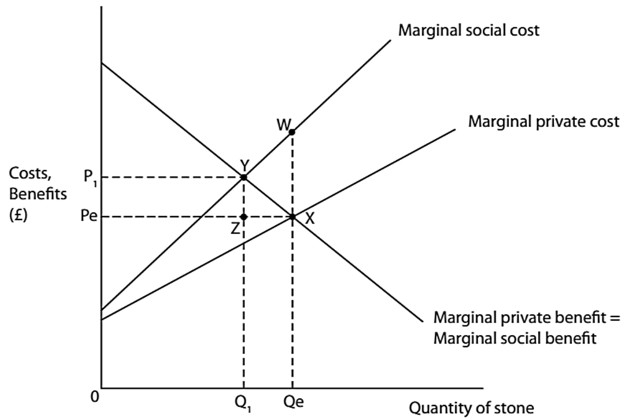
Definition: Welfare gain the excess of social benefit over social cost for a given quantity. **[1]**

Definition: External benefits are the positive effects enjoyed by third parties who are not directly involved in the production or consumption of a good or service. **[1]**

Application and Identification: If more vaccinations are provided, moving towards the **social optimum quantity (Q2)**, society as a whole benefits. The extra quantity creates a **welfare gain (MTZ)** because the additional benefits to society outweigh the costs of producing the vaccines. **[2]**

Rejection marks:
- **A is wrong** because the free market equilibrium (Qe) is **less** than the social optimum (Q2), not more. The market is underproducing due to the positive externality. **[1]**
- **B is wrong** since marginal social cost is Z (or Pe) which is less than marginal social benefit of M (or P_3). **[1]**
- **D is wrong** because at the free market equilibrium, supply equals demand, so there's no excess supply. The issue is under-consumption, not oversupply. **[1]**

Exam Style Question 3



The diagram shows the market for the extraction of stone from a quarry. Assume there are no external benefits. Which of the following is true?

[1]

A: The social optimum quantity exceeds the free-market equilibrium quantity

B: The area of welfare loss at the free-market equilibrium is XYZ

C: A decrease in the quantity from Qe towards Q1 will reduce the net welfare loss

D: At the free-market equilibrium quantity, marginal social benefit exceeds marginal social cost.

Answer

Explanation [3]

1.3.2 Externalities

Exam Style Question 3

Answer:
C [1]

Definition: Welfare loss the excess of social cost over social benefit for a given output. **[1]**

Definition: External costs are negative third-party effects or costs outside a market transaction that the price mechanism ignores, like the difference between social and private costs or negative spillover effects. **[1]**

Application and Identification: The diagram shows that stone extraction at Qe exceeds the socially optimal level, Q1, because producers ignore external costs like air pollution from the dust and damage to wildlife. Cutting production to Q1, where MSC equals MSB, eliminates waste and avoids unnecessary societal harm. **[2]**

Rejection marks:

- **A is wrong** since the social optimum equilibrium quantity Q1 is less than the free-market equilibrium quantity Qe. **[1]**
- **B is wrong** since welfare loss is area XWY. **[1]**
- **D is wrong** since at the free-market equilibrium marginal social benefit (X) is less than marginal social costs (Q). **[1]**

Please see the '1.3 Market Failure Revision Notes' pack for detailed notes.

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