1.24 Externalities: Negative and Positive Production and Consumption Effects: 10-minute Pack

Total Marks

AQA 7136 · Calculators not allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer all questions in full sentences where appropriate. Show working for any calculations. Allow about 10 minutes for the whole pack. At least three questions require full sentence answers (look for 'Explain' or 'Assess' command words).

1 Calculate the marginal social cost (MSC) per unit if a small brewery's marginal private cost (MPC) per unit brewed is £8 and the estimated marginal external cost to nearby residents is £2. Then calculate the Pigovian tax per unit that would internalise the externality and state its value.

(Total for Question 1 is 4 marks)

2 State the difference between marginal private cost (MPC) and marginal social cost (MSC) in the context of a firm producing bricks that generate dust pollution for nearby households.

(Total for Question 2 is 2 marks)

3 Define marginal private benefit (MPB) and marginal social benefit (MSB) for the case of a person receiving a seasonal influenza vaccine, and state which is larger when positive consumption externalities are present.

(Total for Question 3 is 2 marks)

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Mark scheme · 1.24 Externalities: Negative and Positive Production and Consumption Effects: 10-minute Pack

Question 1

MSC = MPC + marginal external cost = 8 + 2	**M1**
MSC = £10 per unit	**A1**
Pigovian tax should equal the marginal external cost to internalise the externality	**M1**
Pigovian tax = £2 per unit	**A1**

Answer: MSC = £10 per unit; Pigovian tax = £2 per unit.

Question 2

MPC is the additional cost to the firm of producing one more unit, including private inputs and operating costs	**B1**
MSC equals MPC plus the external cost imposed on third parties, such as health and cleaning costs from dust pollution	**B1**

Answer: MPC is the firm's extra cost of producing one more brick; MSC is MPC plus the external costs borne by nearby households, for example higher cleaning and health costs from dust.

Question 3

MPB is the benefit to the individual consumer from consuming one more unit, e.g. reduced own risk of illness from the vaccine	**B1**
MSB equals MPB plus external benefits to others, so when vaccines produce positive consumption externalities MSB > MPB	**B1**

Answer: MPB is the private benefit to the vaccinated person; MSB is MPB plus benefits to others (reduced transmission), so MSB is larger than MPB when vaccines give positive externalities.

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