

Elasticity Long Questions

1996

(a) Define income elasticity of demand (IED) and give the formula by which it is calculated. (20)

(b) In the case of each of the following goods, explain briefly if the good is a normal or an inferior or a luxury good.

Good A has an IED of 1.5.

Good B has an IED of -3.

Good C has an IED of 10.

Good D has an IED of 0. (20)

(c) Briefly explain how a knowledge of elasticities is useful to

(i) A producer of goods who is considering increasing production.

(ii) The government when it is considering if it should increase indirect tax on a commodity.

(iii) A monopolist when he is deciding to fix the price for the commodity which he is selling. (35)

[75 marks]

1998 Q2

(a) Define **each** of the following and in each case give the formula by which it is measured.

(i) Cross Elasticity of Demand.

(ii) Income Elasticity of Demand. (20 marks)

(b) If a consumer spends £20 per week on petrol when its price is 60p per litre, and continues to spend £20 per week on it when its price is increased to 62p per litre, what is the consumer's price elasticity of demand for petrol (in respect of this price change)? (20 marks)

(c) Briefly explain how a knowledge of elasticities is useful to

(i) A producer of goods who is considering increasing production.

(ii) The government when it is considering if it should increase indirect tax on a commodity.

(iii) A monopolist when she is deciding to fix the price for the good which she is selling. (35 marks)

[75 marks]

1999 Q4

- (a) (i) Define what is meant by Cross Elasticity of Demand.
(ii) Show the formula by which it can be measured. (20 marks)

- (b) You are given the following information about certain goods:

Cross Elasticity of Demand between Good A & Good B = +2.5

Cross Elasticity of Demand between Good A & Good C = -0.6

Cross Elasticity of Demand between Good A & Good D = +0.3

Cross Elasticity of Demand between Good A & Good E = -1.4

Which of these goods are complements to Good A? Explain your answer.

Which of these goods is the closest substitute for Good A? Explain your answer.

(25 marks)

- (c) Define the following types or degrees of price elasticity of demand:

- (i) Elastic demand.
(ii) Inelastic demand.
(iii) Unit elasticity.
(iv) Perfectly inelastic demand.
(v) Perfectly elastic demand.

(30 marks)

[75 marks]

2001 Q2

- (a) Define what is meant by price elasticity of demand. (10 marks)

- (b) A consumer buys 80 units of a good when the price is £1.50. The price increases to £1.75 and the consumer now buys 70 units.

- (i) Using the formula below, calculate the consumer's price elasticity of demand. Show all your workings.

$$\frac{\Delta Q}{\Delta P} \times \frac{P_1 + P_2}{Q_1 + Q_2}$$

- (ii) Is demand for this good elastic, inelastic or unitary elastic?
- (iii) The seller of the above good wishes to earn maximum revenue. What changes, if any, should the seller make in the selling price of the good to earn maximum revenue? Explain your answer. (35 marks)

2002 Q2

- (a) Define (i) Income Elasticity of Demand.
(ii) Cross Elasticity of Demand. (15 marks)
- (b) (i) "Income elasticity of demand is usually positive but sometimes negative".
Explain, giving examples, the meaning of this statement.
- (ii) A consumer spends 40% of income on a certain good. After the consumer's income doubles (everything else remaining unchanged), only 30% of income is spent on the good. State whether this good is a normal or inferior good and explain your answer. (20 marks)
- (c) Which of the figures stated below is likely to represent:
- (i) **Income** elasticity of demand for potatoes;
(ii) **Income** elasticity of demand for designer clothes;
(iii) **Price** elasticity of demand for airline seats.
- 2.8, -0.1, + 2.5
- Explain **each** of your choices. (30 marks)
- (d) Income elasticity of demand for a good is +1.8 and sales in Year 1 are 20,000 units. If consumers' incomes are expected to rise by 5% in Year 2, calculate the expected level of sales. Show your workings. (10 marks)
- [75 marks]**

2003 Q2

- (a) Define (i) *price elasticity of demand* and (ii) *cross elasticity of demand*. In **each** case, state the formula by which it is measured. (20 marks)
- (b) When the price of Good X is €27, the quantity demanded of Good Y is 1,200 units. When the price of Good X falls to €23 (the price of Good Y unchanged) the quantity demanded of Good Y falls to 800 units.
- (i) Using the *cross elasticity of demand formula*, calculate the cross elasticity of demand for Good Y. Show all your workings.
- (ii) Is Good Y a substitute for or complement to Good X? Explain your choice. (25 marks)
- (c) A firm has the following price elasticities of demand for two goods, Good X and Good Y:
- Good X 2.0 Good Y 0.5
- What changes, if any, should the firm make in the selling price of each of the goods to increase overall revenue. Explain your answer. (30 marks)
- [75 marks]**

2004 Q2

- (a) Define the following types or degrees of **price** elasticity of demand:
- (i) Perfectly elastic demand;
 - (ii) Perfectly inelastic demand;
 - (iii) Elastic demand;
 - (iv) Unitary elastic demand.
- (20 marks)*
- (b) State and explain **FIVE** factors that affect **price** elasticity of demand. *(25 marks)*
- (c) A consumer spends €120 per month on a product when its unit price is 80c, and continues to spend €120 per month on this product when its unit price increases to €1.
- (i) Using the formula below, calculate the consumer's price elasticity of demand. Show all your workings.
- $$\frac{\Delta Q}{\Delta P} \times \frac{P_1 + P_2}{Q_1 + Q_2}$$
- (ii) Is demand for this product elastic, inelastic or unitary elastic?
- (iii) Should the seller make any changes in the selling price of this commodity to increase overall revenue? Explain your answer.
- (30 marks)*

[75 marks]

2005 Q1

- (c) Explain how an understanding by the Minister for Finance of the concept of **Price Elasticity of Demand** would help in setting levels of indirect taxation. Use examples to illustrate your answer.
- (20 marks)*
[75marks]

2006 Q1

- (b) A manufacturer of three different products calculates the price elasticity of demand for each product as follows:
- Product X: -1.5 Product Y: -1.0 Product Z: -0.3
- The company wishes to maximise its revenues. Explain in respect of **each** of these products, what change, if any, the company should make in the prices currently being charged to enable it to achieve its aim.
- (30 marks)*
- (c) A consumer buys 10 units of Good A when the price of Good B is €5. When the price of Good B rises to €6 (the price of Good A remaining unchanged) the consumer buys 14 units of Good A.
- (i) Define **cross elasticity of demand**.
- (ii) Using an appropriate formula, calculate this consumer's cross elasticity of demand for Good A. Show your workings.
- (iii) Is Good A a substitute for, or a complement to, Good B? Explain your reasoning.
- (30 marks)*
[75 marks]

2008 Q1

(b) The data below represents the market demand and supply schedules for MP3 Players.

Price €	Quantity Demanded (units)	Quantity Supplied (units)
20	100	20
30	80	40
40	60	60
50	40	80
60	20	100

(iii) Using this data, calculate the **price elasticity of demand** when price changes from €40 to €50. (Show all your workings).
For this price change, is demand for MP3 Players elastic or inelastic? Explain your answer.

(30 marks)

2009 Q1

(b) (i) Define income elasticity of demand **and** price elasticity of demand.

(ii) Which figure stated below is most likely to represent each of the following:

- **Income** elasticity of demand for low price cuts of meat;
- **Income** elasticity of demand for Apple iPhones;
- **Price** elasticity of demand for Petrol.

- 1.6 - 0.1 + 4.3

Give reasons for your choice in **each** case.

(30 marks)

(c) Assume **Income** elasticity of demand for games consoles is + **2.5** and total sales in 2008 were 100,000 units.

Calculate the expected total sales for the year if consumers' incomes are expected to fall by 8% in 2009. Show your workings.

(15 marks)

[75 marks]

2009 DEB Q3

- (a) (i) Define Income Elasticity of Demand (YED) and give the formula by which it is calculated.
(ii) In the case of each of the following goods, explain briefly if the good is a normal or an inferior or a luxury good.

Good A has an YED of 10.
Good B has an YED of -4.
Good C has an YED of 1.5.

(25 marks)

- (b) A consumer buys 90 units of a good when its price is €1.60. When the price increases to €1.85, the consumer only buys 80 units of the good.

- (i) Calculate the consumer's **price elasticity of demand**. (Show all your workings.)
(ii) Is demand for this product elastic, inelastic or unitary elastic? Explain your answer.
(iii) What changes, if any, should the seller make in the selling price of the good to increase overall revenue from the sale of the good? Explain your answer.

(30 marks)

- (c) You are the economic adviser to the Minister for Finance. The Minister has decided to raise tax revenue through indirect taxation. Explain how you would use the concept of Price Elasticity of Demand in recommending new levels of indirect taxation. Use examples to illustrate your answer.

(20 marks)

[75 marks]

2010 Q1

- (b) (i) Outline **four** factors which affect price elasticity of demand (PED).
(ii) The PED for the soft drink 'Quencher' has been calculated at **-3.8**.
Using your knowledge of PED, explain the economic meaning of this figure.

(30 marks)

- (c) Many health advisors wish to reduce the consumption of soft drinks. Advise the Minister for Health and Children on possible economic actions that the Government could take to reduce the consumption of soft drinks.

(15 marks)

[75 marks]

2010 DEB Q3

- (a) Define the following types or degrees of **price elasticity of demand**:
- Perfectly elastic demand;
 - Perfectly inelastic demand;
 - Relatively elastic demand;
 - Unitary elastic demand.
- (20 marks)*
- (b) A consumer buys 20 units of Good X when the price of Good Y is €10. When the price of Good Y rises to €12 (the price of Good X remaining unchanged), the consumer buys 28 units of Good X.
- Define **cross elasticity of demand**.
 - Using an appropriate formula, calculate this consumer's cross elasticity of demand for Good X. Show your workings.
 - Is Good X a substitute for, or a complement to, Good Y? Explain your reasoning.
- (25 marks)*
- (c) Briefly explain how a knowledge of elasticities would be useful to:
- A producer considering increasing production.
 - The Irish government considering increasing VAT on petrol or designer clothes.
 - Bord Gáis considering increasing the price of gas (but not electricity).
- (30 marks)*
[75 marks]

2010 EC Q2

- (e) A consumer buys 12 units of Good X when the price of good Y is €6. When the price of Good Y rises to €8 (price of good X does not change) the consumer buys 15 units of Good X.
- Define **cross elasticity of demand**.
 - Using the correct formula, calculate the consumer's **cross elasticity of demand** for Good X. (Workings must be shown.)
 - State whether Good X is a complement to, or a substitute for, Good Y. Explain your reasoning.
- (30 marks)*
[75 marks]

2011 DEB Q1

2011 EC Q1

- (b) The data below represents the market demand and supply schedules for Mobile Phones.

Price €	Quantity Demanded (units)	Quantity Supplied (units)
40	200	40
60	160	80
80	120	120
100	80	160
120	40	200

- (iii) Using this data, calculate the **price elasticity of demand** when the price changes from €80 to €100. (Show all your workings).
For this price change, is demand for mobile phones elastic or inelastic?
Explain your answer.

(30 marks)

2012 Q1

- (b) A manufacturer of three different products calculates the price elasticity of demand (PED) for each product as follows:

Product A: -2.8 Product B: -1.0 Product C: -0.5

The manufacturer wishes to maximise its revenues. Explain in respect of **each** of these products, what change, if any, the manufacturer should make in the prices currently being charged to enable it to achieve its aim.

Illustrate your answers with the aid of a demand curve for **each** product. (30)

- (c) You are given the following information about certain products:

Cross Elasticity of Demand between Product X & Product A = -0.8
Cross Elasticity of Demand between Product X & Product B = +3.2
Cross Elasticity of Demand between Product X & Product C = -1.6
Cross Elasticity of Demand between Product X & Product D = +0.5

- (i) Which of the products above are substitutes for Product X? Explain your answer.
(ii) Which product is the closer complement to Product X? Explain your answer. (20)

2014 Q3

- (a) (i) Define the categories of Price Elasticity of Demand (PED): elastic, inelastic and unit elastic.
(ii) State **three** factors that affect PED **and** explain how each factor affects it. (30)

- (b) A consumer/motorist buys 20 litres of petrol when the price is €1.60 per litre. When the price increases to €1.70, as a result of an increase in carbon tax, the consumer buys 19 litres. Calculate the consumer's Price Elasticity of Demand (PED). **(Show all your workings.)** Is this demand for petrol price elastic or price inelastic? Outline the implication of your answer for government revenue. (20)

- (c) A firm is considering a change to its product's price. It conducts market research which reveals that the Price Elasticity of Demand (PED) for the product is **-2.5**. Use this information to answer the following question:
(i) If the firm wishes to maximise total sales revenue, should it lower or raise the price of the product? Explain your answer.

The market research also reveals Income Elasticity of Demand (YED) for the product is **+4.5**.

Use this information to answer the following question:

- (ii) In the case of an economy which is expected to remain in recession for the next five years, what, if any, will be the likely impact on the demand for the product? Explain your answer. (25)

[75 marks]