A-Level Edexcel Economics: Elasticities Past Paper Questions
**Question 1**

A mobile phone company has 2 million customers for a package of services. Each customer pays a monthly fee of £25. The company conducts market research and estimates that price elasticity of demand for this package is −2.

If the company reduces monthly fees by £5, the change in total revenue is likely to be:

A  + £6 million.
B  − £3 million.
C  − £6 million.
D  + £3 million.

(a) **Answer**

(b) **Explanation**

**Question 2**

The cross elasticity of demand for tea is likely to be

A  negative following a change in the price of milk
B  positive following an increase in income since tea is an inferior good
C  negative following a change in the price of coffee
D  positive following a decrease in income since tea is a normal good.

Answer

Explanation
Question 3

Estimates of income elasticity of demand for selected soft drinks for the period 2001 – 2006:

<table>
<thead>
<tr>
<th>Soft drink</th>
<th>Income elasticity of demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fizzy drinks</td>
<td>- 0.24</td>
</tr>
<tr>
<td>Fruit drinks</td>
<td>+ 0.16</td>
</tr>
<tr>
<td>Bottled water</td>
<td>+ 1.05</td>
</tr>
</tbody>
</table>

(Source: Nielsen/Britvic 2007)

From the data in the table it may be deduced that:

A. An increase in consumer income will lead to a more than proportionate increase in demand for fruit drinks.
B. A decrease in consumer income will cause a fall in the demand for all of the drinks.
C. An increase in consumer income will lead to a decrease in demand for fizzy drinks.
D. A decrease in consumer income will lead to a less than proportionate decrease in demand for bottled water.

(a) **Answer**

(b) **Explanation**
Question 4

<table>
<thead>
<tr>
<th>Type of flight</th>
<th>Price elasticity of demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short haul business</td>
<td>-0.70</td>
</tr>
<tr>
<td>Short haul leisure</td>
<td>-1.52</td>
</tr>
</tbody>
</table>

Source: Department of Finance Canada 2008 (www.fin.gc.ca/fin-eng.html)

The table shows estimated price elasticities of demand for air travel for business and leisure customers of ‘Air Canada’, an airline company. It may be deduced from the data in the table that

A demand is more price elastic for business travellers than leisure travellers

B an increase in price for business travellers and a decrease in price for leisure travellers will increase total revenue

C air travel is an inferior good

D The cross elasticity of demand for business air travel with regard to a change in price of leisure air travel is negative.

Answer

Explanation
**Question 5**

Jackie’s income decreases from £2000 to £1800 per month. As a result, the number of times Jackie goes to the cinema decreases from twice to once per month. Her income elasticity of demand for cinema visits is:

A  -0.5  
B  0.5  
C  -5.0  
D  5.0  

Answer  

Explanation  

(1)  

(3)

**Question 6**

A negative cross elasticity of demand may be expected for which of the following pair of goods?

A  Motor vehicles and rail travel  
B  Bus transport and potatoes  
C  Motor vehicles and petrol  
D  Bus transport and taxi services  

Answer  

Explanation  

(1)  

(3)
Question 7

The table below shows UK estimates of the percentage changes in price and quantity demanded for fresh fruit and fresh vegetables between 2007 and 2008. You may use the last column for your workings.

<table>
<thead>
<tr>
<th>Type of food</th>
<th>Price change (%)</th>
<th>Quantity demanded (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh fruit</td>
<td>7.0</td>
<td>-7.7</td>
</tr>
<tr>
<td>Fresh vegetables</td>
<td>8.0</td>
<td>-9.6</td>
</tr>
</tbody>
</table>

(Source: © Crown Copyright 2008)

Other things being equal the data in the table suggest that:

1. Demand is more price elastic for fresh vegetables than fresh fruit.
2. Total revenue has increased for producers of both fresh fruit and fresh vegetables.
3. Demand is price inelastic for both fresh fruit and fresh vegetables.
4. There is a negative income elasticity of demand for fresh fruit and fresh vegetables.

Answer

Explanation
Question 8

Which of the following pairs of goods is likely to have a positive cross price elasticity of demand between them?

A  Computer games consoles and computer games

B  Lamb and wool

C  Rail travel and private car use

D  Bus travel and orange juice.

Answer

Explanation

Question 9

The diagram shows the market for sports shoes. Which of the following is true?

A  The supply of sports shoes is price inelastic.

B  The area of consumer surplus is greater than the area of producer surplus.

C  There is constant price elasticity of demand along the length of the demand curve.

D  There is an inverse relationship between the price and quantity supplied of sports shoes.

Answer
Question 10

Estimates of UK income and price elasticity of demand for milk and cheese

<table>
<thead>
<tr>
<th>Dairy product</th>
<th>Income elasticity of demand</th>
<th>Price elasticity of demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk</td>
<td>0.05</td>
<td>-0.36</td>
</tr>
<tr>
<td>Cheese</td>
<td>0.23</td>
<td>-0.35</td>
</tr>
</tbody>
</table>


From the information in the table it can be deduced that milk and cheese:

A Are inferior goods with a price inelastic demand
B Have a positive cross elasticity of demand
C Are inferior goods with a price elastic demand
D Are normal goods with a price inelastic demand.

Answer

Explanation

(3)

Question 11

Research conducted for HMRC estimated the cross elasticity of demand for using gaming machines to be 1.28 in response to changes in the price of national lottery tickets.


In October 2013 Camelot increased the price of a national lottery ticket from £1 to £2.

(b) Explain the likely impact of the price increase of national lottery tickets on the demand for using gaming machines.

(2)
Question 12

Between 2010 and 2015 the average price of tea in the UK increased from £7.20 per kilo to £8.48 per kilo. Over the same period the quantity of tea purchased fell from 97 million kilos to 76 million kilos.


(a) Assume that the change in the quantity of tea purchased was only caused by the change in the price of tea. Calculate the price elasticity of demand for tea in response to the rise in its price. You are advised to show your working.

(2)

12 (b)

Estimates for the demand for black tea in the UK suggest that it is an inferior good. This implies it has a negative:

☐ A cross elasticity of demand
☐ B income elasticity of demand
☐ C price elasticity of demand
☐ D price elasticity of supply

(1)
Question 13

The price of coal

Figure 1: The rising price of Australian coal

(\text{Source: © Worldbank.org})

Extract 1  Floods hit Australian supply of coal

Severe floods have damaged many of Australia’s coal mines and railway lines, dramatically reducing the production and transportation of coal and increasing its price by up to 35% per tonne from November 2010 to January 2011. A vast area has been affected by the floods and the cost of pumping out the water and repairing the mines could run into hundreds of millions of dollars. The floods have also led to an increase in speculative buying of coal by stock market traders anticipating shortages.

Despite the higher price of coal and reduced output, the revenues of the big Australian coal producers have remained the same.

The increase in coal prices is expected to put pressure on electricity prices over the coming months. The UK generates about one quarter of its electricity by burning coal, much of which is imported from overseas, including Australia.

(\text{Source: adapted from © Times Newspapers Limited, 5th January 2011})
Extract 2  Carbon emissions trading scheme in Australia

Around 500 of Australia’s biggest polluting companies will be forced into an emissions trading scheme in 2015, similar to that operating in the European Union. The Australian Government intends to achieve a 5% cut in carbon emissions by 2020.

Although Australia accounts for just 1.5% of global greenhouse gas emissions, its heavy reliance on coal fired power stations makes it one of the world’s biggest carbon polluters per head of population. It is also the world’s biggest exporter of coal.

Initially, the companies in the scheme will receive 94.5% of their carbon permits for free, and then obtain government subsidies to purchase the other 5.5% of permits, so that no additional costs to the firms arise. Gradually over time, these subsidies will be removed. Emissions trading schemes have also attracted interest from China and South Korea.

However, the scheme is a blow to the Australian mining industry which faces carbon costs of at least 25 billion Australian dollars by 2020. According to Anglo American Corporation, some 40 000 jobs are directly at risk and a further 100 000 indirectly. It also believes some mining investment projects will be cancelled, adding further to structural unemployment. Government training programmes and relocation subsidies may be required to improve the mobility of labour.

(Source: adapted from © The Financial Times, 10th July 2011 and 8th November 2011)

(a) With reference to Figure 1 and the first paragraph in Extract 1, outline the causes of the increase in Australian coal prices in January 2011. Illustrate your answer with a demand and supply diagram.

(b) What does the evidence in the second paragraph of Extract 1 suggest about the price elasticity of demand for Australian coal? Explain your answer.

(c) Examine the likely economic effects of an increase in Australian coal prices on UK electricity prices.

*(d) With reference to Extract 2 and your own knowledge, assess the benefits of a system of tradable pollution permits for reducing carbon emissions.

*(e) Discuss two possible government measures to improve the mobility of labour in the coal mining industry.
Extract 1  Rising price of beef

It is not a happy time in American fast food restaurants. Rising beef prices have reduced profit margins at the McDonalds, Burger King and Wendy chains. They have found it difficult to pass on higher beef prices to their customers through the sale of burgers such as the ‘Big Mac’ and ‘Whopper’. Instead, the fast food restaurants have responded by promoting sales of chicken burgers and fish fillets.

Beef prices have risen due to higher costs for cattle feed and severe drought conditions in Australia and New Zealand (the main suppliers of beef for American fast food restaurants).

However, there is some good news. The fast food restaurants have benefited from the recession as consumers made savings by switching from eating at expensive restaurants to cheaper burger bars.

Source: © The Times ‘Increase in meat prices has burger lovers asking: where’s the beef?’, Alexandra Frean, 24th May 2010)
Extract 2  Cattle farms damaging the rainforest

Deforestation in Brazil releases an estimated 400 million tonnes of carbon dioxide into the atmosphere every year, making the country one of the biggest emitters of the gas in the world. An average of 7,330 square miles of rainforest has been lost each year since 1995. The destruction of rainforest has accelerated over the past few years due to soaring beef and soya prices. Farmers are burning more rainforest to turn land into cattle ranches and into fields for growing crops.

However, the President of Brazil announced plans to reduce deforestation by subsidising sustainable development projects. These include replanting trees and creating eco-friendly tourism as alternative means of providing employment and income for local communities. The amount of funds made available has not been revealed.

The proposals also include an increase in the policing of forested areas and severe penalties for those breaking the law through illegal logging and farming.

(Source: © Guardian News & Media Ltd 2008, adapted from 'Brazil sets target to slow Amazon deforestation,' by David Ljunggren)

(a) With reference to Figure 1 and the second paragraph of Extract 1, explain the causes of the increase in price of beef. Use a supply and demand diagram in your answer. (6)

(b) Using cross elasticity of demand, discuss the likely relationship between the price of beef and the demand for chicken and fish. (6)

(c) Assess whether beef and beef burgers are likely to be normal goods or inferior goods. (8)

*(d) Using the concepts of external costs and market failure, examine the possible economic effects of farmers 'burning more rainforest to turn land into cattle ranches and into fields for growing crops.' (Extract 2, lines 5–6). Use an appropriate diagram in your answer. (14)

*(e) Discuss the possible economic effects of the government providing subsidies to support sustainable development projects such as those referred to in Extract 2. (14)
Question 15

10 The UK Tobacco Market

Figure 1: UK Cigarette Consumption (2000 – 2006)

UK Cigarette Consumption

(Source: www.the-tma.org.uk)

Figure 2: Cigarette Tax in selected EU countries (2000 – 2006)

Cigarette Tax in Selected EU Countries 2007 (Tax on main brand of 20 cigarettes)

(Source: www.the-tma.org.uk)
**Extract One**  
**Tobacco smoking in decline**

The government can be proud of its achievements in implementing strong tobacco control measures over recent years. The ban on tobacco advertising in 2003 and effective public health campaigns have helped smokers to give up. The ban on smoking in pubs, clubs and restaurants in July 2007 means the decline is set to continue.

However, smoking is hardly declining among socially disadvantaged groups. Currently, the government is unlikely to reduce health inequalities and in fact the gap is set to widen.

It is vitally important that the government increases measures to help poorer smokers to quit by widening access to ‘stop smoking’ treatments and maintaining funding of its mass media educational campaigns. The use of nicotine patches and gum, which are intended to reduce dependency on cigarettes, has helped many smokers give up. The government should also renew its efforts to reduce the illegal practice of tobacco smuggling which has encouraged smoking.

(Source: Adapted from Deborah Arnott, Director of the health campaigning charity ASH)

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**Extract Two**  
**Tobacco taxes too high**

The UK has a higher tax rate on cigarettes than any other European Union country and according to figures from Her Majesty’s Revenue and Customs, as much as £25 billion in revenue has been lost since 2000 due to smuggling and cross-border shopping. The Tobacco Manufacturer’s Association estimate that UK tax was not paid on 27 per cent of cigarettes consumed in 2006.

Despite the introduction of a smoking ban in pubs, clubs and restaurants in England in July 2007 more than twenty-five per cent of the adult population continue to smoke. Many pubs, clubs and restaurants have invested in comfortable outdoor smoking areas in order to keep as many customers as possible.

The minimum legal age of sale for tobacco was increased from 16 to 18 years of age in October 2007 but this seems to have had little impact on reducing the numbers of young people who smoke, according to a Trading Standards survey in North West England. It found that many young people are still able to obtain tobacco from the informal economy, for example, street markets or neighbours.

(Source: The Tobacco Manufacturer’s Association)
If you answer Question 10 put a cross in this box ☐.

(a) (i) With reference to Figure 1, calculate the percentage change in cigarette consumption in the UK between 2000 and 2006. (2)

(ii) Analyse two likely effects on cigarette retailers of the change in cigarette consumption. (6)

(iii) Using the concept of cross-elasticity of demand, assess the likely relationship between the demand for cigarettes and the price of nicotine replacement products. (10)

*(b) Examine the effectiveness of indirect taxation as a means of reducing cigarette and tobacco consumption. Use a demand and supply diagram in your answer. (12)

*(c) Examine the economic benefits of a reduction in cigarette and tobacco consumption. (12)

(d) To what extent might asymmetric information exist in the tobacco market? (6)
Question 16

Extract A

Competition and Markets Authority (CMA) report into the UK energy market

An investigation into the UK energy market by the CMA concluded that customers have been paying £1.4 billion a year more than they would in a fully competitive market. It found that 70% of domestic customers of the six largest energy firms were on an expensive standard rate. These customers could each save over £300 a year by switching to a cheaper deal but appear reluctant to do so.

However, the CMA investigation found no evidence of anti-competitive practices by firms. There has even been an increase in new entrant energy suppliers over recent years and their combined market share has reached 12% in both gas and electricity supply.

To protect consumers, the CMA has introduced various measures to open up and increase competition in the UK energy market. These include:

- the creation of a database designed to help consumers switch energy suppliers – rival suppliers can directly contact these customers
- the conversion of all homes to smart energy meters making it easier for customers to measure energy consumption and switch supplier
- new rules to protect the four million vulnerable customers using prepaid meters – this includes a temporary price cap until smart meters have been installed.


(d) With reference to Extract A and your own knowledge, examine two possible reasons for the change in price elasticity of demand for electricity over time.