



## **Economics Questions By Topic:**

### **Indirect Taxation (1.4.1)**

### **A-Level Edexcel Theme 1**

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## SECTION A

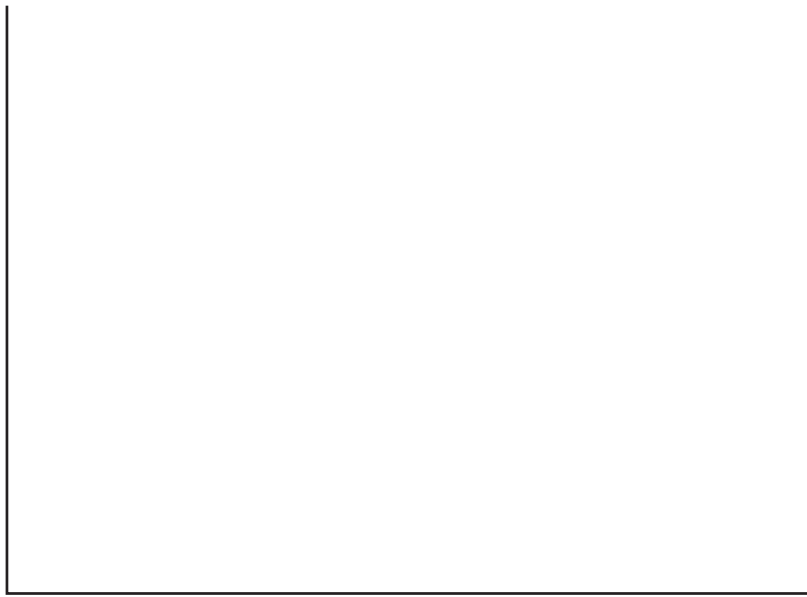
**Write your answers in the spaces provided.**

- 1** Fuel duty is an excise tax imposed on the sale of petrol, included in the price paid by consumers, set at 58 pence per litre.

(Source: <https://www.gov.uk/tax-on-shopping/fuel-duty>)

Draw a supply and demand diagram to show the incidence of a specific petrol tax on consumers and producers.

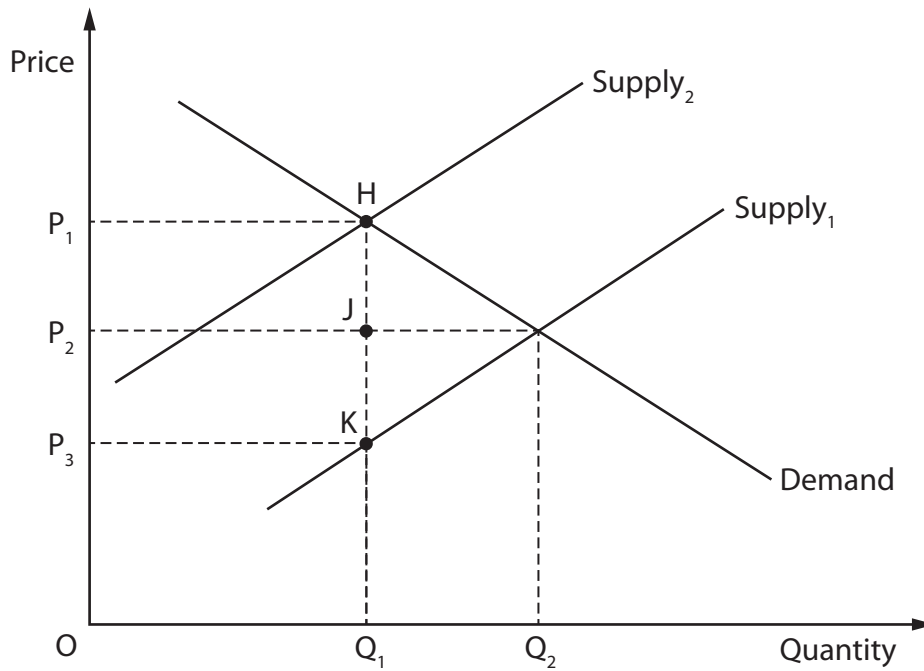
**(4)**



**(Total for Question 1 = 4 marks)**

2 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  $\text{Supply}_1$  to  $\text{Supply}_2$ .



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

(1)

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



3 In 2016 the average energy bill per household was £1 070 per year, excluding VAT, an indirect tax charged at 5%.

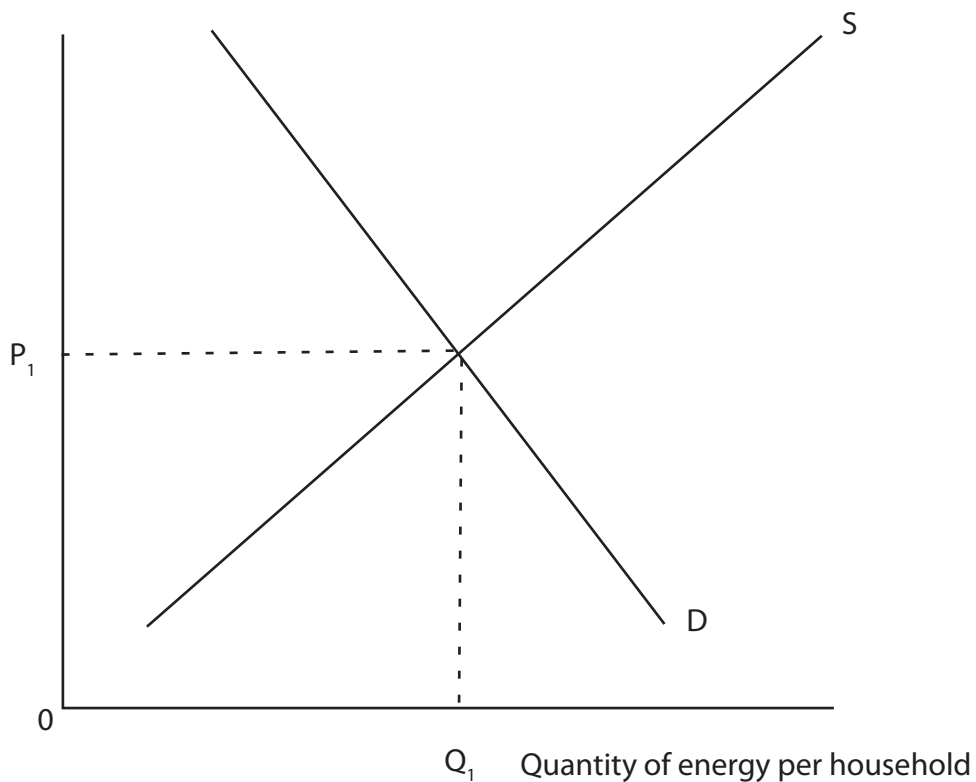
(Source: adapted from ©Crown Copyright <https://www.ofgem.gov.uk/publications-and-updates/infographic-bills-prices-and-profits>)

(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 £1 019.00
- D £1 123.50

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

Average annual household bill (£)



(c) Define the term 'indirect tax'.

(1)

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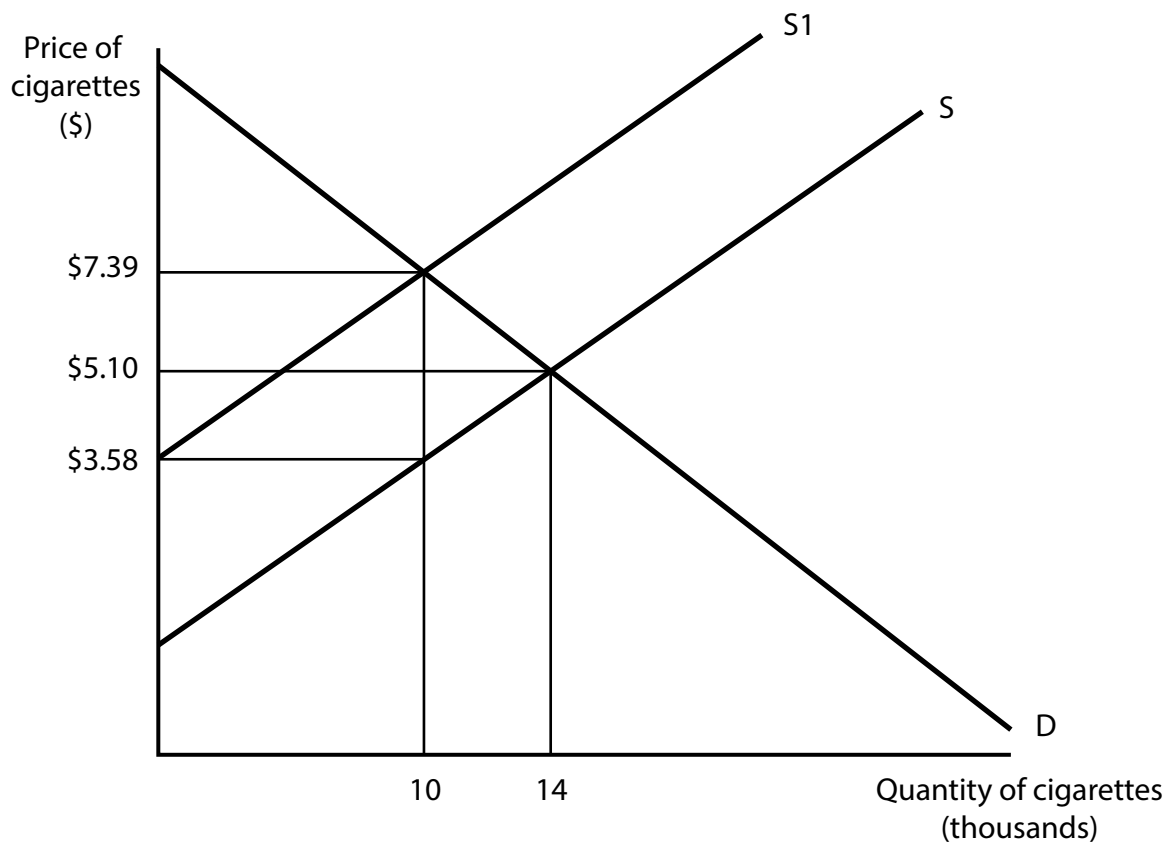
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**(Total for Question 3 = 4 marks)**

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4 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

Answer



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

(2)

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

(2)

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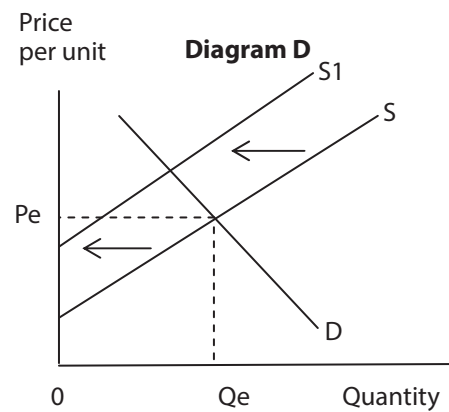
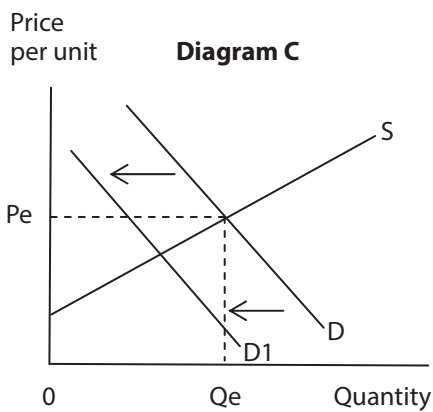
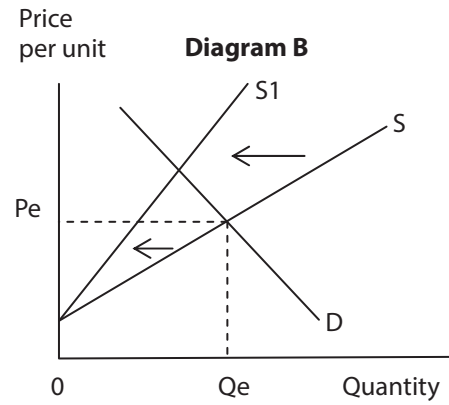
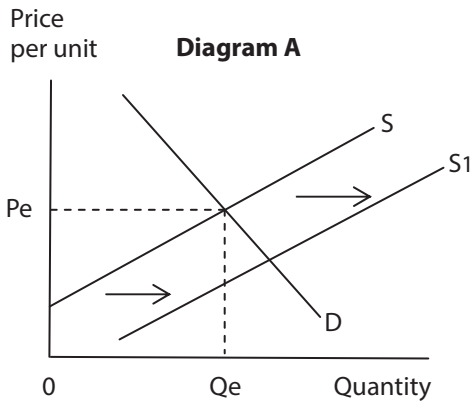
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**(Total for Question 4 = 5 marks)**

5



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.)

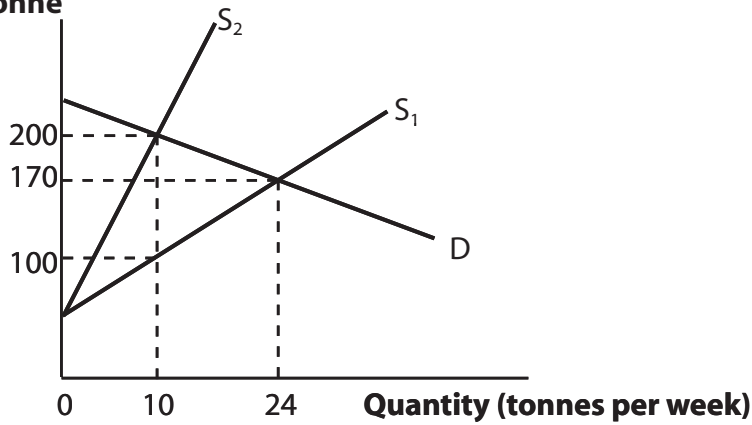
Answer

(1)





7 Price (£) per tonne



The diagram shows how a tax imposed on a product causes its supply curve to move from  $S_1$  to  $S_2$ .

Which of the following best describes the market situation shown?

(1)

- A It is an *ad valorem* tax and its incidence falls mainly on producers
- B It is a specific tax and its incidence falls mainly on consumers
- C It is an *ad valorem* tax and its incidence mainly falls on consumers
- D It is a specific tax and its incidence falls mainly on producers.

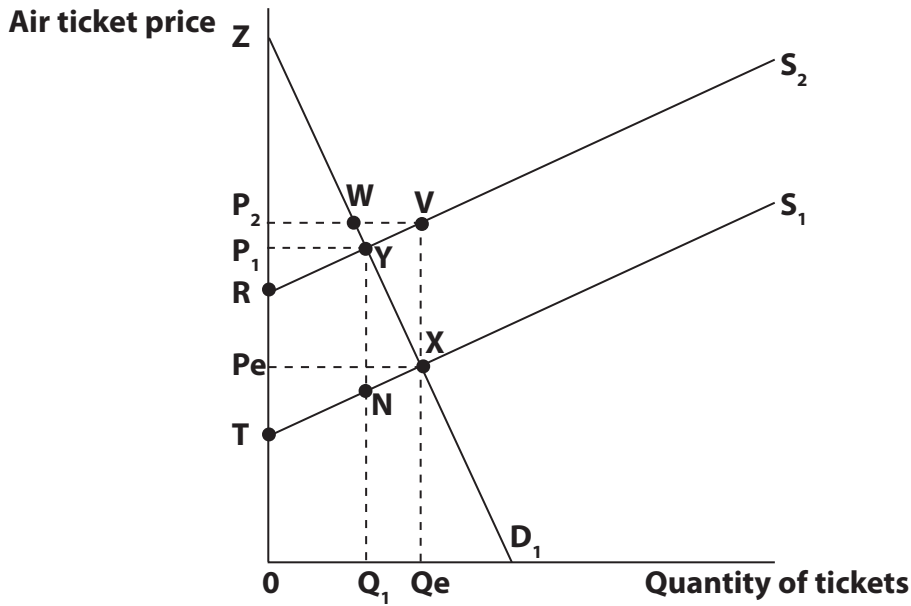
Answer

Explanation

(3)

Total for Question 7 = 4 marks)

8



The diagram shows the impact of a specific tax placed on air travel. Which of the following is correct?

(1)

- A The total tax revenue is  $PeP_1YX$
- B Producer surplus increases
- C The price of air tickets rises from  $P_e$  to  $P_2$
- D Consumer surplus decreases

Answer

Explanation

(3)

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END OF SECTION A

(Total for Question 8 = 4 marks)

## SECTION B

Write your answer in the space provided.

### 9 Bottled water

Figure 1 UK bottled water market

Year	Consumption (million litres)	Sales revenue (£ million)
2008	1 970	1 380
2009	2 010	1 400
2010	2 020	1 420
2011	2 070	1 500
2012	2 140	1 570
2013	2 360	1 770
2014	2 580	1 960

(Source: [http://www.britishsoftdrinks.com/write/MediaUploads/Publications/BSDA\\_Annual\\_Report\\_2015.pdf](http://www.britishsoftdrinks.com/write/MediaUploads/Publications/BSDA_Annual_Report_2015.pdf))

#### Extract 1 Growth in UK bottled water sales

The consumption of bottled water has continued to grow at a time of falling demand for other types of soft drink such as fruit juices, smoothies and fizzy colas. The growth in demand for bottled water reflects successful promotions and more people trying to follow healthier lifestyles.

The potential for further growth is very positive: annual bottled water consumption per head in the UK is 41 litres, which is far below the West European average of 119 litres.

5

The recycling of bottles and cans has increased rapidly over the past decade; many containers are now produced with 25–50% recycled materials. Of the bottled water consumed in the UK around 73% is bottled in the UK, including most supermarket own brand water. 15% comes from France, including premium brands such as Badoit and Perrier.

10

(Source: adapted from [www.britishsoftdrinks.com/PDF/2013UKsoftdrinksreport](http://www.britishsoftdrinks.com/PDF/2013UKsoftdrinksreport))

## Extract 2 Environmental damage from bottled water

Water is a precious resource. Governments should ensure the sustainability of safe water supplies for the benefit of all people and the natural environment.

The use of bottled water is harmful to the environment. Three litres of water are used directly or indirectly in the production of one litre of bottled water. The majority of bottles are made of plastic and end up in landfill sites rather than being recycled. 5

Furthermore, vast amounts of plastic waste never reach the recycling plants but end up in the oceans, killing fish and birds who mistake it for food. It takes up to a thousand years for plastic to decompose and so the problem is set to get worse.

Bottled water is often transported hundreds of miles from its origin to shops and consumers, at considerable carbon cost. By contrast, tap water only takes a little energy to pump along pipelines into homes. 10

Bottled water is also expensive and consumers can pay anything up to 10 000 times more than if they just drank tap water. Studies have shown that tap water is generally just as clean and healthy as bottled water, if not more so. Furthermore, over half of the bottled water in the UK comes from purified tap water. It is time for the UK Government to intervene by increasing the indirect tax on bottled water. 15

(Source: adapted from <http://www.guardian.co.uk/commentisfree/2007/jul/10/timetocapbottledwater?INTCMP=SRCH> and [http://www.sierraclub.org/committees/cac/water/bottled\\_water/bottled\\_water.pdf](http://www.sierraclub.org/committees/cac/water/bottled_water/bottled_water.pdf))



**9** Evaluate the likely economic effects of an increase in the indirect tax on bottled water. Use a supply and demand diagram in your answer.

**(14)**

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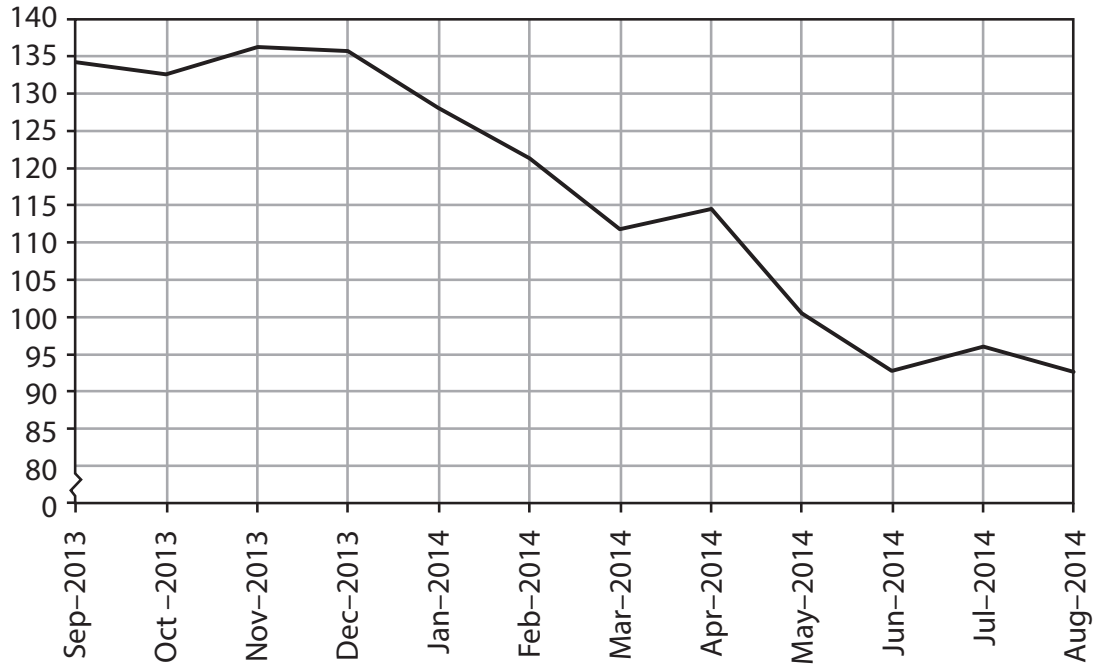
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**(Total for Question 9 = 14 marks)**

## 10 The market for iron ore

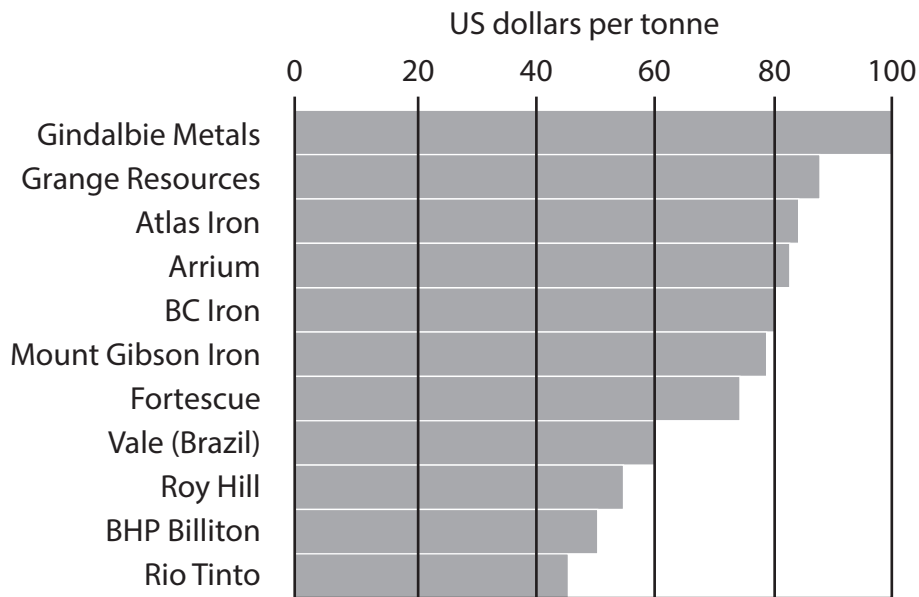
**Figure 1 Price of iron ore (September 2013 – August 2014)**

US dollars per tonne



(Source: <http://www.indexmundi.com/commodities/?commodity=iron-ore&months=12>)

**Figure 2 Mining companies: cost of producing one tonne of iron ore**



(Source: Reported in *FT*, 'Australia's iron ore producers steel themselves for casualties' Jamie Smyth and Lucy Hornby, 14th September 2014, <http://www.ft.com/cms/s/0/9f3235d0-3a30-11e4-8aa2-00144feabdc0.html#axzz3TFuTxa6H>)

**Extract 1 Falling iron ore prices**

The price of iron ore has fallen dramatically since September 2013 following a significant increase in production from the world's four largest miners of the commodity, Rio Tinto, BHP Billiton, Vale and Fortescue. This has come at a time of falling consumption of iron ore from China, the world's biggest customer. Iron ore is a key raw material in the production of steel.

5

The slump in iron ore prices is forcing high-cost iron ore producers to close down operations. Stockpiles of iron ore at Chinese steel mills are at record levels. Despite the fall in price, BHP Billiton has announced plans to increase annual production capacity of iron ore by 30% to 290 million tonnes by 2017. This follows Rio Tinto's plans to increase annual production capacity by 24% to 360 million tonnes by 2015. Both companies have managed to increase efficiency and cut production costs, but this has not prevented their share prices from falling. They are confident that long term demand for iron ore will grow from India, China and other Asian countries.

10

(Source: adapted from 'Rio Tinto vows to slug it out with BHP in iron ore production war', by Jamie Smyth, *The Financial Times*, 9th October 2014, <http://www.ft.com/cms/s/0/302943a4-4f7f-11e4-a0a4-00144feab7de.html#axzz3TFuTxa6H>)

## Extract 2 Tax on Australian iron ore

The Australian Government has criticised the mining companies' policy of increasing iron ore production that further reduces its price. Most of Rio Tinto's and BHP Billiton's iron ore is mined in Western Australia. Every \$1 per tonne fall in the iron ore price causes a \$300 million fall in the Australian Government's indirect tax revenue from sales of iron ore. The Government warned that it may be forced to raise taxes on each tonne of iron ore extracted. 5

(Source: adapted from 'Tumbling iron ore prices a concern for miners and the Treasury alike', The Guardian.com, 20th May 2014, <http://www.theguardian.com/business/2014/may/20/tumbling-iron-ore-prices-a-concern-for-miners-and-the-treasury-alike>)

## Extract 3 Emissions trading scheme scrapped in Australia

Plans to introduce an emissions trading scheme (tradable pollution permits) for Australia's biggest polluting companies have been scrapped by the Government following concerns over its costs to the mining industry and the impact on investment and jobs. Australia will no longer join with the European Union's emissions trading scheme. The country is one of the world's biggest carbon emitters on a population per head basis because of the significance of its mining sector. The Government has replaced the scheme with a policy called Direct Action where grants are available for companies which reduce their pollution emissions. 5

The decision to halt the introduction of tradable pollution permits creates uncertainty over how the country will achieve its 5% carbon reduction target by 2020 and raises questions over the Government's commitment to tackling climate change. 10

(Source: adapted from 'Australia abolishes tax on carbon emissions', Jamie Smyth and Pilita Clarke, *Financial Times*, 17th July 2014, <http://www.ft.com/cms/s/0/d852822a-0d67-11e4-bcb2-00144feabdc0.html#axzz3TFuTxa6H>)



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(Total for Question 10 = 14 marks)

## 11 The proposed expansion of Heathrow Airport

### Extract 1 Should a third runway be built at Heathrow Airport?

London Heathrow is the world's third busiest airport and a major hub for the global economy. In 2011 it handled more than 476 000 flights and some 65 million passengers. However, the airport is operating at 99.2% of its capacity, making it vulnerable to any disruption. There is a shortage of runway capacity to meet the forecast increase in passenger demand of 15 million using Heathrow Airport by 2020.	5
Research by a business consultancy claims that Britain could lose out on an extra 140 000 jobs if capacity at Heathrow is not increased in the medium term. It estimates that £4.5 billion will be lost from Gross Domestic Product because of falling foreign investment, as businesses consider locating elsewhere in Europe, and £1.6 billion lost in trade with emerging markets by 2020.	10
However, a third runway at Heathrow would lead to a significant increase in external costs from the extra 900 flights per day over London. Expansion at Heathrow might be unnecessary as almost a quarter of flights are to destinations less than 300 miles away and already well served by train. Domestic flights and short flights to Europe could easily be carried out by train, especially with the continued expansion of Eurostar rail services to many more European cities. Substituting these flights for train services would reduce the need for extra capacity at Heathrow and have significant environmental benefits, as train travel creates one tenth of the pollution per passenger compared to air travel.	15
An alternative might be to develop other airports around London such as Gatwick, Stansted and Luton where significant spare capacity exists. In the long run a new super-sized airport in the Thames estuary might provide the best solution although the financial cost is expected to exceed £50 billion and take at least 15 years to build after planning permission has been received.	20

(Source: adapted from © Guardian News and Media Ltd, 2012 and © Greenpeace, 10 Reasons to Stop Heathrow Expansion (<http://www.greenpeace.org.uk/blog/climate/10-reasons-to-stop-heathrow-expansion>))

**Figure 1: Estimates of price elasticity and income elasticity of demand for UK air travel**

Air travel	Price elasticity of demand	Income elasticity of demand
UK business passengers	-0.2	1.2
UK leisure passengers	-0.7	1.4

(Source: © Crown copyright)

**Figure 2: Air Passenger Duty (APD) rate from April 2012**

Flight distance (miles)	Economy class (tax per passenger)	Other travel classes, e.g. business class (tax per passenger)
0–2000	£13	£26
2001–4000	£65	£130
4001–6000	£81	£162
Over 6000	£92	£184

The APD is an indirect tax introduced in 2006 and is charged to airlines carrying passengers from UK airports. Between 2010 and 2011 APD remained the same. In April 2012 the government increased APD by 8%.

(Source: © Crown copyright)

**11** Examine the likely economic effects on air travel of the increase in Air Passenger Duty (APD). Use an appropriate demand and supply diagram in your answer.

**(14)**

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(Total for Question 11 = 14 marks)

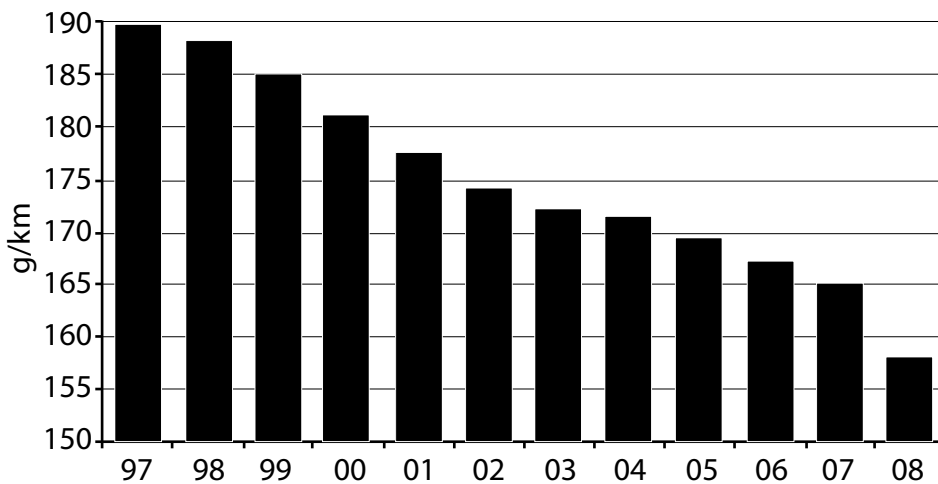
## 12 The Motor vehicle market

**Figure 1: UK new car sales**

Year	UK new car sales (million)
2003	2.58
2004	2.57
2005	2.44
2006	2.35
2007	2.40
2008	2.26
2009 (forecast)	2.16

Source: Society of Motor Manufacturers and Traders fact sheet 2009; [www.smmmt.co.uk](http://www.smmmt.co.uk)

**Figure 2: Carbon dioxide emissions for new cars (grams per kilometre)**



Source: Society of Motor Manufacturers and Traders fact sheet 2009; [www.smmmt.co.uk](http://www.smmmt.co.uk)

### Extract 1 Impact of the economic downturn on the UK car market

The purchase of a car is the second largest expenditure item for consumers after buying a house. Not surprisingly, the economic downturn has caused a drastic fall in demand for new cars. New car sales fell by 21.8% in the first three months of 2009 in response to a 1% fall in real income over the same period.

Thousands of UK motor vehicle manufacturing jobs are likely to be lost this year. Nissan announced 1,200 redundancies in January and Toyota halved the number of shifts on its production lines. Several car companies have reduced wages, for example, Honda has reduced wage rates by 10%. Other companies have frozen pay to avoid compulsory redundancies. BMW and Ford closed their motor vehicle factories temporarily to reduce stockpiles of cars. General Motors, the owner of Vauxhall, may close its two UK plants in Luton and Ellesmere Port unless significant government grants or loans are provided. These factories are in areas of relatively high unemployment. 5  
10

Source: Adapted from 'Fears for 40,000 jobs in British car trade as Toyota goes into red', by Leo Lewis and Tom Bawden, *The Times*, 23rd December 2008 and SMMT fact sheet smmt.co.uk

### Extract 2 Government car scrappage scheme

In the 2009 Budget, Chancellor Alistair Darling announced that motorists who scrap a car more than ten years old will receive a £2,000 grant when purchasing a new vehicle. The scheme follows similar moves by major European countries, including France and Germany.

However, the motor vehicle companies have to contribute £1,000 to the subsidy and the remaining £1,000 is paid by the government. The UK scheme will cost just £300 million and will end when the money runs out. By contrast, the German government has allocated £4.49 billion, boosting new car sales by 40%. 5

The car scrappage scheme is likely to boost the sale of smaller models such as the Toyota Yaris, but will be of little benefit to larger and more expensive vehicles such as Jaguar. The scheme has also been criticised for benefiting foreign manufacturers since eight out of ten cars bought in the UK are imported. However, the government claims that many of these imported cars have UK-made parts and the scheme will help UK car retailers. 10

The Society of Motor Manufacturers and Traders urged the government to provide more help for the industry by reducing fuel taxes and making it easier for consumers to get car loans. 15

(Source: 'Budget 2009: car industry welcomes scrappage scheme', by Dan Milmo, *The Guardian*, 22 April 2009.)

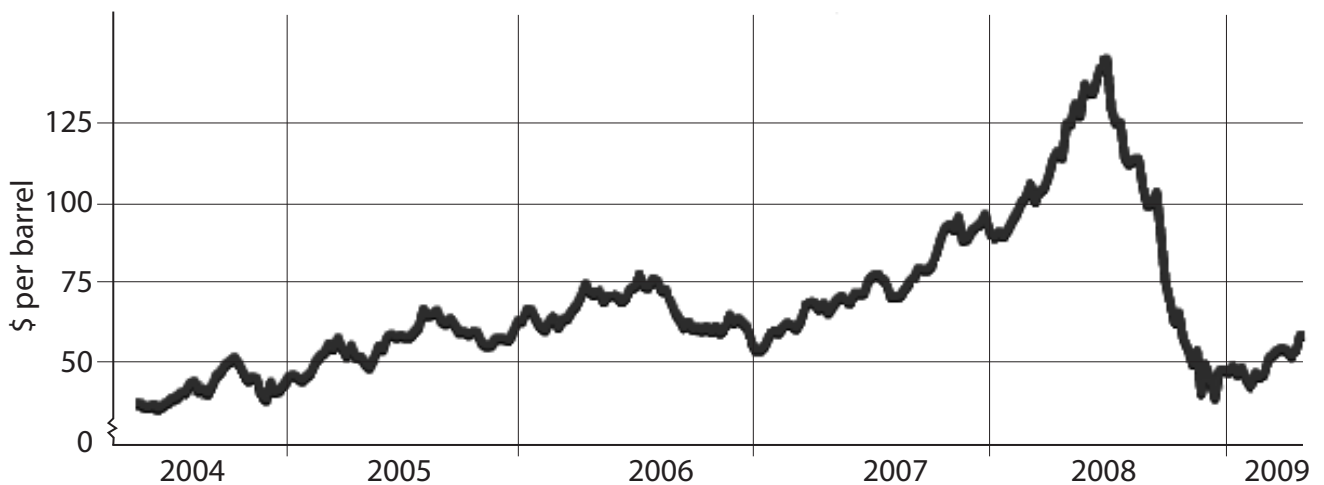




(Total for Question 12 = 12 marks)

### 13 Oil prices

**Figure 1: The fluctuating price of oil, 2004–2009**



(Source: <http://markets.ft.com/tearsheets/performance.asp?s=GB@IB.1>)

#### **Extract 1 Soaring oil prices**

Oil prices increased by more than 400 per cent between the start of 2004 and July 2008, from \$25 to \$139 a barrel, largely caused by rapid economic growth in China and speculative buying by traders intent on making quick profits. The major oil exporters were unable to respond by increasing production, due to a prolonged period of under-investment in refining capacity.

5

The high oil prices have led to an increase in oil exploration and investment in other regions. Many small oil fields in the North Sea that were once too small, too deep or too dangerous to explore are now being developed, but this could take many years to come on stream. Brazil and Azerbaijan have also invested heavily to raise future production.

10

(Source: adapted from 'Explorers find new fields to conquer', Dominic O'Connell, *Sunday Times*, 8th June 2008.)

## Extract 2 The impact of rising fuel prices on the airline industry

There are fears that rising oil prices will worsen the global recession. Many industries are suffering, especially airlines. Hardly a week goes by without an airline company going bankrupt due to uncertainty over the costs of fuel and falling passenger demand. Douglas McNeill, of Blue Oar investments, believes that more than fifty European airlines are under threat as the industry faces its worst ever trading environment.

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However, Willie Walsh, chief executive of BA, said "It's a positive thing if some of these airlines go out of business as it will take capacity out of the market. Look at Alitalia – it should not be allowed to continue in business. It is propped up by state subsidies from the Italian government".

10

Airlines are finding it difficult to raise fares when passenger demand is falling. Similarly, it is hard to cut costs in a safety conscious industry.

(Source: 'Final call for more than fifty airlines', David Robertson, Rachel Sylvester and Alice Thomson, *The Times*, 2nd August, 2008.)

## Extract 3 The price of petrol

UK petrol prices increased by more than 33 per cent between the start of 2004 and July 2008, from 86 pence to 115 pence per litre – the highest in the European Union. This was due to the rising price of oil (from which petrol is derived) and higher taxes on petrol.

The surge in fuel prices led to growing protests across the UK as road haulage companies and motorists complained that the tax on petrol was too high. Many small transport firms faced ruin. The Freight Transport Association, a pressure group for road haulage firms, urged the government to cut taxes on road fuel. In response, the government has cancelled a planned tax increase of 2 pence per litre.

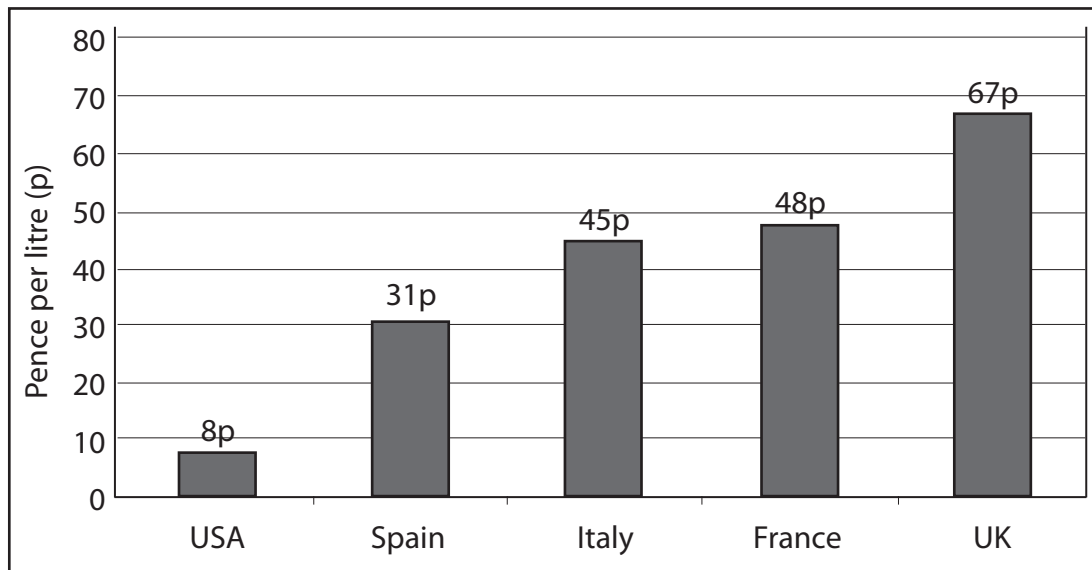
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However, since July 2008 falling oil prices has taken some pressure off the government. Petrol prices have come back down to 89 pence per litre.

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(Source: [www.petrolprices.com](http://www.petrolprices.com) 2009)

**Figure 2: Petrol tax for selected countries May 2008**



(Source: European Automobile Manufacturers Association 2008.)

**13** Evaluate the likely economic effects of an increase in the tax on petrol in the UK.

(12)

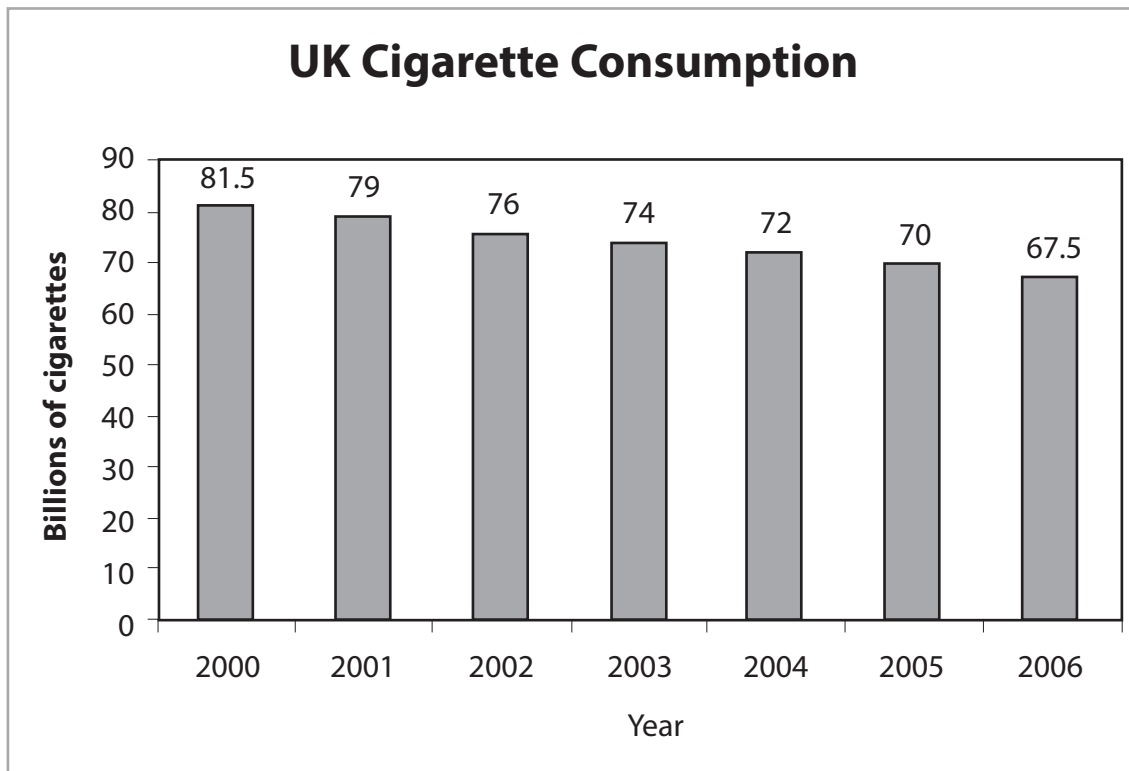
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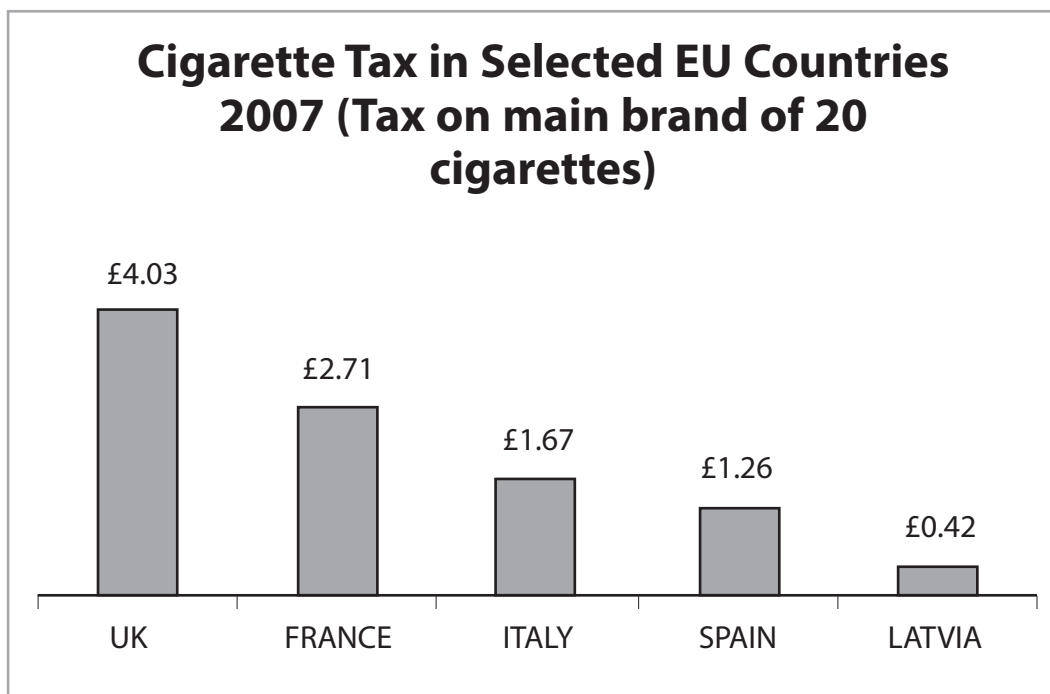
## 14 The UK Tobacco Market

Figure 1: UK Cigarette Consumption (2000 – 2006)



(Source: [www.the-tma.org.uk](http://www.the-tma.org.uk))

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



(Source: [www.the-tma.org.uk](http://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)

### **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)

**14** 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)

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**END OF SECTION B**

**(Total for Question 14 = 12 marks)**



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(Total for Question 15 = 25 marks)

**END OF SECTION C**