

AQA A-LEVEL ECONOMICS • 7136

ECONOMICS



EXAM QUESTION PACK

3.1.3 PRICE DETERMINATION IN A COMPETITIVE MARKET

SCORE

/376

PERCENTAGE

%

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1.

Apple sells iPhones and iPads at considerably lower prices in the USA than in the UK market, but sources the products from the same factories in the Far East.

Explain why firms, such as Apple, might be able to charge different prices for the same product in different markets.

[15 marks]

2.

Distinguish between price elasticity of demand and income elasticity of demand, **and** analyse why, when people have medical insurance, the price elasticity of demand for medical treatment might be 'very low' while the income elasticity of demand is 'likely to be high' (**The European Union Context Extract E**, lines 22 to 24).

[9 marks]

3.

Which one of the following situations would lead to an increase in equilibrium price?

- A Demand is perfectly inelastic and labour costs rise ☐
- B Demand is perfectly elastic and labour costs rise ☐
- C Supply is perfectly elastic and the price of a substitute good falls ☐
- D Demand is perfectly inelastic and labour costs fall ☐

[1 mark]

4.

In recent years, the EU has decided that the agricultural sector must become 'more responsive to market forces' (**The European Union Context Extract F**, line 12).

Using the data and your economic knowledge, discuss whether UK farming would benefit from greater responsiveness to market forces and less intervention by the UK government and the EU.

[25 marks]

5.**THE EUROPEAN UNION CONTEXT****Extract E: The price of health**

The European Health Insurance Card (EHIC) is issued free to EU citizens via national governments. It allows anyone entitled to state health care in their home country to receive basic medical treatment in another member state for free or at a reduced cost.	1
While there is no charge for the EHIC, insurance-based health care systems generally involve the purchase of a policy from a company which then pays for treatment for people whose medical conditions are covered.	5
The UK's National Health Service (NHS) is predominantly in the public sector and is mostly paid for out of taxation. Treatment is 'universal', available to all UK citizens, and usually to visitors as well. While there are some treatments for which charges might be made, for example, for some dental work and spectacles, a guiding principle of the founders of the NHS was that treatment should be based on 'need' rather than 'ability to pay', and provided 'free at the point of use'. In the UK there is also a private sector consisting of hospitals and other facilities. They mostly work with commercial health insurance companies, but they can undertake some work on contract for the NHS.	10
In Germany, private health care is used approximately twice as much by patients as it is in the UK, but this does not necessarily mean that patients pay directly for their treatment. Roughly one-third of German hospitals are owned by the state, another third are not-for-profit organisations and the remaining third are in the private sector. German citizens can use any hospital in the system.	15
The founders of the NHS thought that its costs would fall as living standards rose and the population became healthier. However, when the state or an insurance company acts between the patient and the health provider, the patient's price elasticity of demand for medical treatment is likely to be very low, while income elasticity of demand is likely to be high. Costs have increased due to these unusual elasticities, together with new drugs, more sophisticated medical technology, a wider range of treatments, more complex procedures and increased life expectancy.	20
	25

6.

Small, independent coffee shops face competition from large multinational companies with well-promoted brands. In the High Street of a major British city, one such independent business advertises in the following way:

'Cappuccino or Pot of Tea: £1.19 before 12 noon; £1.39 during lunch time (12 – 2.30 pm); and only 99p after 2.30 pm.'

Explain how such a pricing strategy is influenced by price elasticities of demand, revenues and costs.

[15 marks]

7.

Traditional economic theory assumes that consumers make rational decisions that maximise their economic welfare, but behavioural economists disagree.

The Government would like to improve the well-being of the population by encouraging people to adopt a healthy diet. Using your knowledge of **both** traditional economic theory **and** behavioural economics, assess alternative policies that the Government might adopt to try to achieve its objective

[25 marks]

8.

THE EUROPEAN UNION CONTEXT

Extract F: The EU milk market

Over recent decades, the governments of most industrialised countries have intervened in their agricultural markets to offer support through subsidies and other measures. In Europe, agriculture employs less than 5% of the workforce, while agricultural intervention has traditionally taken about 50% of the EU budget. 1

Aimed at limiting state spending on the dairy sector, controlling milk production, and stabilising both milk prices and producer incomes, the EU introduced a milk quota system in 1984 as part of the Common Agricultural Policy (CAP). Milk quotas place a limit on the amount of milk that a farmer can sell every year without paying a 'levy' or penalty to the EU. The CAP has forced dairy farmers to work below capacity and even to dump milk, damaging the EU's reputation for economic efficiency. 5 10

The EU plans to end milk quotas in 2015 and wants agriculture to be less influenced by government intervention and more responsive to market forces. As quotas are removed, farms might be expected to become fewer, larger and more intensive. In Spain, for example, the industry has been allowed three times as much milk output since 1993, while the number of dairy farms has fallen drastically and productivity has risen. Meanwhile, like the UK government, the Spanish government has intervened to try to negotiate new pricing contracts between farmers, food processors and retailers. There is always a risk that government intervention in such negotiations in any market can adversely affect efficiency. 15

Sources: news reports and government information, 2012

9.

When a firm increases the price of its product from £50 to £55, the total revenue generated increases from £10,000 to £11,000. Over this price range, the price elasticity of demand for the product is

A elastic.

☐

B unit elastic.

☐

C inelastic.

☐

D perfectly inelastic.

☐

[1 mark]

10.

All other things being equal, a rise in which one of the following would shift an economy's short-run aggregate supply curve to the left?

A Wage rates

☐

B Imports of consumer goods

☐

C The money supply

☐

D Labour productivity

☐

[1 mark]

11.

Inferior goods always have a

A positive price elasticity of demand.

☐

B negative income elasticity of demand.

☐

C positive cross elasticity of demand.

☐

D negative price elasticity of supply.

☐

[1 mark]

12.

If the price elasticity of supply of a good is +4.0 and its price increases by 10%, the increase in quantity supplied is

A 0.4%

☐

B 2.5%

☐

C 25%

☐

D 40%

☐

[1 mark]

13.

In 2013, two key aims of the UK Government were: to move the budget deficit towards a surplus over the course of the Parliament and to ensure that the main burden of deficit reduction would be through reduced government spending, rather than increased taxation.

Explain the possible demand-side consequences of an increase in taxation in the UK.

[15 marks]

14.

The four diagrams below show aggregate demand (AD) and short-run aggregate supply (SRAS) curves for the UK economy. All other things being equal, which one of the diagrams **A**, **B**, **C** or **D** shows the most likely effects of an increase in raw material prices and an increase in income taxes on consumers?


☐

☐

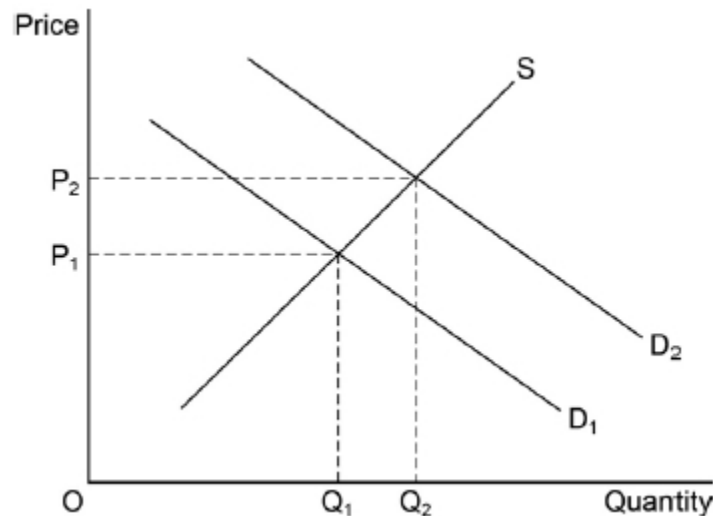
☐

☐

[1 mark]

15.

The diagram below shows the market demand and supply curves for electric light bulbs.



Assuming that electric light bulbs are a normal good, the shift in the demand curve from D_1 to D_2 and the rise in the equilibrium price from P_1 and P_2 can be explained by

- A an increase in household incomes.
- B an increase in the price of electricity.
- C a decrease in the rate of value added tax (VAT) on light bulbs.
- D the introduction of a government subsidy to the producers of light bulbs.

☐
☐
☐
☐

[1 mark]

16.

It is generally accepted that we need to adopt new ways of charging for the use of our roads. This is partly because of worsening congestion, but is also due to the reduction in revenue generated from taxes on fuels as a result of more fuel-efficient vehicles.

Assess the view that a system of road-pricing is the best way to tackle the problem of worsening traffic congestion in the UK.

[25 marks]

17.

International trade Extract B (lines 12–13) states ‘The Government last night released research suggesting a US-EU agreement sweeping away trade barriers would particularly benefit the automotive, financial and chemical sectors.’

With the help of a diagram, explain the extent to which the removal of a tariff might affect the volume of imports into the UK.

[9 marks]

18.**International trade****Extract B: Transatlantic free trade?**

David Cameron today confronted his critics by making the positive case for continuing European Union membership as he held talks with President Barack Obama over a giant US-EU trade deal that could provide a £10bn annual boost to the UK economy.	1
With his party in renewed turmoil over Europe, the Prime Minister sought to reassure the White House (where senior figures in the Obama administration have insisted they regard the UK as a crucial member of the union) that the UK are not looking to leave the EU.	5
The planned agreement would establish a free trade area between the world's two largest trading blocs, creating a transatlantic market of 800 million consumers.	
Writing in today's Wall Street Journal, Mr Cameron says: "This deal could add as much as £10bn to the UK economy and £63bn to US GDP. But the rest of the world would benefit too, with gains that could generate €100bn (£84bn) worldwide".	10
The Government last night released research suggesting a US-EU agreement sweeping away trade barriers would particularly benefit the automotive, financial and chemical sectors. It claimed the deal could be worth £380 a year for each British family.	
Karel de Gucht, the European Commissioner for Trade, has cited the deal as a prime reason for the UK staying in the EU, telling The Independent last week that it would be "clear madness" for the UK to leave in light of such a deal.	15

Source: Adapted from: © www.independent.co.uk 13 May 2013

19.

Apple sells iPhones and iPads at considerably lower prices in the USA than in the UK market, but sources the products from the same factories in the Far East.

Discuss the view that price discrimination only benefits suppliers, such as Apple.

[25 marks]

20.

It is generally accepted that we need to adopt new ways of charging for the use of our roads. This is partly because of worsening congestion, but is also due to the reduction in revenue generated from taxes on fuels as a result of more fuel-efficient vehicles.

Explain why, in the absence of government intervention, too many journeys are likely to be made by road and too few by rail.

[15 marks]

Mark schemes

1.

Relevant issues include:

- reasons why prices may differ, eg cost differences, price discrimination
- examples of price discrimination
- the ability of the producer to exert control over supply
- the ability to separate different markets, eg through time, barriers to entry
- preventing the transfer of goods or services between markets
- the significance of different price elasticities of demand
- why cost differences, eg transport costs, may lead to price differences
- why imperfect information may allow firms to charge different prices for the same product
- why product differentiation and branding may allow a supplier to charge different prices for what is essentially the same product.

The use of relevant diagrams to support the analysis should be taken into account when assessing the quality of the candidate's response to the question.

The use of examples to illustrate price discrimination should also be taken into account when assessing the quality of response.

[15]

2.

Relevant issues/logical chains of analysis include:

- defining/distinguishing between price elasticity (responsiveness of the quantity demanded to a change in price) and income elasticity of demand (responsiveness of quantity demanded to a change in income)
- (PED) The link between the consumer and price is broken by insurance and the purchasing decision is now taken by the insurance company or by the state or its agent (eg the GP). The patient will want life-saving treatment whatever the price. However some people are not members of insurance schemes or might not qualify for state provision
- assymetric information; unpredictability of medical need
- universal state provision replaces price rationing with the queue (or waiting list) insurance enables people to jump the queue
- (YED) Higher incomes make insurance more affordable
- arguable that people on higher incomes will be more aware of treatments available
- possibility of unnecessary treatments and procedures, e.g. cosmetic surgery for vanity reasons
- meaning of high/low/price/income elasticity
- appropriate use of diagrams, e.g. demand curves related to PED and YED

[10]

3.

A

[1]

Issues and areas for discussion include:

Introduction	• Definition/explanation of 'more responsive to market forces' • Basic reasons why governments of developed countries support agriculture.
Developing the response to the question (application)	NOTE: Students are not confined to discussion of direct intervention on farm prices; they can discuss government intervention anywhere along the supply chain (e.g. government attempts to modify the behaviour of supermarkets/powerful buyers), and they could then discuss effects working backwards along the chain to the farm source. • Comments from own economic knowledge or based on the data, eg • S & D theory (elasticities, shifts, potentially unstable prices; price support through quotas shifting S to left) • Possible policies for stabilising prices and incomes ◦ national government: competition policy, regulation ◦ EU level: quotas, intervention buying, buffer stocks ◦ milk as a staple foodstuff, an 'essential' ◦ effects of free trade and globalisation (imports are mentioned in Extract E) ◦ production and productivity (Extract F; further discussion of Extract D) ◦ intensity of production (mentioned in Extract F) ◦ economies of scale (Extract F)
Developing the response to the question (analysis)	• Arguments for markets, eg ◦ rationing/signalling ◦ consumer sovereignty and choice ◦ decentralisation ◦ opportunity costs ◦ efficiency ◦ problems with government failure. • Arguments against, eg ◦ market failure, externalities ◦ need for price and Income stabilisation ◦ imperfect information ◦ influence of supermarkets • changes in demand and supply conditions • globalisation, free trade • need for government to act as a broker between producers and retail sector.

Evaluation	• Market failure versus government failure • Consequences of government involvement (eg costs to the taxpayer) versus consequences of non-involvement (eg costs to the consumer; danger of a break in supply) • Free trade versus protection • Power of the supermarkets/small number of processors • Policy appropriate at national level or EU level? • Difficulties of identifying and acting for public interest/interests of consumers/producers • Unintended consequences, eg effects of quotas; milk as a raw material, impacting on many other industries; environmental side-effects of intensive farming • There is information in the data regarding Spain and UK which appears to indicate that quotas discourage economies of scale, and lifting quotas therefore increases efficiency. <i>Examiners should note that, for some of the weaker or average candidates, parts of the above represent quite sophisticated evaluation and so it is important to ensure that more basic evaluation is adequately rewarded where a genuine effort has been made to display that skill.</i>
Also give credit for	• Diagrams/An overall judgement on the issues raised.

It will only be possible for candidates to consider a few of the above. They may also discuss issues not discussed above.

[25]

6.

Relevant issues/logical chains of analysis include:

- relevant definitions, e.g. PED, total revenue, costs, price discrimination
- Price elasticity of demand can change with the time of day eg people on their way to work or on a timed lunch break have fewer alternatives and therefore lower PED. Afternoon customers are under less pressure and so have more alternatives and therefore higher elasticity. The café has large fixed costs, eg staff and therefore there are times of day when it works to full capacity and others where it is under capacity. It therefore needs to spread costs more evenly and then if it can maximise TR it will also maximise profit. Revenue is increased by increasing price when PED is inelastic and reducing price when demand is elastic. In some ways this is a similar pricing strategy to that of the low cost airlines
- This pricing strategy as an example of price discrimination
- Explanation of geometrical relationships on a diagram.
- diagrams to support the explanation, eg AR, MR, MC, price-elastic and inelastic demand.

NOTES: (1) PED, revenues and costs are mentioned in the stem of the question to assist students in focusing their answer. Do not penalise if any of these three items is not specifically discussed. Full marks can be achieved for a clear explanation which does not necessarily discuss all three of these items in any depth, although it can be expected that at least two will be necessary to convey a convincing explanation. **(2)** Scenarios other than the Cafe/Coffee Shop can be credited here if they help the explanation (e.g. on-peak/off peak rail travel can be used in a relevant way)

[15]

7.

Areas for discussion include:

- distinction between traditional economic theory, which assumes people are rational decision makers, and behavioural economic theory
- market failure and people's choice of diet, eg asymmetric information, 'unhealthy food products' as demerit goods, inequitable distribution of income
- advertising and product promotion strategies employed by the food industry and how they influence people's choices
- policies that might help to correct information problems, eg compulsory food labelling, publicity campaigns
- policies to restrict advertising that misinforms or misleads consumers
- the impact of imposing legally enforced restrictions on, for example, the fat or salt content of processed foods
- policies that can be adopted to encourage people to adopt a healthy diet, eg indirect taxes, subsidies, better information
- relevance of elasticities
- behavioural factors that might affect people's choices, eg habit, other people's choices, social norms, motivation to 'do the right thing', people give inadequate weight to the long-term consequences of their actions
- policies related to behavioural economic theory that can be used to encourage people to adopt a healthy diet, eg nudges, framing, influencing attitudes
- whether providing better information and leaving it to individuals to make their own choices would lead to an improvement in people's well-being
- whether people are 'predictably irrational' and whether government policies that do not take this into account are likely to be ineffective
- whether the individual is the best judge of their own welfare; and whether behavioural solutions are paternalistic
- the unintended consequences of various policies.

The use of relevant diagrams to support the analysis should be taken into account when assessing the quality of the candidate's response to the question.

[25]

9.

D

[1]

10.

A

[1]

11.

B

[1]

12.

D

[1]

13.**Relevant issues include:**

- different types of taxes, eg direct v indirect, progressive, proportional and regressive
- taxation as a withdrawal from the circular flow of income
- how an increase in taxation affects aggregate demand
- the relationship between aggregate demand and each of the main objectives of UK macroeconomic policy, ie unemployment, growth, inflation and the balance of payments
- the different demand-side impacts of different tax changes, eg an increase in the rate of VAT versus a rise in the top rate of income tax
- multiplier effects
- the impact of tax changes on the pattern of demand and hence resource allocation, eg raising taxes on demerit goods
- the significance of elasticities of demand.

The use of relevant diagrams to support the analysis should be taken into account when assessing the quality of the candidate's response to the question.

[15]**14.**

C

[1]**15.**

A

[1]

16.

Areas for discussion include:

- roads as a scarce resource
- the negative externalities associated with congestion, eg the longer journey times for other road users
- what is meant by road-pricing and how it might be implemented (allow both tolls and congestion charges as forms of road-pricing or as alternative policies)
- other policies that might be employed such as: higher taxes on fuels, increasing the road fund licence, building more roads, subsidising public transport, investing in and improving public transport
- the extent to which roads display the characteristics of a public good and how has this been affected by developments in technology.
- congestion is most prevalent on certain roads and at certain times of the day
- how road-pricing might be implemented, eg charging drivers a price for each mile travelled with different prices for different roads and for different times of the day, perhaps mentioning automatic number plate recognition systems
- setting up tolls on major roads with the toll charge varying between peak and off-peak times
- how higher taxes on fuels would help to reduce congestion and the relevance of price elasticity of demand
- how subsidising, for example, bus and rail transport, will help to reduce congestion and the relevance of cross elasticity of demand
- the budgetary and cost implications of the different options
- possible unintended consequences of the different methods, eg the impact of road pricing on city centres, such as empty shops, higher prices for products as transport costs rise
- equity arguments, eg are indirect taxes regressive, should the road user pay or the taxpayer, the impact of the different policies on the poorest members of society, town versus country dwellers, commuters and businesses
- the likelihood of government failure, eg inadequate information means that the government may set an inappropriate price for using roads, eg a price that doesn't reflect the true cost of congestion, government policy is likely to be affected by public opinion and the reactions of voters.

The use of relevant diagrams to support the analysis should be taken into account when assessing the quality of the candidate's response to the question.

[25]

17.

Level of response	An answer that:	Max 9 marks
3	• is well organised and develops one or more of the key issues that are relevant to the question • shows sound knowledge and understanding of relevant economic terminology, concepts and principles • includes good application of relevant economic principles and/or good use of data to support the response • includes well-focused analysis with a clear, logical chain of reasoning • includes a relevant diagram that will, at the top of this level, be accurate and used appropriately.	7-9 marks
2	• includes one or more issues that are relevant to the question • shows reasonable knowledge and understanding of economic terminology, concepts and principles but some weaknesses may be present • includes reasonable application of relevant economic principles and/or data to the question • includes some reasonable analysis but it might not be adequately developed and may be confused in places • may include a relevant diagram.	4-6 marks
1	• is very brief and/or lacks coherence • shows some limited knowledge and understanding of economic terminology, concepts and principles but some errors are likely • demonstrates very limited ability to apply relevant economic principles and/or data to the question • may include some very limited analysis but the analysis lacks focus and/or becomes confused • may include a relevant diagram but the diagram is not used and/or is inaccurate in some respects.	1-3 marks

A standard tariff diagram is expected, illustrating the volume of imports with and without a tariff.

Relevant issues include:

- a tariff as a tax on imports
- removing the tariff makes imports more competitive
- the impact on the demand for imports and the supply of home produced goods
- the relevance of elasticities.

[9]

19.**Areas for discussion include:**

- the nature and examples of price discrimination
- allows the producer to convert consumer surplus into producer surplus
- how price discrimination allows the producer to increase revenue and profit compared to a single price
- relevance of price elasticity of demand
- how price discrimination enables the producer to reduce fixed costs by spreading demand more evenly, eg peak and off-peak rail fares
- better capacity utilisation by firms will lower costs and may lead to lower prices for consumers
- why price discrimination may increase total sales and generate economies of scale
- the use of price discrimination as a barrier to entry, reducing competition
- why price discrimination almost certainly means that some consumers will face a higher price than if there was a single price
- the use of price discrimination to cross-subsidise loss-making services
- some consumers will benefit from lower prices and products that might not otherwise be supplied
- equity considerations related to the redistribution of income that results from price discrimination.

The use of relevant diagrams to support the analysis should be taken into account when assessing the quality of the candidate's response to the question.

The use of examples to illustrate price discrimination should also be taken into account when assessing the quality of response.

[25]**20.****Relevant issues include:**

- sources of market failure in transport, eg externalities, roads as a quasi-public good
- examples of externalities associated with journeys by road and rail, eg congestion and longer journey times for other road users, pollution and associated health problems, environmental damage
- explaining why roads may exhibit some of the characteristics of a public good, ie they are, up to a point, non-rival and may be non-excludable.
- why, in the absence of government intervention, the existence of negative externalities means that the user will not bear the full cost of the activity
- free market equilibrium level of output ($MPB=MPC$) and the social optimum level of output ($MSB=MSC$)
- negative externalities associated with rail journeys are likely to be less than for journeys by road, hence road journeys will be under-priced by more than rail journeys, ie there will be a greater divergence between the marginal social cost and the marginal private cost for road journeys than rail journeys
- rail companies charge for the use of the rail network but, in most cases, road users are not directly charged for the use of roads
- taxes imposed on the motorist mean that some, or all, of the costs of building and maintaining the road network are borne by the motorist.

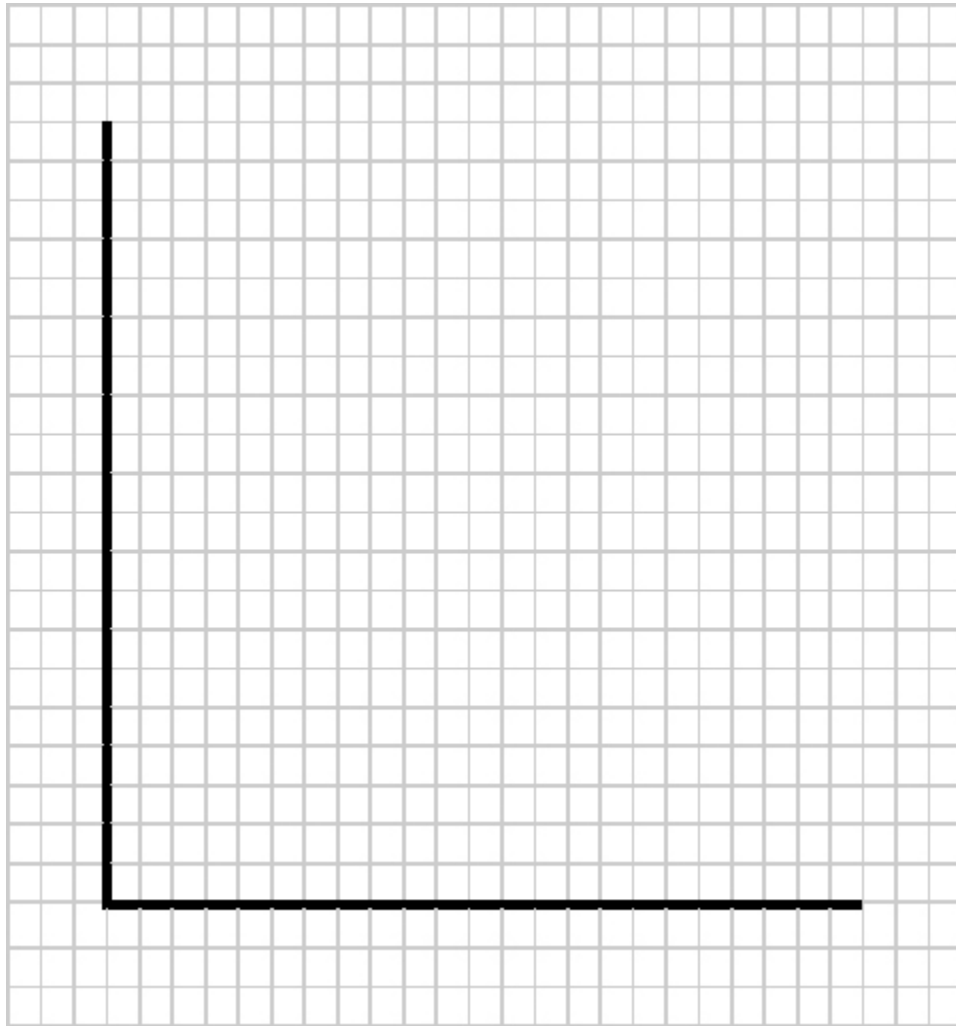
The use of relevant diagrams to support the analysis should be taken into account when assessing the quality of the candidate's response to the question.

[15]

1.

Extract E (lines 2–3) states: 'The minimum age for buying alcohol is 18, although in some countries, such as the US, the minimum age is 21'.

Draw a diagram to show the impact on the market for alcohol of raising the age for buying alcohol in the UK from 18 to 21.



[4 marks]

2.

The price elasticity of demand for games consoles is -1.2. It can be concluded that a 10% reduction in their price would lead to a percentage change in demand of

- A -8.3%
- B -12.0%
- C +8.3%
- D +12.0%

☐☐☐☐

[1 mark]

3.

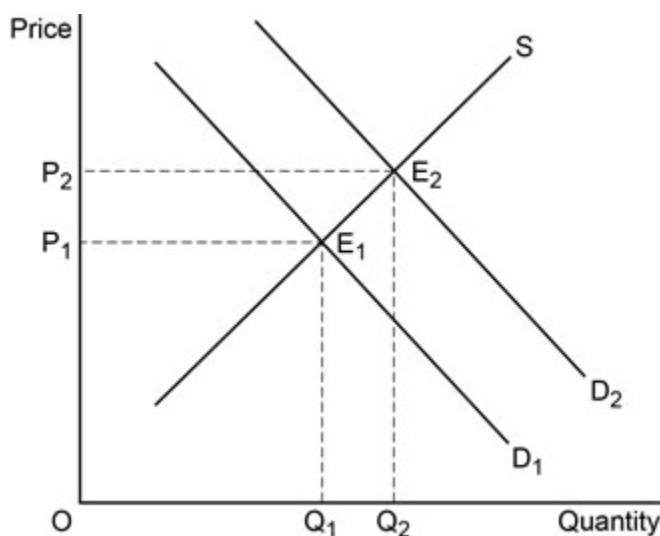
Inequality Extract F (lines 9–10) states that ‘concentrating income in fewer and fewer hands eventually leads to bubble economies in which the prices of assets, such as houses and shares, rise continuously’.

With the help of a diagram, explain how growing inequality might lead to a persistent rise in the price of houses.

[9 marks]

4.

The diagram below shows the demand curves (D_1 and D_2) and the supply curve (S) in the market for good X. The initial market equilibrium is at E_1 .



The increase in market demand from D_1 to D_2 results in a new market equilibrium at E_2 . The market mechanism that leads to the establishment of the new equilibrium is based on

A excess demand for good X at the initial price of P_1 .

☐

B excess demand for good X at the new price P_2 .

☐

C excess supply of good X at the initial price of P_1 .

☐

D excess supply for good X at the new price P_2 .

☐

[1 mark]

5.

Inequality

Extract F: Against inequality

The main outcome of the post-1980 experiment in neo-liberal (market) economics has been an economy that is much more divided and unhealthy, both of which are closely related. There are three powerful reasons why the global financial crisis of 2008 and 2009 had its roots in excessive concentrations of income and wealth. 1

First, above a certain limit of inequality, economies develop a natural tendency to deflation. In the UK and US, by cutting the purchasing power to buy the extra output being produced, the long wage squeeze has created consumer societies without enough consumers. The solution has been to allow an unsustainable increase in private debt to fill the gap. 5

Second, concentrating income in fewer and fewer hands eventually leads to bubble economies in which the prices of assets, such as houses and shares, rise continuously until the 'bubbles' eventually burst. From the early 1990s, the growing inequality created a global mix of increasing company profits, excessive bank lending and rapidly growing personal wealth, all of which contributed to the bubbles in property and share prices. This eventually brought the global economy to its knees. 10

Finally, excessive concentrations of wealth create dangerous concentrations of economic power. Corporate lobby groups, which promote the interests of the financial sector, are able to promote measures such as weak financial regulation by the state and lower taxes on the wealthy. 15

Source: Copyright Guardian News & Media Ltd 2011

6.

At the initial market equilibrium, the income elasticity of demand for fresh chickens is +1.5, and the price elasticity of supply is +1.0. Then there is a 5% increase in consumers' income.

Which one of the following combinations, **A**, **B**, **C** or **D**, is most likely to show the changes in the market equilibrium price and quantity?

	Price	Quantity	
A	Higher	Unchanged	☐
B	Higher	Higher	☐
C	Unchanged	Unchanged	☐
D	Lower	Higher	☐

[1 mark]

7.

In 2018, the UK Government will impose a new tax on sugary drinks, aimed at tackling obesity. Behavioural economists believe that taxation alone is unlikely to be very effective in reducing consumption. By 2050, obesity is predicted to affect 60% of adult men, 50% of adult women and 25% of children. It is associated with a range of health problems including type 2 diabetes, cardiovascular disease and cancer.

Evaluate the view that imposing a tax is the most effective government policy for reducing the market failures arising from overconsumption of unhealthy food and drink.

[25 marks]

The World Energy Market

Extract A: What is OPEC?

- 1 OPEC is an organisation of 13 oil-producing countries. In 2015, OPEC accounted for an estimated 42% of global oil production and 73% of the world's 'proven' oil reserves, enabling OPEC to influence the price of oil. The current members of OPEC are: Algeria, Angola, Ecuador, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates and Venezuela.

OPEC is often cited as a classic example of a cartel, a group of independent producers who collude to increase their collective profits by limiting supply to raise prices. However, OPEC's power is reduced by the expansion of non-OPEC energy sources and by the temptation for individual OPEC countries to exceed production ceilings.

Extract B: The market for energy is changing

- 1 The energy industry is going through a period of profound change. Concerns about carbon emissions and global warming have led to policies that are shifting production away from coal towards natural gas and renewable energy. On the demand side, weaknesses in the global economy have meant that energy consumption has only grown slowly, but that will change if global economic growth picks up. The supply of energy has been affected by technological advances that have altered the range, availability and relative cost of producing different fuels. In the US, the shale revolution, allowing oil and gas to be extracted from shale by fracking, has opened up vast, new supplies of these fossil fuels. Other improvements in technology have stimulated growth in the output of renewable energy, particularly wind and solar power.
- 10 The flip side of this is a fall in the demand for coal.

Changes in the supply and demand for different fuels have significant effects on relative prices. Price changes play a key role in promoting adjustments in energy markets which affect the pattern of consumption and investment in energy.

Extract C: Trends in the world market for energy

Figure 1 Energy consumption by fuel, million tonnes

	2006	2009	2012	2015	2016
Oil	3 984	3 956	4 176	4 341	4 418
Natural gas	2 573	2 676	2 997	3 147	3 204
Coal	3 294	3 476	3 817	3 785	3 732
Nuclear energy	635	614	559	583	592
Hydroelectricity	688	737	832	883	910
Other renewables	93	144	239	367	420
Total	11 267	11 603	12 620	13 106	13 276

Note: Oil consumption is measured in million tonnes; other fuels in million tonnes of oil equivalent.

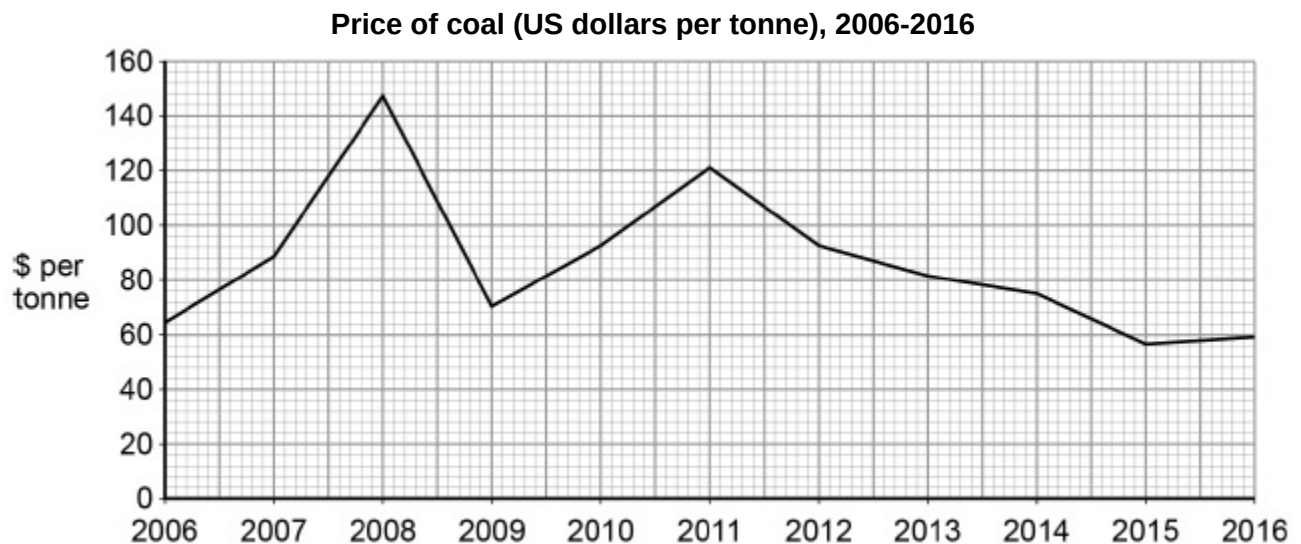
Oil, natural gas and coal are fossil fuels.

Other renewables include energy generated from the following renewable sources: wind, solar, geothermal, biomass and waste.

Figure 2 Average cost of producing oil (US dollars per barrel), March 2016

	Cost (\$)
UK	44.33
Nigeria	28.99
Venezuela	27.62
US shale	23.35
US non-shale	20.99
Saudi Arabia	8.98

Figure 3 The price of coal



Extract D: Falling oil prices hit the oil-exporting countries hard

- 1 In 2014, despite the rapid fall in the price of oil, Saudi Arabia and the other OPEC countries did not cut production. Some believe that they wanted to make shale oil production in the US unprofitable to weaken a growing threat to OPEC's domination of the world oil market.

- 5 A fall in oil prices leads to a contraction of the oil sector in oil-exporting countries and also has other effects on their economies. For example, in the Middle East and North Africa, oil-based revenues often account for more than half of government revenue. A significant loss of government revenue may require a substantial reduction in public spending. A decline in oil prices reduces export revenues, leading to a deterioration in the current account of their balance of payments, usually causing a depreciation in their exchange rates. This is an important
- 10 mechanism through which the economy can adjust, but it makes imports more expensive, adds to inflationary pressures and is likely to reduce living standards. It may also make it difficult to attract capital inflows and to finance both the balance of payments and budget deficits.

- 15 The Nigerian economy has been hit hard by low oil prices and falling oil production. The country went into recession in 2016, with real national income contracting by 1.5%. The annual inflation rate doubled to 18.6%, reflecting the weakness of the Nigerian currency. Even after cuts in capital spending, the budget deficit increased from 3.5% of GDP in 2015 to 4.7% of GDP in 2016.

20 Venezuela derives over 95% of its export earnings and almost half of government revenue from oil-related sectors. Falling oil prices aggravated Venezuela's economic crisis and it is estimated that the economy contracted by 10% in 2016 after a similar fall in real GDP in 2015. In 2016, its inflation rate was around 275%. Worsening shortages of food, medicines and other consumer goods are a symptom of the country's very fragile economy. Deteriorating public finances mean that Venezuela is a high-risk debtor, making it hard for the country to attract foreign capital. These difficulties are not all down to the fall in the price of oil. Nevertheless, a fall in the oil price makes it harder to deal with problems that are common to many less economically developed countries.

Extract E: Crisis? What crisis?

- 1 In December 2016, the members of OPEC and 11 non-OPEC countries, including Russia, agreed to cut production to 'stabilise' the oil market and raise prices. The initial agreement was for six months but has since been extended for a further nine months. So far, compliance with the production cuts has been very high at 90% and oil prices have stabilised.
- 5 The fall in the price of oil has driven some US fracking companies out of business but it has not been as damaging as predicted. Many companies have learnt how to extract more shale oil from each rig, reducing the cost per barrel. Increases in productivity reduce the break-even price of extracting oil from shale by fracking. If oil prices rise, output and investment in the industry are likely to increase again.
- 10 Recently, growth in the world economy has picked up. This will boost the demand for oil and put upward pressure on oil prices. In the long run, developments in technology that lower the cost of supplying renewable energy and producing electric cars, buses and lorries will reduce the demand for oil. A high price for oil should incentivise such developments.

INVESTIGATION

Scenario

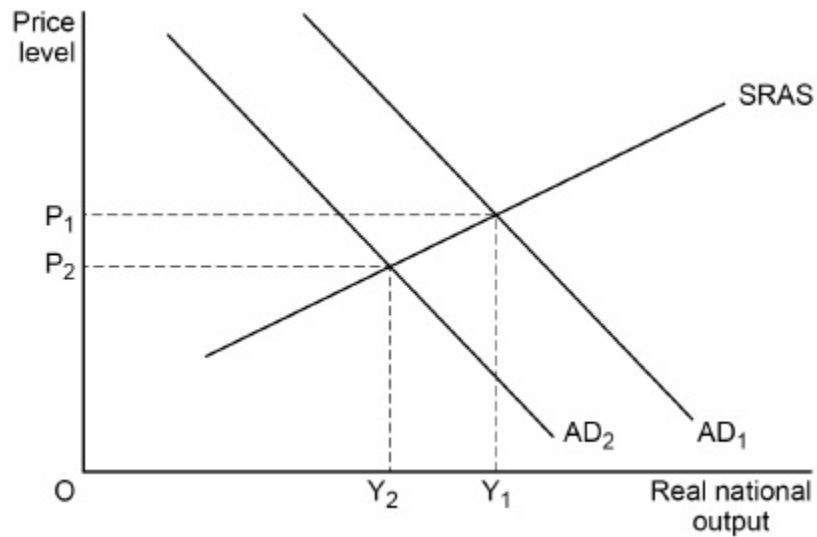
You are an economist working for OPEC (The Organisation of Petroleum Exporting Countries). You have been asked to produce a review of the world energy market. As part of this investigation, you are to provide answer to the following question.

After considering **Extract E**, and the original evidence in **Extracts A, B, C and D**, would you recommend to the members of OPEC that they continue to restrict the supply of oil to try to raise the world market price of oil? Justify your recommendation.

[25 marks]

9.

The diagram below shows two aggregate demand (AD) curves and the short-run aggregate supply (SRAS) curve for an economy.



All other things being equal, the change in real national output from Y_1 to Y_2 is most likely to have been caused by an increase in the

- A government's budget deficit.
- B level of interest rates.
- C size of the labour force.
- D volume of exports.

☐
☐
☐
☐

[1 mark]

10.

The price of good Y, a substitute for good X, rises from 75p to £1. As a result, the quantity of demand for good X rises from 3 million units to 5 million units per month.

What is the value of the cross elasticity of demand for good X with respect to good Y?

- A +0.5
- B -0.5
- C +2.0
- D -2.0

☐
☐
☐
☐

[1 mark]

11. INVESTIGATION

Scenario

You are an economist working for the Ministry of Housing, Communities and Local Government (MHCLG).

You have been asked to investigate the state of the UK housing market.

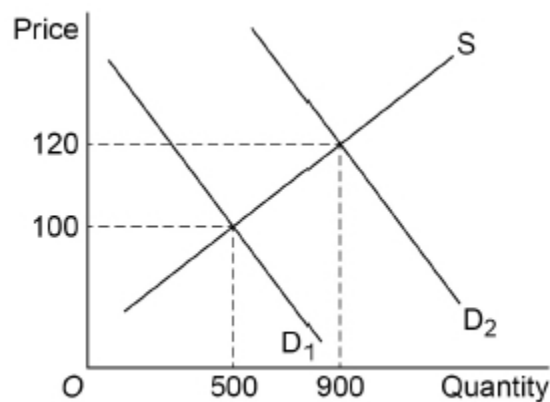
As part of this investigation, you are to provide answers to three questions.

Referring to the **Extracts A, B, C and D**, use them and your knowledge of economics to help you answer this question.

Explain the likely causes of the main changes in house prices that have taken place between 2007 and 2017.

[15 marks]

12. The diagram below shows two market demand curves (D_1 and D_2) and the market supply curve (S), for Good X.



The price elasticity of supply of Good X when the demand curve shifts from D_1 to D_2 is

- A +0.25
- B +2.0
- C +4.0
- D +7.5

☐☐☐☐

[1 mark]

13.

A large Asian steel-producing country dumps its surplus steel on the world market. All other things being equal, if the demand for steel is price elastic, the most likely consequence for the EU market for steel will be to

A reduce excess capacity in the EU steel-making industry.

☐

B reduce the value of steel imports into the EU.

☐

C shift the demand curve for EU steel workers to the left.

☐

D shift the supply curve of EU steel workers to the left.

☐

[1 mark]

14.

Extract B (line 18) states that the global trade in sand has been 'made possible by cheaper transportation'.

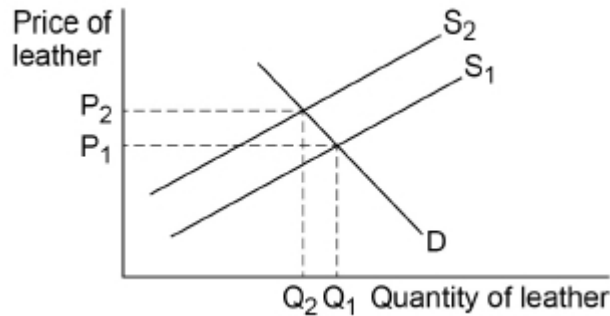
With the help of a diagram, explain how cheaper transportation **and** a construction boom in East Asia have led to growth in the market for sand.

[9 marks]

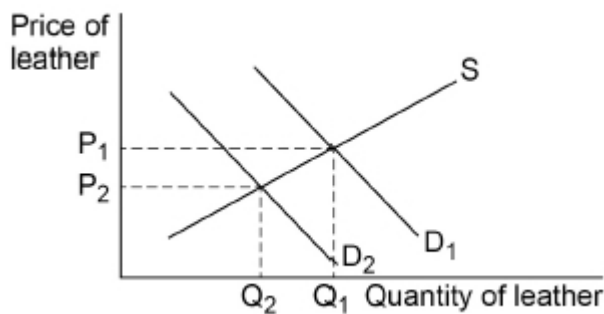
15.

Beef and leather are in joint supply. Changes in farming methods have resulted in a significant fall in the price of chicken, a substitute for beef. All other things being equal, which one of the following diagrams, **A**, **B**, **C**, or **D**, best illustrates the effects of the fall in the price of chicken on the market for leather?

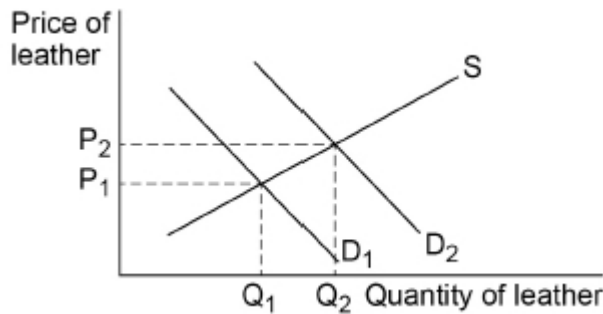
A



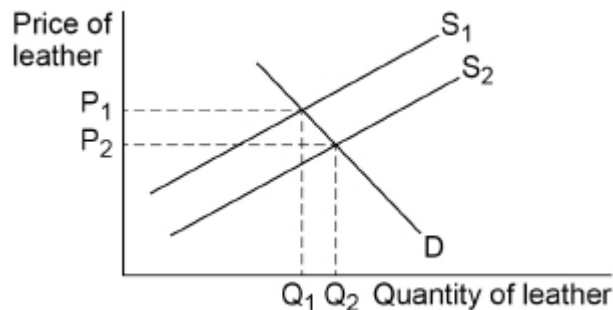
B



C



D



[1 mark]

16.

'Each time the Government imposes a minimum price or wage, the result is almost always excess supply. What matters is the extent to which this is a problem.'

Explain how the impact of a minimum price for a good or service is affected by its price elasticity of demand and its price elasticity of supply.

[15 marks]

17. Explain how the data in **Extract D** (Figure 2) show that in the UK, between 2004 and 2017, changes in the demand for rail travel contributed to changes in the price of rail travel.

[4 marks]

18. Explain how the data in **Extract A** (Figures 1 and 2) show that expansion in the global sand market is leading to prices of construction sand rising in real terms.

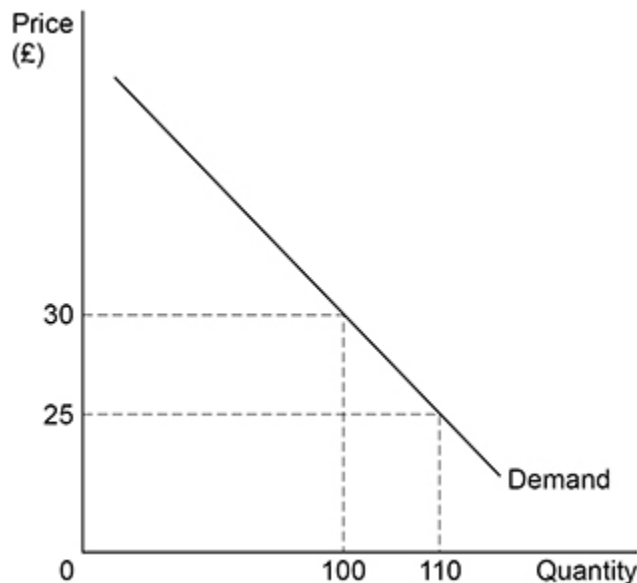
[4 marks]

19. In December 2018, the Competition and Markets Authority (CMA) announced a range of policies to prevent firms charging existing customers more than new customers. Firms supplying financial services, mobile phones and broadband are no longer allowed to discriminate against loyal customers renewing their contracts.

Assess the view that price discrimination is always damaging.

[25 marks]

20. The diagram below shows the demand curve for a firm's scarves.



Which one of the following statements is true when the price of scarves is reduced from £30 to £25?

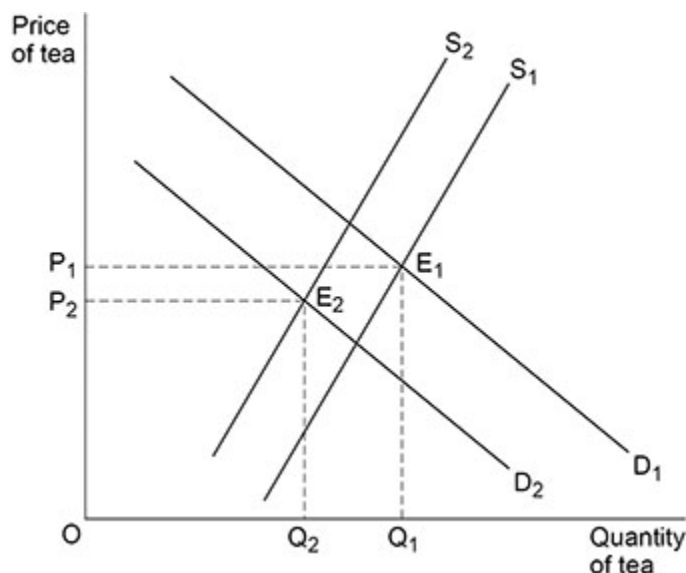
- A Demand for scarves is price elastic.
- B Price elasticity of demand is -0.5 .
- C The firm's total revenue falls.
- D The firm's total revenue increases.

☐☐☐☐

[1 mark]

21.

The diagram below shows two demand (D_1 and D_2) curves and two supply (S_1 and S_2) curves in the market for tea.



Tea and coffee are substitutes. All other things being equal, which one of the following is the most likely explanation of the move from E_1 to E_2 in the market for tea?

- A A fall in the price of tea and a rise in productivity in coffee production ☐
- B A rise in the price of coffee and an increase in the cost of producing tea ☐
- C An increase in competition in the market for tea and a fall in the price of coffee ☐
- D The removal of a subsidy to tea producers and a fall in the price of coffee ☐

[1 mark]

22.

Vaping, the use of e-cigarettes, is argued by many UK health experts to be a much less harmful substitute than smoking tobacco cigarettes. E-cigarettes contain fewer harmful chemicals such as tar, but they still contain addictive nicotine. The industry has been attacked for promoting sales amongst teenagers. This has led to San Francisco banning the sale of e-cigarettes.

Explain how the concept of cross elasticity of demand can be used to understand the relationship between markets.

[15 marks]

23.

Which one of the following is a reason why the supply of cars is likely to be price elastic in the short run when the price of cars increases?

- A Car manufacturers' stocks of unsold cars are low
- B The demand for cars is also price elastic
- C The marginal cost of producing cars increases significantly with output
- D There is considerable spare capacity in the car industry

☐☐☐☐

[1 mark]

24.

Explain the factors that a commercial aircraft manufacturer, such as Boeing or Airbus, should consider when forecasting the future sales of its aircraft.

[15 marks]

25.

Essay 1

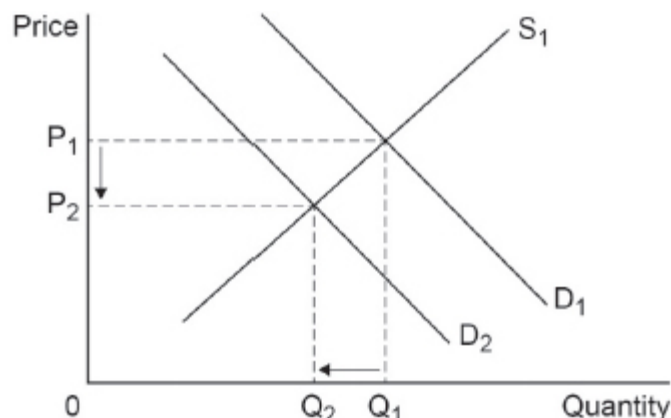
The government has promised that everyone will be able to access superfast broadband by 2025. As more people have switched to studying and working remotely, good Internet connections have become more important. Low-income households have difficult choices to make between high-speed Internet and essential items such as food, heating and clothing.

Explain how the price mechanism allocates resources in a market economy.

[15 marks]

Mark schemes

1. The correct diagram involves a decrease in demand/shift to the left of the demand curve resulting in a decrease in quantity sold and a decrease in price.



Response	Max 4 marks
Accurately drawn D/S diagram showing a leftwards shift in D, old and new equilibrium price and quantity, eg P_1Q_1 , P_2Q_2 , with both axes and all curves and coordinates correctly labelled (arrows not needed).	4 marks
Accurately drawn D/S diagram showing a leftwards shift in D with one label missing or incorrect (on axis or curve). OR Accurately drawn D/S diagram showing a leftwards shift in D with one coordinate missing (P or Q).	3 marks
Accurately drawn D/S diagram showing a leftwards shift in D with two labels or coordinates missing/incorrect. OR Accurately drawn D/S diagram showing an initial equilibrium point and a leftwards shift in D but <u>also</u> a leftwards shift in S.	2 marks
Accurately drawn D/S diagram showing an initial equilibrium point with both axes, both original curves and both coordinates correctly labelled, eg P_1Q_1 . OR Accurately drawn D/S diagram showing an initial equilibrium point and a leftwards shift in D but <u>also</u> a leftwards shift in S <u>and</u> one or two labels missing.	1 mark

Notes: Horizontal axis allow: Quantity of alcohol, Quantity or Q (but not QD or QS or output). Vertical axis allow: Price, P, £ or some monetary symbol (but not Price level).

[4]

2. D

[1]

3.

Level of response	An answer that:	Max 9 marks
3	• is well organised and develops one or more of the key issues that are relevant to the question • shows sound knowledge and understanding of relevant economic terminology, concepts and principles • includes good application of relevant economic principles and/or good use of data to support the response • includes well-focused analysis with a clear, logical chain of reasoning • includes a relevant diagram that will, at the top of this level, be accurate and used appropriately.	7-9 marks
2	• includes one or more issues that are relevant to the question • shows reasonable knowledge and understanding of economic terminology, concepts and principles but some weaknesses may be present • includes reasonable application of relevant economic principles and/or data to the question • includes some reasonable analysis but it might not be adequately developed and may be confused in places • may include a relevant diagram.	4-6 marks
1	• is very brief and/or lacks coherence • shows some limited knowledge and understanding of economic terminology, concepts and principles but some errors are likely • demonstrates very limited ability to apply relevant economic principles and/or data to the question • may include some very limited analysis but the analysis lacks focus and/or becomes confused • may include a relevant diagram but the diagram is not used and/or is inaccurate in some respects.	1-3 marks

A demand and supply diagram is expected, showing a rightward shift of the demand curve leading to an increase in both the price and quantity sold.

Relevant issues include:

- relationship between income and mortgage finance
- as inequality increases, the better-off members of society can obtain larger mortgages
- more borrowing increases the demand for houses
- the inelastic supply of houses, particularly in the short run
- excess demand for houses, particularly at the top end of the market
- how excess demand at the top end of the market also affects prices at the bottom end
- houses as an asset and house purchase as a speculative activity
- rising house prices leading to higher demand, at least until ‘the bubble’ bursts.

[9]

4.

A

[1]

6.

B

[1]

7.

Areas for discussion include:

- the existence of market failure
- explanation of how taxes reduce consumption
- distinction between specific and ad valorem tax
- the argument that if demand is inelastic, this will result in larger tax revenues which can be put towards public health spending to the same effect
- the extent to which the burden of the sugar tax will be passed on to consumers rather than hitting profits of producers
- the likely extent to which producers change their recipes to avoid the tax
- the fact that the tax only applies to some sugary drinks, and not others (eg milk-based or fruit-based drinks), and does not apply to sugary foods such as chocolate bars
- unintended consequences (positive and negative) which have emerged (or could emerge) from the policy
- alternative policies such as a minimum price per litre, a rationing of quantity, a ban in school vending machines, quantitative limits on the sugar added to drinks in the production process, subsidy for healthier alternatives
- policies to increase uptake of healthier alternatives such as water or milk including information campaigns, subsidies, free school milk, etc.
- whether more prominent labelling (perhaps using a “teaspoon of sugar” measure) is more or less effective
- whether consumer drinks choice is an appropriate area of interference by the Government, or alternatively evidence of the “nanny state”
- whether insights from behavioural economics offer possible solutions, e.g. nudge economics, social norms
- government failure arguments

The use of relevant diagrams to support the analysis should be taken into account when assessing the quality of the candidate’s response to the question.

Level of response	Response	Max 25 marks
5	Sound, focused analysis and well-supported evaluation that: - is well organised, showing sound knowledge and understanding of economic terminology, concepts and principles with few, if any, errors - includes good application of relevant economic principles to the given context and, where appropriate, good use of data to support the response - includes well-focused analysis with clear, logical chains of reasoning - includes supported evaluation throughout the response and in a final conclusion.	21 – 25 marks
4	Sound, focused analysis and some supported evaluation that: - is well organised, showing sound knowledge and understanding of economic terminology, concepts and principles with few, if any, errors - includes some good application of relevant economic principles to the given context and, where appropriate, some good use of data to support the response - includes some well-focused analysis with clear, logical chains of reasoning - includes some reasonable, supported evaluation.	16 – 20 marks
3	Some reasonable analysis but generally unsupported evaluation that: - focuses on issues that are relevant to the question, showing satisfactory knowledge and understanding of economic terminology, concepts and principles but some weaknesses may be present - includes reasonable application of relevant economic principles to the given context and, where appropriate, some use of data to support the response - includes some reasonable analysis but which might not be adequately developed or becomes confused in places - includes fairly superficial evaluation; there is likely to be some attempt to make relevant judgements but these are not well-supported by arguments and/or data.	11 – 15 marks
2	A fairly weak response with some understanding that: - includes some limited knowledge and understanding of economic terminology, concepts and principles but some errors are likely - includes some limited application of relevant economic principles to the given context and/or data to the question - includes some limited analysis but it may lack focus and/or become confused - includes some evaluation which is weak and unsupported.	6 – 10 marks
1	A very weak response that: - includes little relevant knowledge and understanding of economic terminology, concepts and principles - includes application to the given context which, at best, is very weak - includes attempted analysis which is weak and unsupported.	1 – 5 marks

[25]

Level of response	Response	Max 25 marks
5	Sound, focused analysis and well-supported evaluation that: - is well organised, showing sound knowledge and understanding of economic terminology, concepts and principles with few, if any, errors - includes good application of relevant economic principles and, where appropriate, good use of data to support the response - includes well-focused analysis with clear, logical chains of reasoning - includes supported evaluation throughout the response and in a final conclusion.	21 – 25 marks
4	Sound, focused analysis and some supported evaluation that: - is well organised, showing sound knowledge and understanding of economic terminology, concepts and principles with few, if any, errors - includes some good application of relevant economic principles and, where appropriate, some good use of data to support the response - includes some well-focused analysis with clear, logical chains of reasoning - includes some reasonable, supported evaluation.	16 – 20 marks
3	Some reasonable analysis but generally unsupported evaluation that: - focuses on issues that are relevant to the question, showing satisfactory knowledge and understanding of economic terminology, concepts and principles but some weaknesses may be present - includes reasonable application of relevant economic principles and, where appropriate, some use of data to support the response - includes some reasonable analysis but which might not be adequately developed or becomes confused in places - includes fairly superficial evaluation; there is likely to be some attempt to make relevant judgements but these aren't well-supported by arguments and/or data.	11 – 15 marks
2	A fairly weak response with some understanding that: - includes some limited knowledge and understanding of economic terminology, concepts and principles but some errors are likely - includes some limited application of relevant economic principles and/or data to the question - includes some limited analysis but it may lack focus and/or become confused - includes some evaluation which is weak and unsupported.	6 – 10 marks
1	A very weak response that: - includes little relevant knowledge and understanding of economic terminology, concepts and principles - includes application which, at best, is very weak - includes attempted analysis which is weak and unsupported - includes attempted evaluation which is weak and unsupported.	1 – 5 marks

Relevant issues and areas for discussion include:

- OPEC, as the dominant supplier, has some degree of monopoly power
- the ability of OPEC to have a significant impact on the overall supply of oil and hence its price
- the implications of the current cuts being achieved with the support of 11 non-OPEC oil producers
- the impact on revenues of raising the price when the demand for oil is relatively price inelastic
- the problem of deciding the quotas for each individual member of OPEC
- the tensions that operate in a cartel, ie collusion leading to joint profit maximisation but the short-run benefits to the individual producer of cheating on the agreement
- the significance of other producers who are not party to the agreement, eg the shale-oil and shale-gas industry in the US
- the long-run effects of a high price on exploration and the development of non-OPEC sources of supply, affecting the power of OPEC
- the effects of a high oil price on the development of other sources of energy, particularly renewables
- the effects of a high oil price on other related markets and hence the long-run demand for oil, eg electric vehicles, insulation and energy-saving measures
- if it can be achieved, the benefits of a high oil price for OPEC members, perhaps referring to some of the issues raised in the previous question
- the problems generated through instability in the price of oil
- should OPEC be aiming to achieve a stable, rather than a high, price for oil
- should OPEC allow the oil price to fall to drive competitors out of the market, eg the relatively high-cost producers of shale oil
- why the price of oil will affect each member of OPEC differently, eg each has a different break-even price and some rely on oil revenues more than others
- the consequences of a high oil price for the world economy and the impact of a slowdown in the world economy on oil producers
- political and social considerations.

Good answers are likely to identify both costs and benefits to the members of OPEC that would result from actions designed to restrict supply and raise the price of oil. They are also likely to consider the short-run and long-run consequences for the oil producers generated through the operation of the price mechanism and the feasibility of OPEC restricting supply in both the short run and the long run. The response should include a supported recommendation which could be in favour of action designed to raise, lower or allow market forces to determine the price of oil.

If a candidate's response includes discussion of the general welfare implications of OPEC restricting output to raise the price of oil, this can be given some credit. Similarly, discussion of the effects on oil consumers and the world economy can be rewarded. However, the context of the question means that discussion ought to focus on the costs and benefits to members of OPEC. If this is not addressed, the analysis is not well focused and the evaluation is likely to be limited.

A response that does not give any consideration to the impact of restricting the supply of oil upon the members of OPEC is unlikely to demonstrate the skills needed to achieve level 4.

The use of relevant diagrams to support analysis should be taken into account when assessing the quality of a candidate's response to the question.

An answer that does not include any evaluation or a supported recommendation must not be awarded more than 13 marks.

[25]

9.

B

[1]

10.

C

[1]

11.

Level of response	Response	Max 15 marks
3	A good response provides an answer that: - is well organised and develops a selection of the key issues that are relevant to the question - shows sound knowledge and understanding of economic terminology, concepts and principles with few, if any, errors - includes good application of relevant economic principles and, where appropriate, good use of data to support the response - includes well-focused analysis with clear, logical chains of reasoning.	11 – 15 marks
2	A reasonable response provides an answer that: - focuses on issues that are relevant to the question - shows satisfactory knowledge and understanding of economic terminology, concepts and principles but some weaknesses may be present - includes reasonable application of relevant economic principles and, where appropriate, some use of data to support the response - includes some reasonable analysis but which might not be adequately developed or becomes confused in places.	6 – 10 marks
1	A weak response provides an answer that: - has one or more relevant issues identified - has some limited knowledge and understanding of economic terminology, concepts and principles but some errors are likely - has very limited application of relevant economic principles and/or data to the question - might have some limited analysis but it may lack focus and/or become confused.	1 – 5 marks

Remember: AO4, i.e. evaluation, is not being assessed through this question.

Relevant issues include:

- the distinction between nominal and real house prices; given the data, most students are likely to focus on causes of changes in nominal house prices
- use of the data in Figure 4 showing the changes in house prices over the period
- the role of the demand for and supply of houses as causes of changes in house prices
- determinants of the demand for houses, eg availability of mortgages, cost of mortgages, required loan-to-value ratios, deposit required, income, other factors affecting affordability, confidence and expectations, speculation and property price bubbles, government support, tax changes affecting the property market (may also affect supply)
- determinants of the supply of houses, including factors that determine:
 - long-term changes in the housing stock, eg building new houses, change of use, supply of building land, technological change
 - short-term changes in the flow of houses available to buy, eg building new houses and existing owners' willingness to put their property on the market
- elasticity of demand and supply of houses and their significance to house price fluctuations
- possible reasons why the average house price fell by around 15% in 2008, e.g. linked to the financial crisis, availability of credit, confidence and the general state of the economy
- possible reasons why the average house price changed little in nominal terms between 2009 and 2012 – demand and supply were both subdued, eg the hangover from the financial crisis, little growth in nominal incomes/falling real incomes, rising unemployment, but low interest rates and low levels of house building
- possible reasons for the substantial rise in the average price of a house between 2012 and 2017 (+34%), e.g. sustained period of very low interest rates, mortgage finance more readily available, economy growing and unemployment falling, returning confidence and expectations of house prices rising further in the future, the role of the Finance For Lending scheme, the Help to Buy Scheme, changes in SDLT, population/households growing more rapidly than the supply of new properties, planning and other government restrictions on the supply of building land, large house builders 'sitting on' land that could have been used for building new homes
- distinction between those factors that caused short-term changes in the average house price between 2007 and 2017 and those that resulted in a general upward trend in the nominal average house price
- consideration of causes of differences in the change in the average house price in different regions of the UK.

The use of relevant diagrams to support analysis should be taken into account when assessing the quality of a student's response to the question.

[15]

12.

C

[1]

13.

C

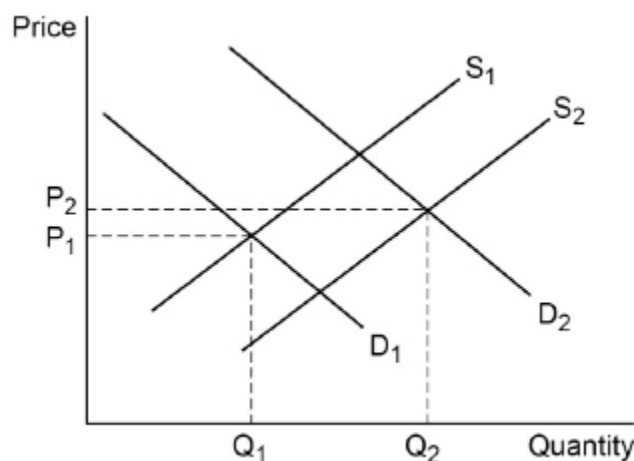
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14.

Level of response	Response	Max 9 marks
3	- is well organised and develops one or more of the key issues that are relevant to the question - shows sound knowledge and understanding of relevant economic terminology, concepts and principles - includes good application of relevant economic principles and/or good use of data to support the response - includes well-focused analysis with a clear, logical chain of reasoning - includes a relevant diagram that will, at the top of this level, be accurate and used appropriately.	7 – 9 marks
2	- includes one or more issues that are relevant to the question - shows reasonable knowledge and understanding of economic terminology, concepts and principles but some weaknesses may be present - includes reasonable application of relevant economic principles and/or data to the question - includes some reasonable analysis but it might not be adequately developed and may be confused in places - may include a relevant diagram.	4 – 6 marks
1	- is very brief and/or lacks coherence - shows some limited knowledge and understanding of economic terminology, concepts and principles but some errors are likely - demonstrates very limited ability to apply relevant economic principles and/or data to the question - may include some very limited analysis but the analysis lacks focus and/or becomes confused - may include a relevant diagram but the diagram is not used and/or is inaccurate in some respects.	1 – 3 marks

Suggested diagram

A supply and demand diagram is expected, showing a shift right in the supply curve and a shift right in the demand curve, resulting in higher levels of output.



Two separate diagrams are acceptable.

Other relevant diagrams, such as cost curve diagrams, may be rewarded as part of a logical explanation.

Relevant issues include:

- explanation of cheaper transportation
- explanation of construction boom
- explanation of derived demand
- how cheaper transportation shifts the supply curve out
- how construction booms trigger greater demand for sand (via land reclamation in Singapore's case, or as an ingredient in cement and other building materials)
- how cheaper shipping (for example) can create new opportunities for trade between countries
- explanation of how cheaper shipping, by itself, would create excess supply at the original equilibrium price, thus resulting in lower prices and some additional demand
- explanation of how a construction boom, by itself, would create excess demand at the original equilibrium price, thus resulting in higher prices and some additional supply
- analysis of how the combination of demand and supply shifts may enable the sector to grow without prices rising
- reference to extracts including **Figure 2**, Chinese construction statistics, the export of Australian sand to Dubai and 'megacities'.

[9]

15.

A

[1]

16.

Areas for discussion include:

- explanation of minimum prices and why they might be introduced by a government regulator
- definition and explanation of PED and PES
- use of formulae and/or calculations to illustrate elasticity
- explanation of the determinants of PED and PES
- analysis of how the impact of a minimum price will vary according to PED. This is likely to lead to a greater proportionate change in quantity if demand is elastic rather than inelastic
- analysis of how the impact of a minimum price will vary according to PES. This is likely to lead to a greater proportionate change in quantity if supply is elastic rather than inelastic
- how excess supply is affected by PED and PES and what this might mean for the market
- analysis of how the impact of a minimum price will vary if a market has both elastic PED and elastic PES compared to an inelastic PED and PES
- analysis of how the impact of a minimum price will depend on whether the price is supported by intervention buying
- use of examples of the above situations.

The use of relevant diagrams to support the analysis should be taken into account when assessing the quality of the student's response to the question.

Level of response	Response	Max 15 marks
3	A good response provides an answer that: - is well organised and develops a selection of the key issues that are relevant to the question - shows sound knowledge and understanding of economic terminology, concepts and principles with few, if any, errors - includes good application of relevant economic principles to the given context and, where appropriate, good use of data to support the response - includes well-focused analysis with clear, logical chains of reasoning.	11 – 15 marks
2	A reasonable response provides an answer that: - focuses on issues that are relevant to the question - shows satisfactory knowledge and understanding of economic terminology, concepts and principles but some weaknesses may be present - includes reasonable application of relevant economic principles to the given context and, where appropriate, some use of data to support the response - includes some reasonable analysis but which might not be adequately developed or becomes confused in places.	6 – 10 marks
1	A weak response provides an answer that: - has identified one or more relevant issues - has some limited knowledge and understanding of economic terminology, concepts and principles but some errors are likely - has very limited application of relevant economic principles to the given context and/or data to the question - might have some limited analysis but it may lack focus and/or become confused.	1 – 5 marks

[15]

17.

Response	Max 4 marks
- includes evidence that changes in the demand for rail travel have contributed to changes in the price of rail travel - clearly explains how this data is evidence that changes in the demand for rail travel have contributed to changes in the price of rail travel	4 marks
- includes evidence that changes in the demand for rail travel have contributed to changes in the price of rail travel - unclear explanation of how this data is evidence that changes in the demand for rail travel have contributed to changes in the price of rail travel	3 marks
- includes some limited evidence that changes in the demand for rail travel have contributed to changes in the price of rail travel - limited explanation of how this data is evidence that changes in the demand for rail travel have contributed to changes in the price of rail travel	2 marks
- includes evidence that does not clearly show that changes in the demand for rail travel have contributed to changes in the price of rail travel - no explanation of how this data is evidence that changes in the demand for rail travel have contributed to changes in the price of rail travel	1 mark

Relevant issues include:

- explanation of demand for rail travel
- explanation of the link between passenger kilometres travelled and the demand for rail travel
- explanation of the link between changes in the demand for rail travel and changes in the price of rail travel
- explanation of how rail companies have an incentive to raise prices when demand is rising
- identifying that the data shows rail fares have risen from an index of 100 in 2004 to 169 in 2017 (69%)
- identification that the number of passenger km has risen from an index of 100 in 2004 to 161 in 2017 (61%) showing an increase in the demand for rail travel.

Some candidates may point out that prices have increased by around 24% in real terms rather than consider the increase in nominal terms, which is acceptable.

[4]

18.

Response	Max 4 marks
• includes evidence that shows how the expansion in the global sand market is leading to prices rising in real terms • clearly explains how this data is evidence that the expansion in the global sand market is leading to prices rising in real terms.	4 marks
• includes evidence that shows how the expansion in the global sand market is leading to prices rising / in real terms • unclear explanation of how this data is evidence that the expansion in the global sand market is leading to prices rising / in real terms.	3 marks
• includes some limited evidence that shows how the expansion in the global sand market is leading to prices rising / in real terms • limited explanation of how this data is evidence that the expansion in the global sand market is leading to prices rising / in real terms.	2 marks
• includes evidence that does not clearly show how the expansion in the global sand market is leading to prices rising / in real terms • no explanation of how this data is evidence that the expansion in the global sand market is leading to prices rising / in real terms.	1 mark

Relevant issues include:

- explanation of the concept of real terms
- explanation of what is meant by 'expansion' in the global sand market
- explanation of the link between global demand for sand and rising prices
- between 2010 and 2015, global demand for sand rose from 180 million tons to 244 million tons (an increase of 36% in 5 years), and is forecast to rise to 406 million tons by 2025
- construction sand prices have risen from an index of 100 in 2010 to an index of 127 in 2018, by around 13% in real terms (27% in nominal terms) over the period
- CPI has increased from an index of 100 in 2010 to an index of 114 in 2018 (14%)
- since 2015 construction sand prices have continued to rise in line with forecasts of Figure 2

[4]

19.

Areas for discussion include:

- definition of price discrimination
- the conditions necessary for price discrimination
- discussion of different types of price discrimination
- the disadvantages of price discrimination (higher price for many consumers, loss of consumer surplus, pricing seen as unfair eg for captive consumers such as rail season ticket holders)
- the advantages of price discrimination (lower prices for some customers with lower demand, typically those from low income households, customers with highest utility of a good or service likely to obtain the good, output likely to be higher than would be the case from a non-discriminating monopolist)
- price discrimination may be preferable to a single-price which results in secondary markets developing (eg ticket touts)
- price discrimination is good for the monopolist, increasing revenues and profits
- price discrimination is good for consumers who would otherwise have been unable to afford a good or service (eg last-minute holiday bookings) eases the impact of inequalities
- price discrimination may allow for cross-subsidisation of unprofitable goods or services
- the negative image of price discrimination, especially relating to accusations of exploitation levelled at monopolists in response to natural disasters
- discussion of the alternative to a discriminating monopolist (likely to be a non-discriminating monopolist rather than a competitive market)
- use of examples
- market failure arguments.

The use of relevant diagrams to support the analysis should be taken into account when assessing the quality of the student's response to the question.

Level of response	Response	Max 25 marks
5	Sound, focused analysis and well-supported evaluation that: - is well organised, showing sound knowledge and understanding of economic terminology, concepts and principles with few, if any, errors - includes good application of relevant economic principles to the given context and, where appropriate, good use of data to support the response - includes well-focused analysis with clear, logical chains of reasoning - includes supported evaluation throughout the response and in a final conclusion.	21 – 25 marks
4	Sound, focused analysis and some supported evaluation that: - is well organised, showing sound knowledge and understanding of economic terminology, concepts and principles with few, if any, errors - includes some good application of relevant economic principles to the given context and, where appropriate, some good use of data to support the response - includes some well-focused analysis with clear, logical chains of reasoning - includes some reasonable, supported evaluation.	16 – 20 marks
3	Some reasonable analysis but generally unsupported evaluation that: - focuses on issues that are relevant to the question, showing satisfactory knowledge and understanding of economic terminology, concepts and principles but some weaknesses may be present - includes reasonable application of relevant economic principles to the given context and, where appropriate, some use of data to support the response - includes some reasonable analysis but which might not be adequately developed or becomes confused in places - includes fairly superficial evaluation; there is likely to be some attempt to make relevant judgments but these are not well-supported by arguments and/or data.	11 – 15 marks
2	A fairly weak response with some understanding that: - includes some limited knowledge and understanding of economic terminology, concepts and principles but some errors are likely - includes some limited application of relevant economic principles to the given context and/or data to the question - includes some limited analysis but it may lack focus and/or become confused - includes attempted evaluation which is weak and unsupported.	6 – 10 marks
1	A very weak response that: - includes little relevant knowledge and understanding of economic terminology, concepts and principles - includes application to the given context which, at best, is very weak - includes attempted analysis which is weak and unsupported.	1 – 5 marks

[25]

20.

C

[1]

21.

D

[1]

22.

Areas for discussion include:

- definition of cross elasticity of demand (XED)
- understanding the formula for calculation of XED
- explanation of numerical values of XED and how they relate to substitutes/complements/non-related goods
- examples of substitute goods
- examples of complementary goods/goods in joint demand
- explanations of diagrams showing interrelated markets and cross elasticity of demand
- examples of how changes in one market affect other markets, and the significance of the XED.

The use of relevant diagrams to support the analysis should be taken into account when assessing the quality of the student's response to the question.

Level of response	Response	Max 15 marks
3	A good response provides an answer that: • is well organised and develops a selection of the key issues that are relevant to the question • shows sound knowledge and understanding of economic terminology, concepts and principles with few, if any, errors • includes good application of relevant economic principles to the given context and, where appropriate, good use of data to support the response • includes well-focused analysis with clear, logical chains of reasoning.	11 – 15 marks
2	A reasonable response provides an answer that: • focuses on issues that are relevant to the question • shows satisfactory knowledge and understanding of economic terminology, concepts and principles but some weaknesses may be present • includes reasonable application of relevant economic principles to the given context and, where appropriate, some use of data to support the response • includes some reasonable analysis but which might not be adequately developed or becomes confused in places.	6 – 10 marks
1	A weak response provides an answer that: • has identified one or more relevant issues • has some limited knowledge and understanding of economic terminology, concepts and principles but some errors are likely • has very limited application of relevant economic principles to the given context and/or data to the question • might have some limited analysis but it may lack focus and/or become confused.	1 – 5 marks

[15]

23.

D

[1]

Level of response	Response	Max 15 marks
3	A good response provides an answer that: • is well organised and develops a selection of the key issues that are relevant to the question • shows sound knowledge and understanding of economic terminology, concepts and principles with few, if any, errors • includes good application of relevant economic principles and, where appropriate, good use of data to support the response • includes well-focused analysis with clear, logical chains of reasoning.	11–15 marks
2	A reasonable response provides an answer that: • focuses on issues that are relevant to the question • shows satisfactory knowledge and understanding of economic terminology, concepts and principles but some weaknesses may be present • includes reasonable application of relevant economic principles and, where appropriate, some use of data to support the response • includes some reasonable analysis but which might not be adequately developed or becomes confused in places.	6–10 marks
1	A weak response provides an answer that: • has one or more relevant issues identified • has some limited knowledge and understanding of economic terminology, concepts and principles but some errors are likely • has very limited application of relevant economic principles and/or data to the question • might have some limited analysis but it may lack focus and/or become confused.	1–5 marks

Remember: AO4, ie evaluation, is not being assessed through this question.

Relevant issues include:

- meaning of forecast and the inevitable uncertainties involved when forecasting future sales
- identifying that the growth in the demand for aircraft is derived from the demand for both passenger and freight air transport
- explain the significance of the growth in the world economy and cyclical fluctuations in economic activity
- explain the significance of the growth in the middle-class population
- linking the above to the growth in tourism, the demand for air travel and hence aircraft
- the income elasticity of demand for air transport
- expected developments in the globalisation of the world economy
- the relative price of the company's aircraft
- explain the relevance of both price and cross elasticities of demand
- the effect of changes in exchange rates
- the rate of growth in different market segments and how they link to the type of aircraft the company sells
- the effect of new entrants into the market, eg COMAC
- the extent to which the airlines need to replace ageing aircraft
- changes in technology and the impact on the cost of operating aircraft
- changes in technology and its effect on the environmental impact of air transport

- the effect of government policies and global agreements that might affect the need to replace older aircraft by new aircraft that have a less damaging impact on the environment
- the efficiency (eg cost per seat) of operating the company's aircraft compared to its competitors
- the environmental impact of the company's aircraft compared to its competitors
- the safety record of the company's aircraft compared to its competitors
- the impact of unexpected events such as the 2007-08 financial crisis and the global pandemic
- consumer confidence in air travel
- the growth in the demand for air freight, perhaps linked to expected changes in the pattern of world trade
- use of extracts A, B and C to support the above.

The use of relevant diagrams to support analysis should be taken into account when assessing the quality of a candidate's response to the question.

[15]

25.

Areas for discussion include:

- definition of price mechanism, resource allocation and market economy
- explanation of the way in which demand and supply functions interact in equilibrium to determine price and quantity
- explanation of the rationing function of prices in allocating resources and coordinating the decisions of buyers and sellers in a market economy
- explanation of the signalling function of prices in allocating resources and coordinating the decisions of buyers and sellers in a market economy
- explanation of the incentives function of prices in allocating resources and coordinating the decisions of buyers and sellers in a market economy
- the role of prices in product and factor markets
- the interaction between markets
- use of examples.

The use of relevant diagrams to support the analysis should be taken into account when assessing the quality of the student's response to the question.

Level of response	Response:	Max 15 marks
3	A good response provides an answer that: • is well organised and develops a selection of the key issues that are relevant to the question • shows sound knowledge and understanding of economic terminology, concepts and principles with few, if any, errors • includes good application of relevant economic principles to the given context and, where appropriate, good use of data to support the response • includes well-focused analysis with clear, logical chains of reasoning.	11–15 marks
2	A reasonable response provides an answer that: • focuses on issues that are relevant to the question • shows satisfactory knowledge and understanding of economic terminology, concepts and principles but some weaknesses may be present • includes reasonable application of relevant economic principles to the given context and, where appropriate, some use of data to support the response • includes some reasonable analysis but which might not be adequately developed or becomes confused in places.	6–10 marks
1	A weak response provides an answer that: • has identified one or more relevant issues • has some limited knowledge and understanding of economic terminology, concepts and principles but some errors are likely • has very limited application of relevant economic principles to the given context and/or data to the question • might have some limited analysis but it may lack focus and/or become confused.	1–5 marks

[15]