

Workbook answers

1 The nature of the economic problem

- 1 **Correct answer: A** how to allocate scarce resources to satisfy unlimited needs and wants
Resources in an economy are scarce and needs and wants (of individuals, firms and governments) are unlimited. Option B states that wants are limited and resources are unlimited, which is incorrect as wants are unlimited and resources limited.
- 2 **Correct answer: B** public domain web pages
Public domain web pages are available to anybody with access to the internet. Access therefore is unlimited. The other options (housing, running shoes and tennis rackets) are all limited in supply and are therefore economic goods.
- 3 **Correct answer: D** selling the oil over the internet
Selling and distributing olive oil is in the tertiary sector of the economy. Options A and B are in the secondary sector as both are part of the manufacturing process. Option C (growing olive trees) is in the primary sector.
- 4 **Correct answer: D** When should production take place?
All economies address the questions: what, how, and for whom should production take place? However, when production should take place (Option D) is not a basic economic question for an economy.
- 5 **Correct answer: D** services
Services are non-physical (intangible products), such as haircuts, bus journeys and internet access. Goods (Option B) refer to physical items. Factors of production (Option A) are the resources needed to produce goods and services, i.e. land, labour, capital and enterprise. Opportunity cost (Option C) is about the sacrifice made when choosing or making a particular economic decision.
- 6 Public sector refers to economic activity directly involving the government (1), such as the provision of state education and healthcare services (1). The public sector's main aim is to provide a service (1).
- 7 Needs are goods and services that are essential for human survival (1), e.g. nutritional food, clean water, shelter, protection, clothing and access to healthcare and education (1).
Wants are human desires but not necessary for human survival (1), i.e. things people would like to have, e.g. smartwatches, holidays, cars and jewellery. (1)
Needs are largely the same for an economy, whereas wants are a matter of personal choice and unlimited due to human nature. (1)
- 8 Economic goods are those that are limited in supply (1), so human effort is required to obtain these, such as oil, wheat, cotton, housing and cars (1).
Free goods are goods that are unlimited in supply (1), such as air or seawater (1). Hence, there is no opportunity cost in terms of their output (1).
- 9 Goods are physical or tangible items (1), such as tables, cars, toothpaste and pencils (1).
Services are non-physical or intangible items (1), such as haircuts, bus journeys, telephone calls and internet access (1).

- 10** The basic economic problem is concerned with how best to allocate scarce resources (1) in order to satisfy people's unlimited needs and wants (1). Poverty can be defined as people being unable to meet their basic economic needs (1). For example, many people around the world have to live on less than \$1.25 a day (1), so suffer from extreme poverty. These people cannot meet their basic human needs, such as food, water, shelter, clothing, healthcare and education (1).

Workbook answers

2 The factors of production

1 Correct answer: A factors of production

Factors of production are the resources needed to produce any good or service, i.e. land (raw materials), labour, capital (such as production facilities) and enterprise.

2 Correct answer: D land

In economics, the term 'land' refers to all natural resources (raw materials) used in the production process, e.g. oil, coal, water, wood, metal ores and agricultural products.

3 Correct answer: B profit

Enterprise refers to the skills a businessperson requires to successfully combine and manage the other three factors of production. In return, if successful, the entrepreneur earns a profit.

4 Correct answer: A geographical mobility

Geographical mobility refers to the willingness and ability of a person to move to from one area to another location for employment purposes.

5 Correct answer: A capital

Capital refers to the manufactured resources required in the production process, e.g. machinery, tools, equipment and vehicles.

6 Land includes all natural resources (1) or raw materials required in the production process, e.g. water (1), wood (1), metal ores (1) or agricultural products (1).

7 Explanations might include:

- An increase in the national minimum wage (1) will cause higher labour costs (1), which will reduce the demand for labour (1).
- Government policies such as lower income taxes to create incentives to work (1) will increase the quantity of labour resources (1).
- New government rules and regulations (1) will tend to increase costs of production (1).
- New production technologies (1), such as automation, will allow firms to produce more output (1).
- Net migration of labour (1) will affect the quantity of labour in the economy (1), e.g. if more people migrate to a country, the quantity of labour will increase (1).
- Improvements in education and healthcare (1) will improve the quality of labour in the workplace (1).
- Unfavourable weather conditions, such as severe droughts or flooding (1) will reduce the supply of agricultural products (1); similarly, natural disasters (1) could significantly reduce output in the economy (1).

8 a Geographical mobility refers to the suitability of a factor of production to move from one use to another (1). For example, labour mobility is the willingness and ability of workers to relocate for employment purposes (1).

- b** Labour refers to the human resources required in the production process (1). For example, labour is required at Coca-Cola to work on the production line (1), perform administrative tasks (1), and promote the drinks to customers (1). Without workers, production could not take place (1).
- 9** New technologies allow firms to produce more output (1). They can also enable people to perform their jobs better (1), thereby improving labour productivity (1). For example, ICT developments such as Google Classrooms (1) have improved teaching and learning in schools (1). Automation in the car industry (1) has also increased the productivity of factors of production (1).
- 10** Using the production of Coca-Cola drinks as an example, analysis might include:
- Land: the natural resources required to make Coca-Cola (1), e.g. sugar, water and caffeine (1).
 - Labour: people to work on the production line (1), perform administrative tasks (1), and promote the drinks to customers (1).
 - Capital: the non-natural or manufactured resources used to produce Coca-Cola drinks (1), such as a factory (1), machinery (1), and delivery trucks (1) to transport the drinks to warehouses and retailers.
 - Enterprise: the risk-taking and business skills necessary to organise the production process (1), and to motivate workers so they work to the best of their ability (1), in the pursuit of profit.
 - Without any one of these factors of production, the production of Coca-Cola could not take place (1).

Workbook answers

3 Opportunity cost

- 1 Correct answer: A** In most cases, there is an alternative option.

Opportunity cost is the cost of the next best opportunity given up when making economic decisions. In almost all cases, choices made have an opportunity cost, as there is usually an alternative option or choice.

- 2 Correct answer: B** the difference in earning potential by attending university

By choosing to study economics at university, the student is giving up the money that could have been used elsewhere if university was not chosen (Option A), the option to study another subject such as geography (Option C) and the choice to work (Option D). The higher earnings, rather than the opportunity cost, is the potential reward for attending university.

- 3 Correct answer: B** 2 kg

The opportunity cost of producing an extra 5kg of potatoes is 10 kg of carrots. Therefore, the ratio is 5:10, i.e. the opportunity cost of producing 1kg of potatoes is 2 kg of carrots.

- 4 Correct answer: B** 3 units

For each 3 extra units of producer goods, the economy sacrifices 9 units of consumer goods. This gives a ratio of 3:9, so the opportunity cost of producing 1 extra unit of producer goods is 3 units of consumer goods.

- 5 Correct answer: C** \$250

Although the bicycle was \$350 when new, by selling it now, the owner would only receive \$250. Hence, this is the opportunity cost of keeping the bicycle.

- 6** Opportunity cost is the cost of the next best opportunity forgone (1) when making a decision (1).

- 7** Opportunity cost is the cost of the next best opportunity forgone (1) when making a decision (1). When constructing a new airport, the opportunity cost could include:

- using the same government funds to build public housing (1) for low-income families (1)
- the loss of land (1) which could have been used for other purposes, such as hospitals or schools (1)
- the loss of natural habitats (1) due to land being used to construct the new airport

- 8** The opportunity cost is the wages given up, plus the cost of the theatre ticket, i.e. $(\$10.50 \times 2) + \$15 = \$36$.

(1 mark for the correct working out, and 1 mark for the correct answer.)

- 9** The answer is \$18 per hour (1), as this is the next best alternative that Sangita is giving up to take driving lessons (1).

- 10** Analysis might include:

- Opportunity cost is the cost of the next best opportunity forgone (1) when making an economic decision (1).
- In this case, Tiga could choose to play football for the London club, but the opportunity cost of doing so could include:
 - completing his studies at school (1)

- the earning potential, should he complete his formal education (1)
- what else he could be doing in the next 4 years (1), including spending more time with family and friends (1)
- leisure time (1), as he would be playing full-time football in London (1)
- the opportunity to go to and experience university life (1)

Workbook answers

4 Production possibility curve

1 Correct answer: A higher prices

The production possibility curve (PPC) shows the productive capacity of the economy, which can be increased by Options B, C and D. However, higher prices (Option A) are likely to be the result of more economic activity, but do not cause the economy to be able to produce more.

2 Correct answer: C productive capacity

An increase in the productive capacity of the economy (Option C) means there is greater potential output of goods (Option A) and services. Economies do not strive to achieve greater unemployment (Option D) or to increase opportunity costs of decisions (Option B).

3 Correct answer: C an increase in the quantity of factors of production

The PPC can be shifted outwards by improving the quantity and/or quality of factors of production. Hence, Options A and B cannot be correct. Higher levels of unemployment (Option D) will cause an inward shift of the PPC.

4 Correct answer: A a decrease in oil production from O_2 to O_1

To increase production of wheat from W_2 to W_1 it is necessary to decrease production of oil from O_2 to O_1 . This is because the PPC represents the maximum amount of wheat and oil that can be produced at each level of output, with all resources used efficiently. Options B and D are incorrect because to increase production of wheat it is necessary to decrease oil production. Option C requires an increase in the productive capacity of the country.

5 Correct answer: D F

It is possible to increase production within the economy without incurring an opportunity cost, i.e. it is possible to increase both production of wheat and oil without any opportunity cost. Options A and B are on the production possibility curve and therefore represent maximum output in the economy. Point E (Option C) is unattainable given the current resources in the economy.

6 Country X could invest in machinery and/or technology (1) and this would increase the productive capacity of the economy as more oil and wheat could be produced (1) with the same amount of resources (1).

Country X could also train workers (1) to increase their skills and this might increase their productivity (1) as workers become more efficient at producing oil and wheat (1).

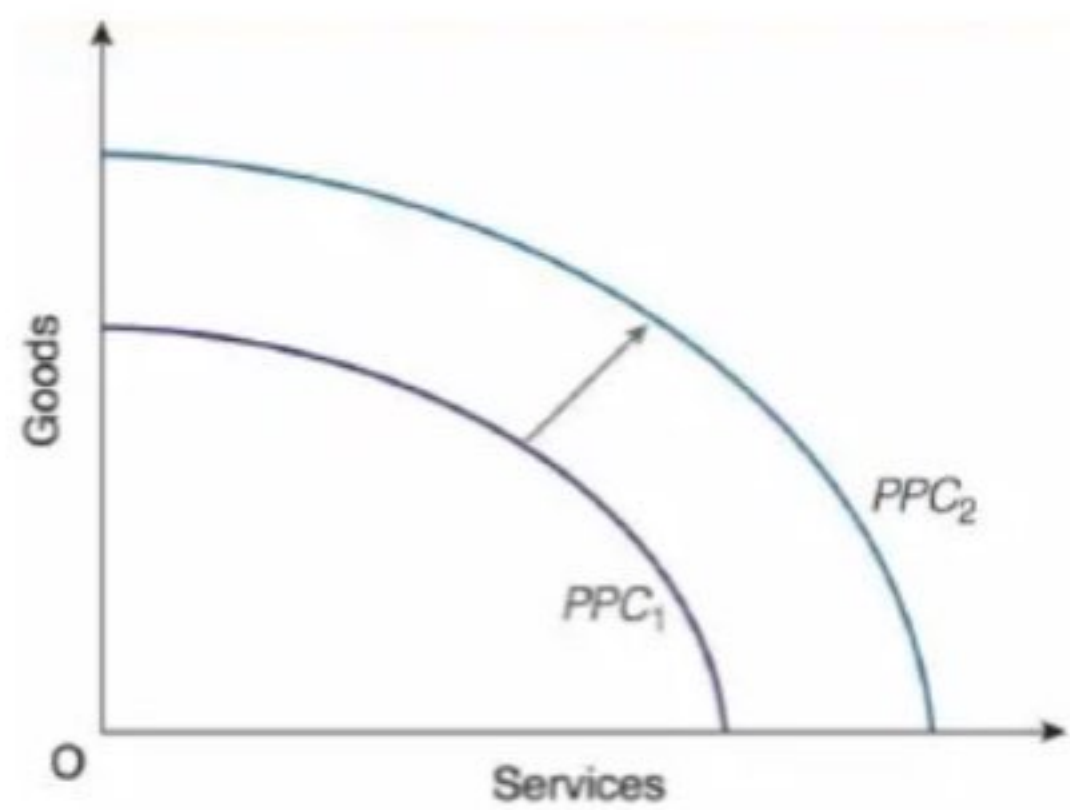
7 Productive capacity refers to the maximum combination of goods and services (1) which can be produced in an economy at any point in time (1), with all resources being used efficiently (1). It is shown by the production possibility curve (1).

8 a The PPC shows the maximum combination of goods and services (1) which can be produced in an economy at a particular point in time (1). It shows the productive capacity of the economy (1), when all resources are used efficiently (1).

- b** Opportunity cost is the cost of the next best opportunity forgone (1) when making decisions (1). The PPC diagram is a graphical representation of the maximum combinations of goods and services (1) that can be produced in an economy. By producing a certain combination of, for example, consumer and producer goods, the economy forgoes other combinations of these goods (1), i.e. producing more consumer goods means sacrificing the output of capital goods (1).
- 9** The two conditions are as follows:
- All productive resources are used (1), so there is no unemployment of factors of production (1).
 - There is efficiency in the use of resources (1), so factors of production are allocated to their best use or purpose (1).
- 10** Use the table below to assign marks.

Level	Description	Mark
3	A detailed discussion, substantiated by information provided, which demonstrates clear understanding of the question and of appropriate economic ideas and theories. There is insightful use of appropriate economic vocabulary and effective analysis of issues under discussion. Both sides of the argument are developed but not necessarily equally. There is effective evaluation, with a judgement and/or conclusion. There may be discussion of other options and strategies with their associated limitations.	6–8
2	A discussion, substantiated by information provided, which demonstrates understanding of the question and of appropriate economic ideas and theories. There is use of appropriate economic vocabulary and theories with analysis of the issues under discussion. The discussion may lack balance and only one side of the argument is presented or it may not be fully reasoned or may lack detail.	3–5
1	Some basic knowledge of economic theory relevant to the question is demonstrated, with some use of appropriate economic vocabulary.	1–2
0	Limited response with no understanding of the question demonstrated.	0

An outwards shift of the production possibility curve is shown in the following diagram:



The consequences of an outwards shift of the production possibility curve could include the following:

- The economy can produce more goods and services, without necessarily incurring an opportunity cost.
- An increase in productivity capacity means more jobs can be created.
- There may be an increase in the quality of factors of production, such as better-skilled labour through investments in education, research and training, further improving the international competitiveness of the economy.
- It may result in increased productivity and more goods and services being available for the general public.
- There may be an improvement in standards of living if people are able to enjoy more goods and services.
- Technological advances and improved production techniques could lead to better-quality goods and services.
- Negative consequences could also be considered, such as environmental degradation from higher levels of economic activity, e.g. environmental waste or pollution.

Workbook answers

5 Microeconomics and macroeconomics

1 Correct answer: D microeconomics

Microeconomics is the study of particular markets and sections of the economy, rather than the economy as a whole (which is called macroeconomics, Option C).

2 Correct answer: C macroeconomics

Macroeconomics is about decision making of the whole economy, rather than individual markets (which is called microeconomics, Option D).

3 Correct answer: D labour markets

Microeconomics is the study of particular markets and sections of the economy, such as labour markets. Economic growth (Option A), employment and unemployment (Option B) and inflation (Option C) are topics studied in macroeconomics.

4 Correct answer: D redistribution of income

Macroeconomics is about decision making of the whole economy. The redistribution of income has impacts on the macro economy, such as household consumption levels. The other topics (market failure, market structures and PED) are studied in microeconomics.

5 Correct answer: C governments

The government makes decisions that affect the whole economy, such as changes in interest rates or tax rates. The other options (entrepreneurs, firms and individual households) are microeconomic decision makers.

6 Microeconomics is the study of particular markets (1) and sections of the economy (1). It is concerned with the economic factors that affect choices (1) and the effects of changes in these factors on decision makers such as individuals, households and firms (1).

7 Macroeconomics is the study of economic behaviour and decision making in the whole economy (1). It involves aggregate variables (1), rather than individual markets, such as the demand for all goods and services in the economy (1) and the general price level in the economy as a whole (1).

8 Explanations might include:

- Entrepreneurs (1) deciding which type of business to start (1), or how best to allocate different resources (1).
- Firms (1) investigating the prices being charged by their rivals (1) in order to set their own prices (1), or deciding on the best combination of factors of production to use (1) in order to maximise profit (1).
- A household (1) considering the economic costs of raising a child (1), or the opportunity cost of spending money on a new car (1).

9 Explanations might include:

- Governments (1) making decisions regarding which products to tax (1), e.g. tobacco, alcohol and petrol (1)
- Governments (1) deciding on policies to achieve the macroeconomic goals (1) of economic growth, stable inflation, employment, balance of payments stability and redistribution of income (1).
- Governments (1) deciding to improve the productive capacity of the economy (1), e.g. education and training, and increasing incentives to work and invest (1).
- Multinational companies (1) in the determination of the degree of international trade (1) and exchange rates (1).

10 a Possible reasons for locating in the UK could include:

- government incentives for Facebook to locate in the UK (1), such as lower tax rates (1) or subsidies to lower operational costs (1)
- having an established market in the UK (1), with high earnings of £800 million (1), so the UK market is a stable one for Facebook (1)
- access to skilled labour in the UK (1), enabling the multinational to thrive and survive in Europe (1)

b Explanations might include:

- Facebook's decision to invest in the UK will provide employment opportunities (1), with at least 800 jobs being created (1) — this helps to increase spending in London and the British economy (1).
- The decision to invest will boost consumer and producer confidence levels (1), especially following the uncertainties of Brexit (1).
- The decision to invest will contribute to economic growth in the UK (1) due to greater investment, spending and employment (1) in the economy.

Workbook answers

6 The role of markets in allocating resources

1 Correct answer: B equilibrium price and quantity traded

Changes in non-price factors that affect demand or supply cause a shift in the demand or supply curve, resulting in a change in the equilibrium price and quantity traded. For example, higher demand for a good or service will tend to increase the market price. A higher level of supply will cause the price to fall, *ceteris paribus*.

2 Correct answer: B a higher price and lower level of quantity demanded

The sales tax raises production costs, so will tend to force the price to increase, thereby lowering the quantity demanded.

3 Correct answer: A price changes

Price changes do not cause a shift in supply; price changes are a result of a change in supply factors. Spare capacity (Option C) relieves pressure on suppliers having to raise prices. Sales taxes (Option B) raise production costs, so force prices to increase. By contrast, subsidies (Option D) reduce production costs, so tend to cause prices to fall.

4 Correct answer: A Equilibrium quantity falls and the price falls.

A fall in the demand for a good or service shifts the demand curve to the left, forcing prices to fall and the quantity traded also to fall.

5 Correct answer: B lower income taxes

Lower income taxes allow individuals and households to have greater disposable incomes. Hence, their level of consumption (spending) is likely to rise, shifting the demand curve for most goods and services to the right. Lower sales taxes (Option C) shift the supply curve, as sales taxes affect a firm's production costs.

6 Possible factors include changes in:

- income (1)
- marketing and advertising (1)
- availability and price of substitutes (1)
- consumer confidence levels (1)
- habits, tastes and trends (1)
- the weather, for certain goods such as ice cream, sunglasses and winter jackets (1)

7 While a movement along a demand or supply curve is caused by price changes only (1), a change in all other or non-price factors (1) that affect demand or supply will cause a shift of the curve (1). This results in price changes (1).

8 Explanations might include:

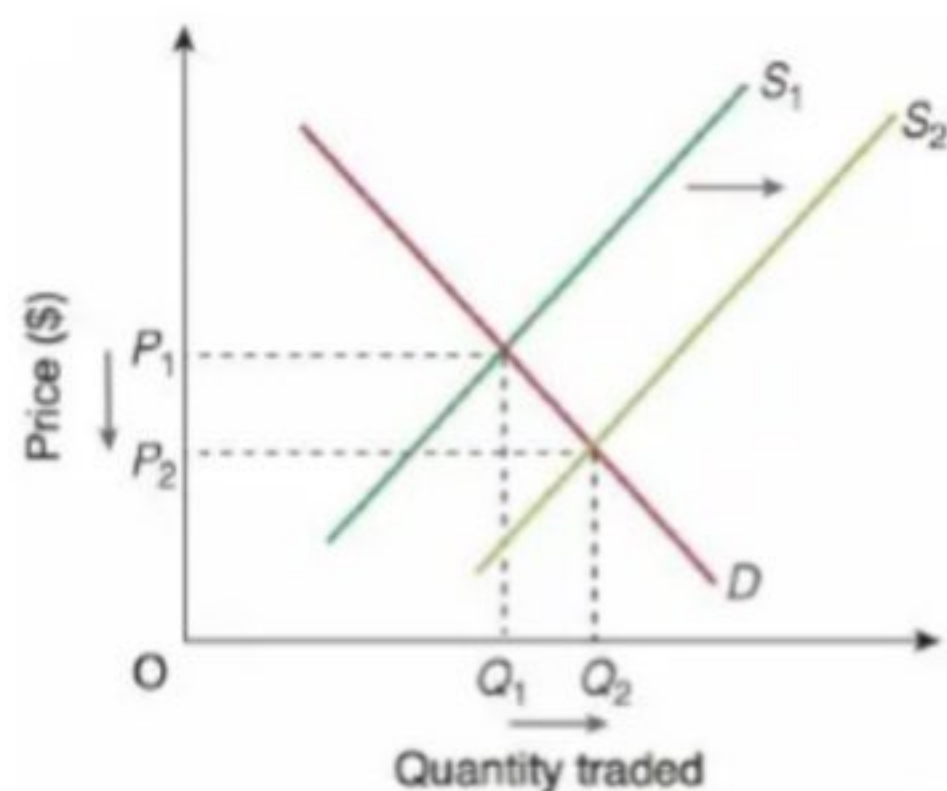
- An increase in household disposable incomes (1), may cause greater demand for luxuries (1), such as foreign holidays.
- A successful advertising (1) may make a foreign destination more attractive to holidaymakers (1).

- Improved transportation links (1), may improve the convenience (1) and reduce the costs (1) for holidaymakers.
- An increase in the exchange rate (1), may cause the costs of a foreign holiday to fall (1).

9 Explanations might include:

- Avocado crops may have been damaged (1) due to natural disasters (1), such as floods or earthquakes (1).
- Adverse weather conditions (1), such as a lack of rainfall (1), may have reduced the output or supply of avocados (1).
- The imposition of a government sales tax (1) on the sale of avocados and food items may have raised production costs (1).

- 10 An accurately drawn and labelled diagram should show a rightward shift of the supply curve (1) due to the imposition of the government subsidy, and a downward-sloping demand curve for electric cars. The subsidy reduces the production costs of electric cars (1), allowing producers to raise output (1). An increase in the supply of electric cars will tend to reduce the market price (1). Hence, the diagram should show a lower equilibrium price and higher equilibrium quantity (1).



Workbook answers

7 Demand

1 Correct answer: A effective demand

Effective demand is used to suggest that demand is backed by both the ability and the willingness of customers to pay a certain price to buy a particular good or service.

2 Correct answer: A Consumers are more aware of health issues related to sugar.

If consumers become more aware of the health issues related to sugar, they are less likely to buy sugar, shifting the demand curve to the left.

3 Correct answer: C higher interest rates in China

Higher interest rates in China make it more expensive to borrow money to buy cars, and encourage more saving rather than spending.

4 Correct answer: B shampoo and conditioner

Customers who buy shampoo are likely to need conditioner too. Option C is incorrect as sugar is not jointly demanded with tea (indeed, not all tea drinkers use sugar, and it really depends on the type of tea being considered).

5 Correct answer: C subsidies

Factors that affect demand include income (Option A), price (Option B) and the price and availability of substitutes (Option D). However, the imposition of subsidies (Option C) affects the supply curve.

6 The demand curve is downwards sloping due to the law of demand (1), i.e. as price rises, quantity demanded tends to fall (1) due to a lower ability and willingness of customers to pay (1).

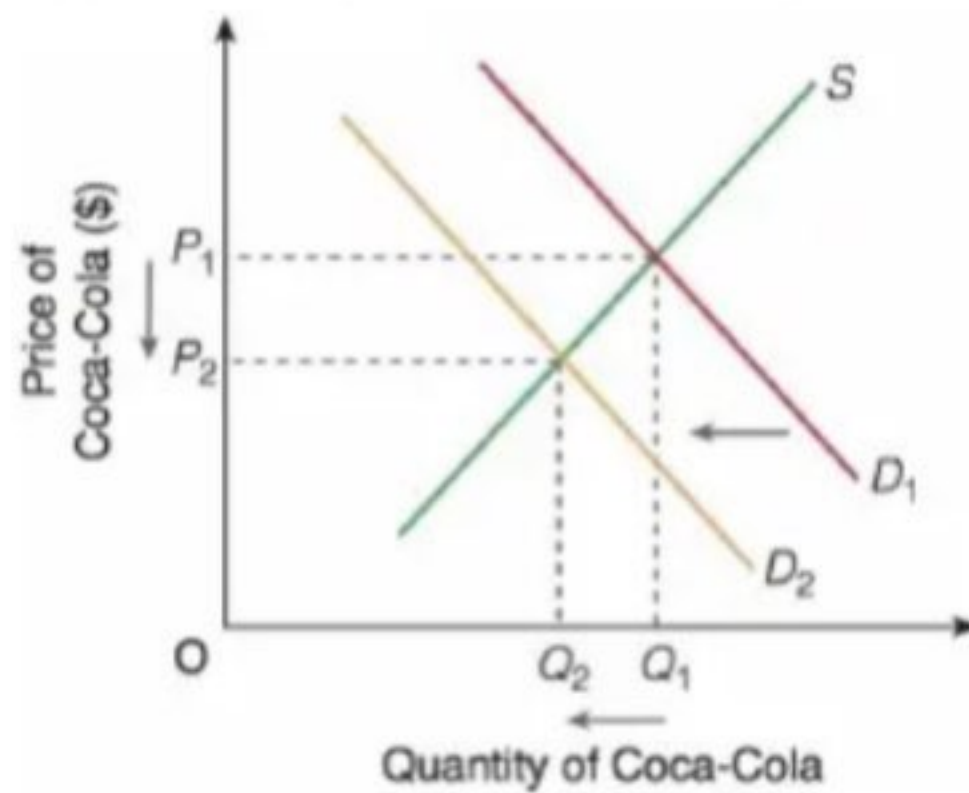
7 A *movement* along the demand curve is caused by changes in the price of a good or service (1). Higher prices cause contractions in demand (1), whereas lower prices cause expansions in demand (1). However, a *shift* in demand is caused by changes in non-price factors (1) that affect demand, e.g. changes in income, advertising and the price of substitute products (1).

8 Explanations might include

- The higher the level of consumer incomes (1), the higher the demand for ice cream (1), all things being equal.
- Favourable weather conditions (1) tend to raise the demand for ice cream (1).
- Public awareness of the health implications of eating ice cream (1), such as tooth decay and diabetes, may reduce the demand for ice cream (1).

9 Individual demand refers to demand of an individual, a household or a single firm (1). It shows the quantity demanded of a good or service that a single economic agent would buy at different prices (1). An example is where a cinema charges \$10 for its movie tickets and at that price, male customers purchase 500 tickets per week while females customers purchase 400 tickets per week (1). The market demand refers to the sum of all individual demand for a product (1) and is found by adding up all individual demand at each price level (1). So the market demand for cinema tickets at \$10 per ticket is would be 900 tickets per week (1).

- 10 Up to 4 marks for the diagram: axes correctly labelled (1), a leftwards shift of the demand curve for Coca-Cola (1), an upward-sloping supply curve for Coca-Cola (1), and a lower equilibrium price and lower equilibrium quantity (1).



Up to 2 marks for analysis: Pepsi's successful advertising campaign is a change in a non-price factor (1) which shifts the demand curve to the left (1), resulting in a fall in the equilibrium price (1) and quantity demanded (1). As Pepsi is a close substitute for Coca-Cola (1), the advertising campaign could have significant impact on the demand for Coca-Cola (1).

Workbook answers

8 Supply

1 Correct answer: C supply

Supply refers to both the willingness and ability of firms to provide a particular good or service at different price levels.

2 Correct answer: B New technologies mean customers have switched to alternative energy sources.

If customers switch to alternative energy sources, the demand curve for coal shifts to the left, thereby reducing the market price of coal. In turn, this causes the supply of coal to contract due to the law of supply, i.e. a fall in the price causes supply to fall. Option A is incorrect as consumer incomes affect the demand curve. Option C would cause the supply curve to expand due to the higher price of coal. Similarly, the discovery of new coal supplies (Option D) causes an increase in supply.

3 Correct answer: A an increase in household disposable incomes

An increase in household disposable incomes will tend to shift the demand curve for cars, not the supply curve, to the right. Options B, C and D will shift the supply curve of cars to the right as these are non-price factors that increase the market supply.

4 Correct answer: A a fall in the price of tomato sauce

A fall in the price of tomato sauce is clearly a price factor that affects supply. The law of supply states that as the price falls, so does the quantity supplied due to a reduction in the willingness and ability of firms to supply tomato sauce at a lower price. The other options shift the supply curve.

5 Correct answer: A income

Income is a determinant of demand, rather than supply. Although price (Option B) affects demand too, it is also a determinant of supply. An increase in productive capacity or having spare capacity (Option C) can increase market supply. In general, more can be supplied if more time is given (Option D).

6 An ordinary supply curve is upwards sloping, showing a positive correlation (1) between price and the quantity supplied (1). This is because the law of supply states that at higher prices, firms are more willing and more able to supply (1) at each given price level.

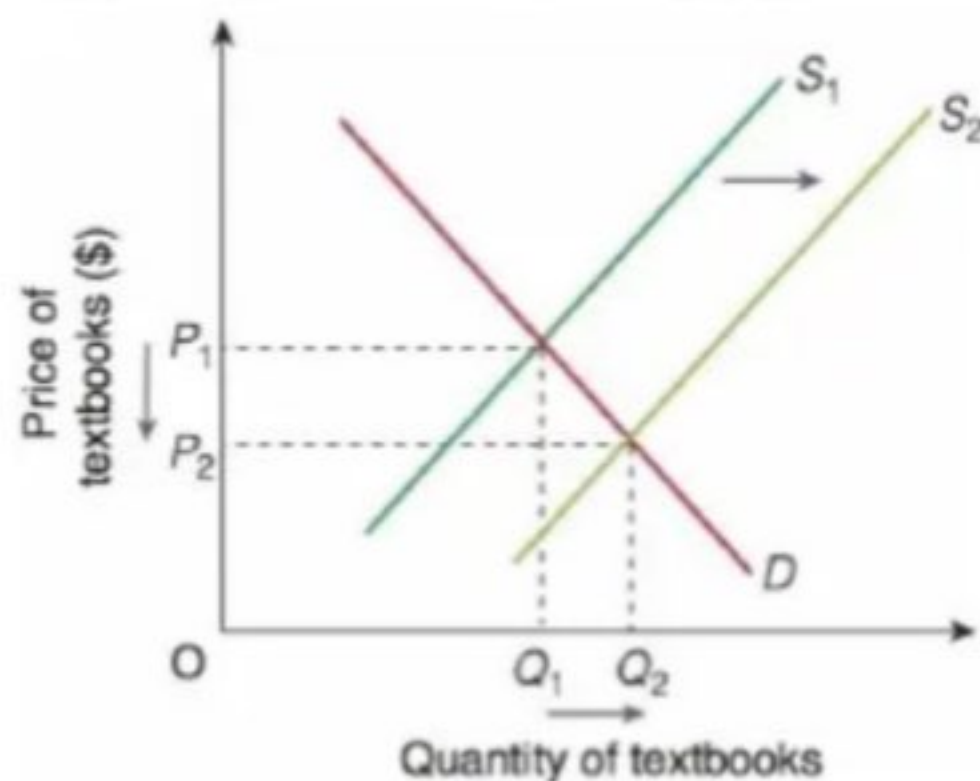
7 A *movement* along the supply curve is caused by changes in the price of the good or service (1). A *change* in all non-price factors that affect the supply of a good or service will cause a shift in the supply curve (1).

8 Explanations might include:

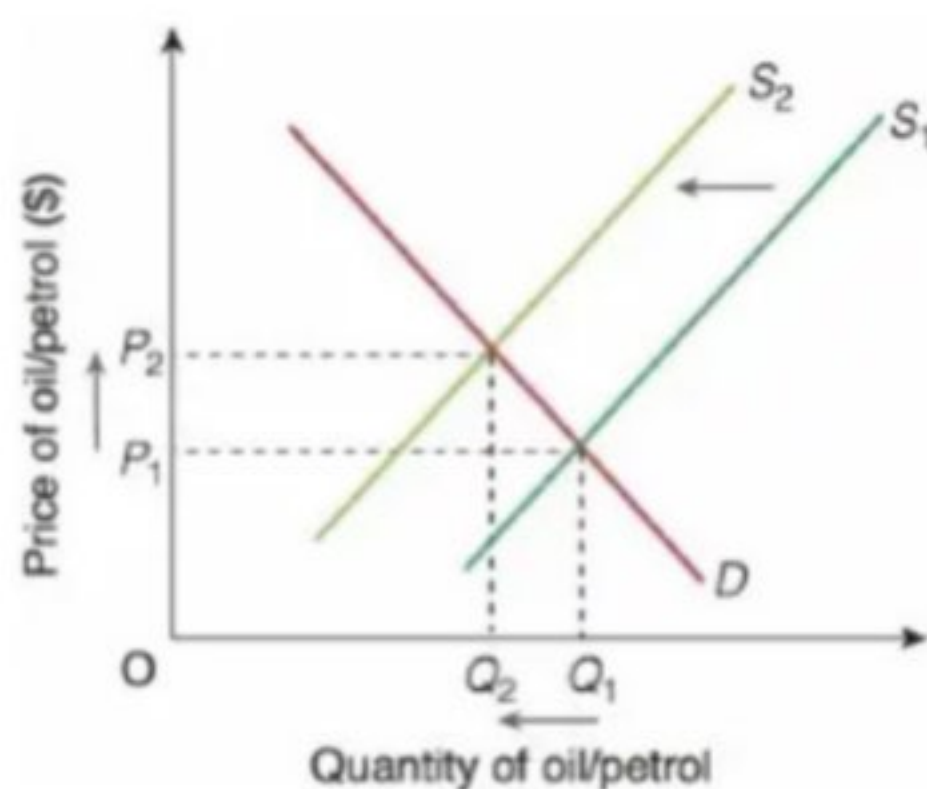
- Technological advances (1) increase productivity and supply of motor vehicles, shifting the supply curve to the right (1).
- An increase in the price of raw materials (1) will raise the costs of producing motor vehicles (1), hence shift the supply curve to the left (1).
- An increase in the cost of labour (1) results in an inwards shift of the supply curve (1) in order for firms to maintain their profit margins (1).

- An increase in the number of motor vehicle manufacturers (1) will cause an increase in the market supply (1).
- Higher taxes (1) increase the cost of producing/supplying motor vehicles, so shift the supply curve to the left (1).
- Government subsidies (1) help to reduce the cost of producing/supplying motor vehicles (1), so shift the supply curve to the right (1).

- 9 An accurately drawn and labelled diagram should show a rightward shift of the supply curve (1) following the subsidies being awarded, and a downward-sloping demand curve (1). The subsidies reduce the costs of publishing textbooks (1), so the market price is lower (1) and a larger quantity is supplied (1). Hence, the diagram should show a lower equilibrium price and higher equilibrium quantity (1).



- 10 Up to 4 marks for the diagram: axes correctly labelled (1), a downward-sloping demand curve for oil/petrol (1), a leftward shift of the supply curve (1), a higher equilibrium price and lower equilibrium quantity (1).



Up to 2 marks for analysis: the imposition of the tax raises the costs of supplying oil/petrol (1), so shifts supply to the left (1). As the market price is higher (1), it reduces the quantity traded (1).

Workbook answers

9 Price determination

1 Correct answer: C market equilibrium

Market equilibrium exists when the demand for a product is equal to the supply of the product, thus determining the equilibrium price and equilibrium quantity traded.

2 Correct answer: D market disequilibrium

Market equilibrium exists when the demand for a product is equal to the supply of the product. By contrast, there is a situation of market disequilibrium if there is excess demand (shortages) or excess supply (surpluses).

3 Correct answer: C shortage

When the demand for a product exceeds the supply (excess demand), this causes a shortage in the market because the price is lower than the market equilibrium.

4 Correct answer: B excess supply

When the price of a product is above the market equilibrium price, supply will exceed demand (excess supply). This creates a surplus in the market.

5 Correct answer: A At \$10 per unit, there is excess supply of 3000 units.

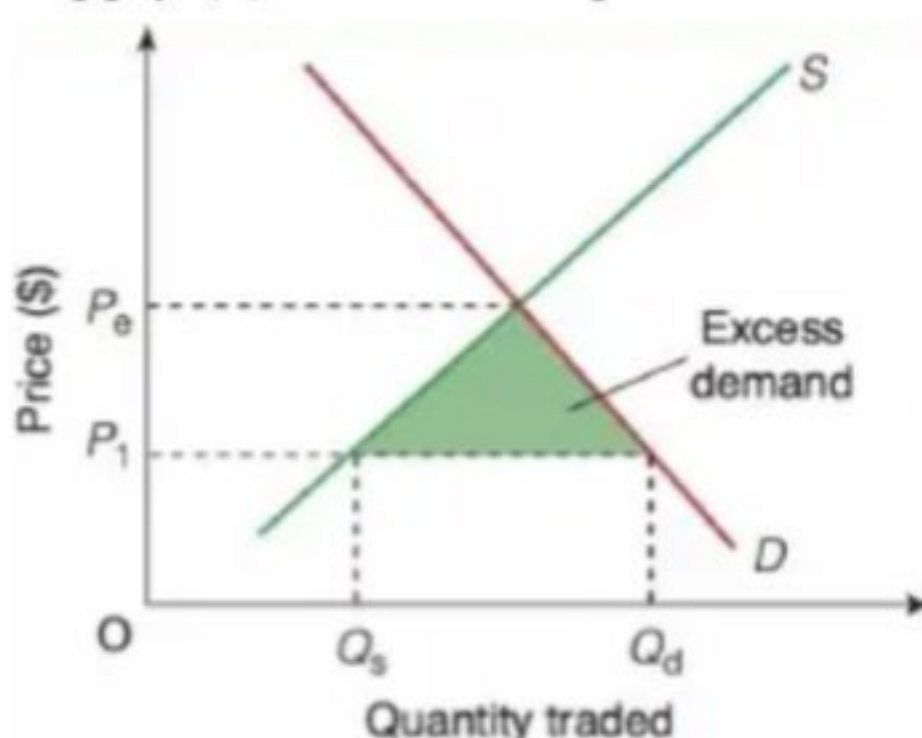
At \$10 per unit, supply is 21,000 units whilst demand is only 18,000 units, i.e. there is excess supply (a surplus, rather than a shortage) of 3000 units.

6 Market equilibrium exists when the demand for a product matches the supply (1), so there is no excess demand (shortage) or excess supply (surplus) (1).

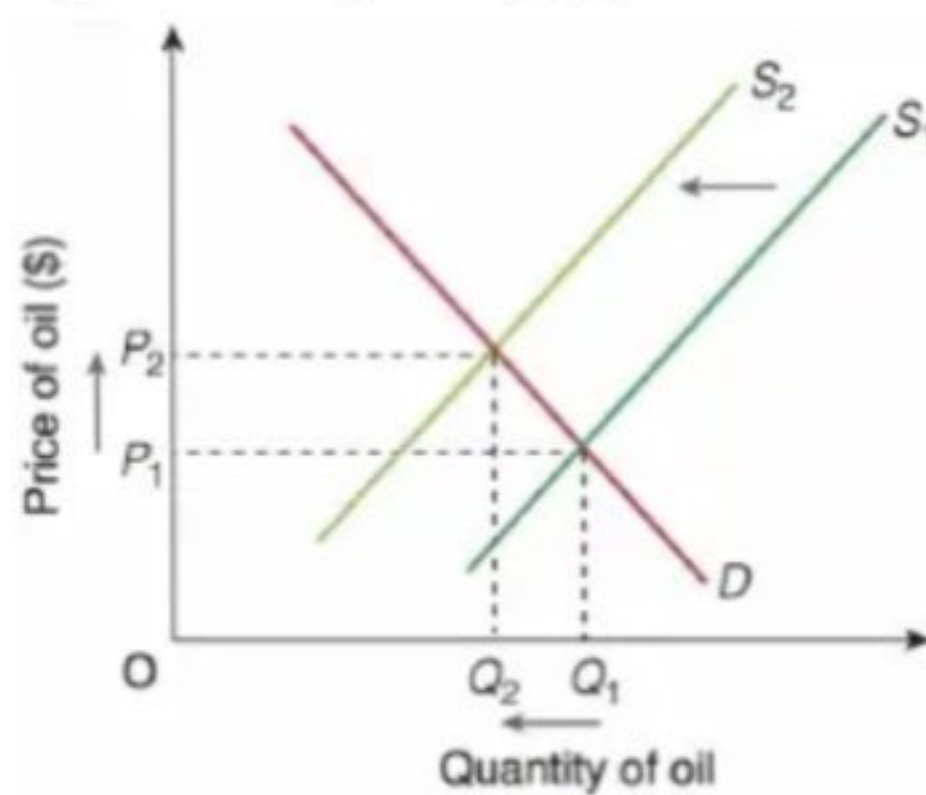
7 A shortage or surplus occurs when the price of a product is below or above the market equilibrium (1). A shortage occurs when there is excess demand (1). A surplus occurs when there is excess supply (1). Reward the use of appropriate examples (1) of excess demand or supply.

8 Equilibrium price occurs where demand and supply are equal (1), i.e. surpluses and shortages do not exist, so there is no pressure on the price to change (1). By contrast, disequilibrium price exists when demand and supply are not equal (1): there is a surplus when price is above the market equilibrium and a shortage when price is below the equilibrium (1).

9 The answer should include an accurately labelled diagram (1) that shows excess demand existing at all prices below the equilibrium (1). Excess demand occurs when demand exceeds supply (1) because the price is lower than the market equilibrium, resulting in a shortage (1).



- 10 Up to 4 marks for the diagram: axes correctly labelled (1), a downward-sloping demand curve for oil (1), a leftward shift of the supply curve (1), a higher equilibrium price and lower equilibrium quantity (1).



Up to 2 marks for analysis: the imposition of a tax on oil suppliers causes an increase in their costs (1), thus shifting the market supply curve to the left (1). This raises the equilibrium price from P_1 to P_2 (1) and subsequently reduces the quantity traded from Q_1 to Q_2 (1).

Workbook answers

10 Price changes

- 1 **Correct answer: B** higher price and lower quantity traded

If a government raises the tax on the sale of cigarettes and tobacco, this will increase production costs, so result in a higher price and hence a lower quantity traded.

- 2 **Correct answer: D** higher costs of fertilisers

Higher costs of fertilisers will raise production costs for the agricultural sector, thereby causing a leftwards shift of the supply curve.

- 3 **Correct answer: C** imposition of a new vehicle registration tax

The imposition of a new vehicle registration tax will raise production costs for petrol car manufacturers. This factor therefore directly affects suppliers, rather than customers (even though they are very likely to have to pay a higher market price).

- 4 **Correct answer: B** The price rises.

Excess demand occurs when the price is below the market equilibrium price. This suggests that prices have to increase in order to address the shortage.

- 5 **Correct answer: A** Quantity demanded falls.

The market demand for Nike sports shoes is likely to fall (Option A) as customers switch to buying the relatively cheaper Adidas sports shoes. Of course, this assumes that the two products are substitutes.

- 6 Possible factors could include:

- the imposition of a sales tax (1), or an increase in the rate of sales tax (1)
- adverse weather conditions for agricultural output (1)
- higher production costs (1)
- a fall in the number of suppliers (1)

- 7 Technological progress might increase prices due to the higher costs of the new technologies (1) or due to customers being willing to pay more to purchase superior products (1).

It might cause prices to fall due to improvements in productivity (1), or because it enables the firm to raise output to benefit from economies of scale (1), thereby allowing prices to fall.

- 8 Explanations might include:

- An increase in the supply of milk (1) may cause milk prices to fall, perhaps due to more competitors/suppliers (1) or an increase in cow stocks (1).
- A fall in quantity demanded (1) may cause milk prices to fall, perhaps due to a fall in the price of substitutes such as powdered milk (1) or a health scare (1).

- 9 Higher fuel taxes will raise the costs of private motoring (1). This will cause the supply curve of motor vehicles to shift to the left (1), resulting in a higher price (1) and a reduction in quantity traded (1).

10 Explanations might include:

- Higher levels of consumer incomes (1) have enabled more people to enjoy Starbucks coffee (1).
- Coffee drinking has become fashionable (1), so a growing number of customers increases the market demand (1).
- Product differentiation (1) has enabled Starbucks to stand out from its competitors (1).
- Customer loyalty schemes (1) have enabled Starbucks to attract and retain more customers (1).

- 7 a $PED = -0.55$, a 10% increase in price causes demand for cigarettes to drop by only 5.5% ($-0.55 \times 10\%$) (1) because the demand is price inelastic (1).
- b Explanations might include:
- For smokers, there are few close substitutes that can replace cigarettes (1) so demand remains price inelastic (1).
 - The more addicted to tobacco a smoker is (1), the less sensitive they are to price changes (1), and demand remains price inelastic (1).
 - An increase in the price of cigarettes may not have a significant impact on a smoker's overall income (1), and demand remains price inelastic (1).
 - A successful anti-smoking campaign (1) may change a consumer's cigarette-buying habits if they are persuaded to adopt a healthier lifestyle (1), making demand more price elastic (1).
 - Continual increases in the price of cigarettes over time (1) may encourage consumers to stop smoking in the long run (1), making demand more price elastic (1).
- 8 Analysis might include:
- PED is the responsiveness of quantity demanded to a change in price (1).
 - If demand is price elastic, a fall in price will raise revenue (1) because the increase in demand for flights will be greater than the decrease in price (1).
 - If demand is price inelastic, a fall in price will reduce revenue (1) because the increase in demand for flights will be lower than the decrease in price (1).
 - Flights have different PED at certain times of the day/week/year (1) and therefore the airline will need to decide which flights it can lower or raise the price of (1).
 - The effect of lower prices on profits will depend on costs of the airline company (1).
- 9 a $PED = \frac{(215 - 240) / 240}{(280 - 250) / 250} = \frac{-10.4\%}{+12\%} = -0.867$
- b Explanations might include:
- Knowing the PED for its best-selling sunglasses is price inelastic (0.867), the firm can raise its price (1) knowing that total revenue will increase (1), from \$60,000 ($\240×250) to \$60,200 ($\280×215) (1).
 - Knowledge of PED can also inform Sanchez Sunglasses about the extent to which the firm has market power (1), e.g. if demand becomes more price elastic (its PED is not too far off from a value of 1.0), the firm may need to improve the marketing of its sunglasses to customers (1).
- 10 Analysis might include:
- The availability of substitutes for a good or service (1). For example, demand for a bus journey may have inelastic demand because there are no alternative forms of public transport on that route (1). Other examples of inelastic goods are private education (1) and prescribed medicines (1). Demand for apples is elastic (1), and has a value of greater than 1 because there are many substitutes for the fruit (1). Other examples of goods/services with many substitutes are smartphones (1), running shoes (1) and jeans (1).
 - Habits and addiction (1). If a person is a smoker, his/her demand for cigarettes is inelastic (1) because he/she will buy the cigarettes even if the price rises (1).

- Interests (1). People who have hobbies and interests that they are devoted to (1), e.g. watching live sports (1), playing golf (1) and cycling (1), are likely to spend money on their interest even if the cost of doing so increases (1).
- The proportion of income spent on a good (1). Demand for sugar, salt and toothpicks tends to be inelastic demand (1) because a person will spend a small amount of their income on these goods (1). Even if the price of the goods increases, they will continue to buy more or less the same amount as the price rise is insignificant (1). On the other hand, if a person spends a larger proportion of his/her income on a good or service (1), such as a luxury holiday (1) or a restaurant meal (1), then if the price increases, demand will fall by a greater degree (1) and will be price elastic (1).
- The degree to which a good or service is a necessity (1). Products that are regarded as essential (such as food, fuel, medicines, housing and transportation) (1) tend to be relatively price inelastic (1) because households need these goods and services, so will continue to purchase them even if their prices rise (1). By contrast, the demand for luxury products (such as Gucci suits, Chanel handbags and Omega watches) (1) is price elastic (1) as these are not necessities for most households (1).
- Time (1). If prices of goods and services increase (or decrease) over time (1), people may demand less (or more) of the good or service (1). For example, if the price of petrol and diesel cars continues to increase (1), a person may decide to purchase an electric car in the future (1). If domestic electricity prices continue to increase (1), people may seek alternative power sources such as solar power in the long run (1).

Workbook answers

12 Price elasticity of supply

- 1 **Correct answer: C +0.5**

$$PES = 5\% \div 10\% = +0.5$$

- 2 **Correct answer: C +0.25**

$$PES = 2\% \div 8\% = +0.25$$

- 3 **Correct answer: C** to estimate the changes in a firm's costs of production

The value of PES shows the extent to which supply can respond to changes in the market price of the product, based on its costs of production. Option A is a macroeconomic topic, whereas supply theory is a microeconomic topic. Options B and D are related to demand, rather than supply.

- 4 **Correct answer: A** haircuts at a local hair salon

In the short run, barbers could work overtime if the market price of haircuts increased; in the long run, more barbers could be hired. It is relatively more difficult to increase the output of organic oranges (Option B), at least in the short run. There is a finite/fixed number of original paintings by Picasso (Option C), so this has the lowest value of PES. Increasing the number of season tickets (Option D) is very difficult due to the fixed capacity of the stadium (unless Real Madrid Football Club moved to larger premises in the long run).

- 5 **Correct answer: C 0.25**

The percentage change in quantity supplied is -5% , i.e. $(9500 - 10,000) / 10,000$. The percentage change in price is -20% , i.e. $(\$4 - \$5) / \$5$. Hence $PES = -5\% \div -20\% = 0.25$.

- 6 **a** Since $PES = 0.95$, a 10% increase in the price of chocolates would increase supply by 9.5% (1), i.e. $9.5 / 10 = 0.95$ (1). This means supply is relatively price inelastic (1), perhaps due to the time it takes to harvest coco beans (1).
- b** Explanations might include:
- Time (1) — in the short run, the supply of coco beans/chocolate is fixed (1) whereas it can be variable in the long run depending on the market price of coco beans/chocolate (1).
 - Spare capacity (1) — the PES of chocolate will be higher if firms have spare capacity to produce more chocolates (1).
 - Inventories (1) — the greater the ability to store the chocolates, the higher the PES will be (1).
- 7 **a** Percentage change in supply = $(10,500 - 10,000) / 10,000 = 5\%$
 Percentage change in price = $(\$4.8 - \$4) / \$4 = 20\%$
 $PES = 5/20 = +0.25$
 (1 mark for working out and 1 mark for correct answer.)
- b** The PES of lemons is price inelastic (1). This suggests that supply is relatively unresponsive to a change in the market price (1). A 20% increase in the price has caused supply to increase by only 5% (1). This is likely to be due to the long time it takes for suppliers to harvest lemons (1), despite the increase in the market price. It may also be due

to the lemons being perishable products (1), so suppliers are not able to store large numbers of lemons for long periods of time (1).

- 8 Supply is said to be *price inelastic* if firms find it difficult to change production in a given time period (1) due to a change in the market price (1). Examples firms supplying organic produce (1), fresh flowers (1) and cruise liners (1).

In contrast, supply is said to be *price elastic* if firms can quite easily increase supply without a time delay (1) if there is an increase in the price of the product (1). Examples include firms producing bottled water (1), carbonated soft drinks (1), printing paper (1) and toothpaste (1).

- 9 The PES for breakfast cereal is likely to be price elastic (1) because firms are able to mass-produce it in response to an increase in the market price of breakfast cereal (1). In addition, firms have the ability to accumulate stocks of breakfast cereal, as there is usually a lengthy period before its expiry (1) to be released on the market should the price increase (1).

- 10 Answers will vary. Factors that affect the value of PES include:

- the degree of spare productive capacity
- the level of (spare) stocks
- the number of producers in the industry
- the ease and cost of factor substitution, e.g. using machinery instead of labour
- the time period under consideration

(1 mark for a factor that affects PES and 1 mark for an explanation. 1 mark for the use of a relevant example to supplement the explanation.)

Workbook answers

13 Market economic system

1 Correct answer: B economic system

Economic system refers to the different ways in which an economy can be organised, i.e. whether it is a planned, free market or mixed economy.

2 Correct answer: B incentives to work

The market economic system enables private individuals and firms to decide what, how and for whom production should take place. This creates incentives to those in the private sector to work hard for economic returns. Hence, Option B is an advantage, not a disadvantage, of the market economic system.

3 Correct answer: B market economy

The market economic system enables private individuals and firms to decide what, how and for whom production should take place. In turn, these decisions are based on the market forces of demand and supply. For example, a farmer is likely to allocate more resources to harvesting corn than wheat if the market price of corn is higher.

4 Correct answer: B income and wealth inequalities

In a free market economy, resources are allocated on the basis of demand and supply, e.g. highly skilled workers are paid more than those with a lack of desirable work skills. This can result in huge inequalities in income and wealth (Option B). The other options are disadvantages of operating a planned economy.

5 Correct answer: C excess packaging

The market economic system promotes and encourages competition. Whilst this has its benefits, one downside is that competition can sometimes be very wasteful, such as producers using packaging as a way to differentiate and promote their products and brands. This often leads to excess packaging, including plastic and non-biodegradable waste.

6 In general, the forces of demand and supply (1) for the product determine its price. For example, the higher the level of demand for gold, the higher the price tends to be (1). By contrast, the higher the supply of a product, such as salt or barley, the lower its market price tends to be (1).

7 Features of a market economic system include the following:

- It relies on the market forces of demand and supply (1) to allocate scarce resources (1).
- There is minimal, if any, government intervention (1).
- Economic agents in the market economic system are driven by profits (1).
- The system creates incentives (1), such as higher wages or salaries for those who are more productive (1) or more qualified and skilled (1).
- Markets are competitive (1), as firms strive to maximise their own profits (1).
- There can be rather large inequalities in income and wealth (1), i.e. there is an income and wealth gap between the rich and poor (1).

8 a The market economic system is a type of economic system that relies on the market forces of demand and supply (1) to allocate scarce resources (1) with minimal government intervention (1).

b Analysis of the benefits might include:

- **Efficiency** (1) — competition in the market economic system helps to ensure private individuals and firms pay attention to what customers want (1).
- **Incentive to innovate** (1) — firms have an incentive to spend money on research and development (R&D) in order to gain a competitive advantage (1), thereby creating more innovative products for customers (1).
- **Freedom of choice** (1) — private individuals can choose which goods and services to purchase (1) without being restricted by government regulations and planning (1).
- **Incentives to work** — the profit motive for private sector firms (1) and the possibility for individuals to earn unlimited wealth (1) create incentives to work hard. This helps to boost economic growth (1) and living standards in the country (1).

Analysis of the costs might include:

- **Income and wealth inequalities** (1) — in a market economic system, the rich have far more choice and economic freedom (1), whilst the poor have little access to goods and services (1) or may even be neglected (1).
- **Environmental concerns** (1) — the high level of economic activity in the market economic system (1) depletes the world's scarce resources (1) and creates negative externalities such as pollution and climate change (1).
- **Wasteful competition** (1) — competitive pressures can result in wasteful competitive practices (1), e.g. the excessive use of packaging (1) or advertising clutter, e.g. online marketing spam (1).
- **Exploitation** (1) — the lack of government intervention can result in consumers being exploited (1), perhaps by marketing campaigns (1) or poor quality or safety standards leading to less safe products for consumers (1).

9 In a market economic system, the rich have far more choice and economic freedom (1). This is because the market system produces goods and services only for those who are able and willing to pay (1), thus basic services for the poorer members of society may be neglected (1). By contrast, in the mixed economic system, the government provides the basics, such as state education and healthcare (1), for the general public. Thus, there is greater equality in the mixed economic system (1).

10 Use the table below to assign marks.

7 Explanations of external costs/negative externalities might include:

- The casinos provide more opportunities for people to gamble, drink alcohol and smoke (1) and the over-consumption of these activities has negative effects on society (1), e.g. an increase in debt and health problems (1).
- The construction of the casinos and hotels has resulted in the loss of vegetation and green spaces (1), which has spoiled the landscape and natural beauty of Macau (1) and the quality of life (1) for the people living there.
- The local culture has been lost with the establishment of a casino culture (1), which has a negative effect on the culture and society of Macau as it loses its unique traditions and identity (1).
- The casinos and hotels increase traffic in the area (1), causing congestion and greater noise and air pollution (1), which negatively affects the quality of life for people living in Macau (1).

Explanations of external benefits/positive externalities might include:

- The casino and hotels create employment opportunities providing income for workers (1) who then spend the income in other businesses (1).
- Higher tax revenues can be raised (1), which may result in a greater provision of public and merit goods for citizens of Macau (1)
- The development of the casinos and hotels is a sign of economic growth (1), which may lead to increased standards of living for citizens in Macau (1).

8 The private sector fails to provide certain goods and services due to a lack of a profit motive (1) and such goods and services are known as public goods. Public goods are non-excludable and non-rivalrous in consumption (1). This means those who do not pay can still enjoy access to the product and there is no competition to purchase or use the product (1).

9 Use the table below to assign marks.

Level	Description	Mark
3	A detailed discussion, substantiated by information provided, which demonstrates clear understanding of the question and of appropriate economic ideas and theories. There is insightful use of appropriate economic vocabulary and effective analysis of issues under discussion. Both sides of the argument are developed but not necessarily equally. There is effective evaluation, with a judgement and/or conclusion. There may be discussion of other options and strategies with their associated limitations.	6–8
2	A discussion, substantiated by information provided, which demonstrates understanding of the question and of appropriate economic ideas and theories. There is use of appropriate economic vocabulary and theories with analysis of the issues under discussion. The discussion may lack balance and only one side of the argument is presented or it may not be fully reasoned or may lack detail.	3–5
1	Some basic knowledge of economic theory relevant to the question is demonstrated, with some use of appropriate economic vocabulary.	1–2
0	Limited response with no understanding of the question demonstrated.	0

Social costs of the dam include:

- loss of land and damage to the environment caused by the construction of the dam
- displacement and reallocation of over 1 million people, causing disruption to their lives and livelihood
- loss of cultures of local villages and towns

Social benefits of the dam include:

- producer of a large amount of hydroelectric power which may lower costs and produce a reliable energy supply
- creation of jobs for the construction and management of the project

Conclusion: Although the construction of the dam has created jobs and may provide an efficient source of electricity, the social costs may outweigh the social benefits because of the disruption to people through loss of their homes and livelihoods and the damage to the natural environment.

- 10 a Social benefits are the true (or full) benefits of consumption or production, i.e. the sum of private benefits and external benefits (1). For example, university education can lead to increased productivity of the workforce due to increased skills and knowledge (greater human capital) (1). If left to the choice of individual, university education could be under-consumed due to the costs charged (1). Funding therefore has benefits for the individual and for the productivity of the workforce (1).
- b Explanations might include:
- There is no opportunity cost incurred by the government (1) as people are responsible for the private costs of their own education (1).
 - People are more likely to study hard (1) because they are paying for their education (1).
- c Use the table below to assign marks.

Level	Description	Mark
3	A detailed discussion, substantiated by information provided, which demonstrates clear understanding of the question and of appropriate economic ideas and theories. There is insightful use of appropriate economic vocabulary and effective analysis of issues under discussion. Both sides of the argument are developed but not necessarily equally. There is effective evaluation, with a judgement and/or conclusion. There may be discussion of other options and strategies with their associated limitations.	6–8
2	A discussion, substantiated by information provided, which demonstrates understanding of the question and of appropriate economic ideas and theories. There is use of appropriate economic vocabulary and theories with analysis of the issues under discussion. The discussion may lack balance and only one side of the argument is presented or it may not be fully reasoned or may lack detail.	3–5
1	Some basic knowledge of economic theory relevant to the question is demonstrated, with some use of appropriate economic vocabulary.	1–2
0	Limited response with no understanding of the question demonstrated.	0

Benefits of subsidising university education include the following:

- More people will go to university and therefore society will gain from higher skilled workforce.
- Subsidies will allow students from low-income backgrounds to attend university and therefore a greater proportion of society will be able to access education.
- Subsidies redistribute income within a society as they enable students from low-income backgrounds to experience a university education.
- Universities may close if there is a lack of students.

Costs of subsidising university education:

- There is an opportunity cost as the money spent on subsidies could be spent on something else.
- Students may go to university but drop out before the end of the course, wasting resources.
- Students may not have an incentive to work hard because they are not paying for the course.

Workbook answers

15 Mixed economic system

1 Correct answer: D mixed economy

As the name suggests, the mixed economy is an economic system that combines elements of both the planned economy and the market economy.

2 Correct answer: D minimum price

A minimum price is one that is set above the market equilibrium price. This helps to create an incentive for firms to supply this product because the price is set higher than it would be in a market economy.

3 Correct answer: D planned economy

In a planned economy, the government oversees production decisions (what, how and for whom production should take place).

4 Correct answer: C maximum price

Price controls are used to ensure that market prices do not escalate beyond control, which would prevent the majority of people from accessing the good or service. Hence, the price is set at a maximum, i.e. firms cannot charge more than the maximum price.

5 Correct answer: C subsidies

The provision of government subsidies helps to reduce the costs of production. The subsidies help firms to supply more of these goods and services, and to charge a lower price.

6 Privatisation is the transfer of ownership of assets from the public sector to the private sector (1). Examples could include utilities boards (1), public-sector housing (1) and state-owned enterprises, such as the Post Office or a broadcasting station (1), all being sold off to the private sector.

7 Features of a planned economic system include the following:

- Production decisions are made by the government (1), i.e. the state decides on what, how and for whom production should take place (1).
- Production schedules are devised on a long-term basis (1) to ensure output of products deemed to be necessary by the government (1).
- Wage differentials are minimal (1), meaning there is greater equality in income and wealth (1).
- The economy prefers to be self-sufficient (1) rather than rely on trade negotiations with other countries (1).

8 a A mixed economy is a combination of both planned economies (1) and market economies (1).

b Analysis might include:

- There may be a misallocation of resources in a free market economy (1), such as the under-provision of merit goods (1) and public goods (1), and negative externalities such as pollution (1).

- There is a need for government intervention in the economy (1) for numerous reasons, such as environmental protection (1) and to redistribute income and wealth using the tax system (1).
 - Government intervention is also required to regulate and control the activities of private sector firms in mixed economies (1). For example, government intervention is required to enforce employment rights (1) and prevent anti-competitive business activities (1).
- 9 A planned economic system ensures basic needs (1) are met for everyone in the economy (1). This helps to achieve greater equality in income and wealth distribution (1). By contrast, in market economies, production is disproportionately geared towards those with high incomes and wealth (1), i.e. those with the ability and willingness to pay higher prices.
- 10 Use the table below to assign marks.

Level	Description	Mark
3	A detailed discussion, substantiated by information provided, which demonstrates clear understanding of the question and of appropriate economic ideas and theories. There is insightful use of appropriate economic vocabulary and effective analysis of issues under discussion. Both sides of the argument are developed but not necessarily equally. There is effective evaluation, with a judgement and/or conclusion. There may be discussion of other options and strategies with their associated limitations.	6–8
2	A discussion, substantiated by information provided, which demonstrates understanding of the question and of appropriate economic ideas and theories. There is use of appropriate economic vocabulary and theories with analysis of the issues under discussion. The discussion may lack balance and only one side of the argument is presented or it may not be fully reasoned or may lack detail.	3–5
1	Some basic knowledge of economic theory relevant to the question is demonstrated, with some use of appropriate economic vocabulary.	1–2
0	Limited response with no understanding of the question demonstrated.	0

Arguments in favour of the (free) market economy include:

- greater efficiency and productivity, which can lead to more economic growth, job creation and economic prosperity for many people
- freedom of choice, such as customers being able to choose between different types of smartphone, or people being able to choose their own career paths
- more competition, which can benefit the public as the rivalry between firms is likely to improve customer service and generate better-quality products
- incentives to work hard, due to the limitless economic opportunities available

Possible disadvantages of a (free) market system include:

- environmental issues and concerns about the depletion of the earth's scarce resources, and the intensity of consumption and economic activity
- income and wealth inequalities, which result in the rich getting richer and the poor getting poorer

- social hardships for those who are unable to secure well-paid jobs or those who are unable to work, such as unskilled or uneducated people or those with physical disabilities
- the existence of unregulated monopolies, which are able to exploit customers by restricting output and/or charging higher prices