EXPERT TUITION

Economics Questions By Topic:

Elasticities (1.2.3 & 1.2.5) Mark Scheme

A-Level Edexcel Theme 1

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Question Number	Answer	Mark
1(a)	**The only correct answer is D**	
	A is not correct because the concept explored is PED not YED	
	B is not correct because as unemployment falls fewer people will use buses	
	C is not correct because XED is concerned with the relationship between complements or substitutes	**(1)**

Question Number	Answer	Mark
1(b)	**Knowledge 1, Application 1 and Analysis 1**	
	Knowledge/understanding	
	1 mark for reason	
	Possible answers include:	
	• Recognition that the lower the PED the less price sensitive the product is (1) quantity demanded does not change significantly with price (1)	
	Application	
	• If, for example, a product with a PED of -0.1 had a 10% price rise, sales volume would fall by 1% (ceteris paribus) (1); so the 10% higher price per unit would far outweigh the 1% reduction in units sold (1)	
	Analysis	
	• The lower a product's price elasticity, the easier it is to boost revenue by increasing the price (1) if the firm raises its price it will increase the value of its sales (1)	**(3)**

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Question Number	Answer	Mark
2(a)	**Application 2**	
	Price elasticity of supply calculation	
	% change in quantity supplied (28 268/134 612 x 100) = 21% (accept range 20.9 to 21) (1)	
	PES = 21/5.4 (1) = 3.9	
	Award 2 marks for 3.9	
	(Accept a range between 3.8 and 4)	**(2)**

Question Number	Answer	Mark
2(b)	**Application 1**	
	The only correct answer is C	
	A is not correct because the PES does not equal to infinity	
	B is not correct because the PES does not equal zero	**(1)**
	D is not correct because the PES is not less than one	

Question Number	Answer	Mark
2(c)	**Knowledge 1, Analysis 1**	
	Identification of a factor determining PES (1) e.g	
	• levels of spare capacity	
	• stocks of finished goods and components available e.g. bricks	
	• time period and production speed	
	• level of factor mobility/flexibility	
	• availability of bricklayers, electricians etc	
	• availability of land	
	• planning permission/regulations	
	• availability of technology/machinery to build	**(2)**
	Explain as to the impact on price elasticity of supply (1) e.g.	
	• limited availability of land/builders (1) so supply will be inelastic (1)	

Question Number	Answer	Mark
3(a)	**Application 1** **The only correct answer is D** *A is not correct because a negative figure would indicate they are complements* *B is not correct because a figure less than one indicates a distant relationship* *C is not correct because whilst positive is a substitute a figure less than one does not indicate a close relationship.*	**(1)**

Question Number	Answer	Mark
3(b)	**Knowledge 1, Application 2** **Knowledge/Understanding** 1 mark for identifying revenue as price x quantity (this understanding may be implicit) **Application** 1 mark for calculating percentage change in quantity (-)1.5% or actual change 18.8135 million tickets (allow 18.8 million) 1 mark for correct answer £143.547 million (allow 143.5 to 143.6) **NB Award 3 marks for correct answer £143.547 million (allow 143.5 to 143.6)** **NB Maximum of 2 marks if correct answer is not given**	**(3)**

Question Number	Answer	Mark
4(a)	**Application 1** **The only correct answer is C** *A is not correct because they may multiplied 8.75 by -0.1* *B is not correct because they have mistakenly taken 2017 as the original year in the percentage change calculation* *D is not correct because the percentage change in quantity demanded has not been multiplied by -0.1.*	**(1)**

Question Number	Answer	Mark

4(b)	**Knowledge 1, Application 1, Analysis 1**
	
	Knowledge/Understanding
	1 mark for recognition of the effect of a change in income on the demand
	
	Application
	1 mark for application to Freddo, e.g.
	   • YED is negative (1)
	   • Freddos is an inferior good (1)
	   • YED is inelastic
	
	Analysis
	1 mark for linked development, e.g.
	   • Sales revenues fall as incomes rise or
	   • Sales revenue rise when incomes fall
	   • Company should plan to produce less when the economy does well or
	   • Company should plan to produce more when economy/incomes are not growing
		(3)

Question Number	Answer	Mark
5	**Knowledge 1, Analysis 1**	
	Knowledge: 1 mark for e.g.	
	• The demand for use of gaming machines is likely to increase (1)	
	• It is a substitute for national lottery tickets (1)	
	• Substitutes have a positive cross elasticity of demand (1)	
	Analysis: 1 mark for e.g.	
	• Increase by 128% in response to a 100% increase in the price of national lottery tickets (1)	
	• 1.28 cross elasticity of demand indicates they are **close** substitutes (1)	
		(2)

Question Number	Answer	Mark
6(a)	**Application 2** **Application** PED = %△Qd/%△P price rise = 5/60 x 100 = 8.3% (1) **or** -5.4%/+8.3% (1) PED = (-)0.65 Award 2 marks for (-)0.65 **NB if answer given is between (-)0.7 and (-)0.6 award 2 marks.**	**(2)**

Question Number	Answer	Mark
6(b)	**The only correct answer is A** *B is not correct because 'population' is a non price determinant of demand not PED determinant* *C is not correct because 'cost' is a non price determinant of supply not PED determinant* *D is not correct because 'expected rise in the price' is a non price determinant of demand not PED determinant*	**(1)**

Question Number	Answer	Mark
7	C	**(1)**

Question Number	Answer	Mark
8(a)	**Application 2** **Application:** 1 mark for applying the formula and 1 mark for the correct answer -21.65% ÷ 17.78% (1) = -1.2 (1) Correct calculations of both percentages accept (-) 0.217 and (-) 0.178 = 1 mark **NB if the answer given is -1.2 or 1.2, award 2 marks**	**(2)**

Question Number	Answer	Mark
8(b)	**Knowledge 1, Analysis 1** **Knowledge/understanding:** 1 mark for original **and** new sales revenue Original sales revenue: £7.20 × 97 million = £698.4 million New sales revenue: £8.48 × 76 million = £644.5 million **Analysis:** 1 mark for the change in revenue: -£53.9 million (accept close approximation, for example a fall of £54 million) **NB if the answer given is -53.9m/53.9m award 2 marks (this may be stated as -7.7% or 7.7%)** **NB If million is missing from the answer award up to 1 mark**	**(2)**

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Question Number	Answer	Mark
8(c)	B	**(1)**

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Question Number	Answer	Mark
9(a)	D	**(1)**

Question Number	Answer	Mark

9(b)	**Knowledge 1, Application 2**
	
	Knowledge
	1 mark for identifying that a price fall would result in a fall in total revenue OR definition of total revenue.
	
	Application
	2 marks for linked application (1+1), e.g.
	   • the percentage rise in quantity demanded is lower than the percentage fall in price (1) as demand is price inelastic OR less than 1/-1(1)
	   • diagram showing inelastic demand (1) showing increased revenue is less than lost revenue (1) or numerical example of revenue changes (1+1).
		(3)

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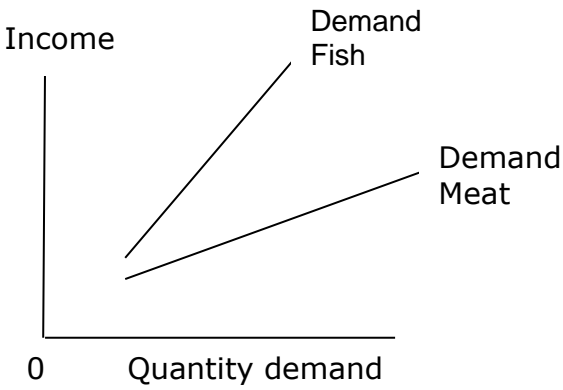| Question Number	Answer	Mark
10(a)	**Application 2** **Application:** 1 mark for applying the formula and 1 mark for correct answer • Calculate the PED 5/11 (1) = 0.4545 (1) NB if the answer given is 0.45 award 2 marks.	**(2)**

Question Number	Answer	Mark
10(b)	D	**(1)**

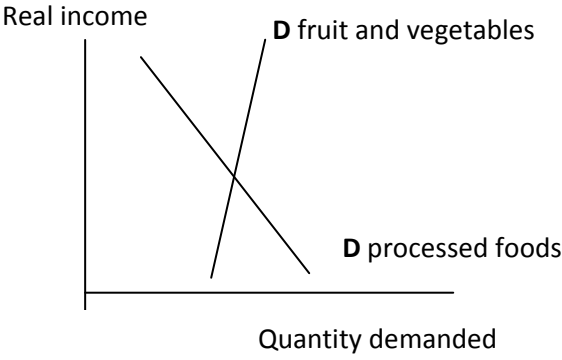| Question Number	Answer	Mark
10(c)	**Knowledge 1, Analysis 1** **Knowledge/understanding:** 1 mark for identifying the impact of the change in price and quantity **Analysis:** 1 mark for linking this to overall impact on total revenue, e.g. • relatively inelastic demand so additional revenue earned from additional price will be greater than lost revenue due to lost quantity (1) so as price rises total revenue rises (1) • may be illustrated diagrammatically – showing total revenue rising as price rises (1) with inelastic demand. (1)	**(2)**

Question Number	Answer	Mark
11	A	**(1)**

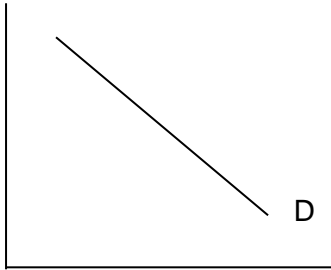| Question Number	Answer	Mark
12	**A (1 mark)** • Definition or formula for income elasticity of demand (responsiveness of demand for a good due to a change in income) (**1 mark**) • Both short haul and long haul flights are income elastic in demand due to figures being above 1 **OR** diagram depicting an income elastic demand for both types of flights. (**1 mark**) • Numerical application: for example, a 10% increase in income leads to a 16% increase in demand for short haul passenger flights and an 18% increase in demand for long haul passenger flights. (**1 mark**) **Rejection marks** • Option B / D incorrect as the information does not refer to cross elasticity of demand or price elasticity of supply. (**1 mark**) • Option C incorrect as inferior goods would have a negative income elasticity of demand / air travel is a normal good as it has a positive income elasticity of demand. (**1 mark**)	**(4)**

Question Number	Answer	Mark
13	• **B** (**1 mark**) • Definition of price elasticity of demand or correct formula (the responsiveness of demand for a good due to a change in its price) or (%ΔQD ÷ %ΔP = PED). **OR** Explanation of price elastic demand (a rise price will cause a greater proportionate fall in demand). (**1 mark**). • Definition of total revenue (the total amount of money received by producers from selling a given quantity of a good / price multiplied by total quantity = total revenue). (**1 mark**) • Calculation of the decrease in total revenue from £150,000 to £120,000 or a reduction of £30,000 / this can be shown by annotation of the diagram. (**1 mark**) • Calculation of price elasticity of demand: -33% ÷ +20% = -1.65 (**1+1 marks**). **NB: Accept answer without minus sign** **NB: Award 1 mark for correct workings if the final calculation is incorrect**	**(4)**

Question Number	Answer	Mark
14	• **D (1 mark)** • Definition of income elasticity of demand or correct formula (the responsiveness of demand for a good due to a change in income) or (%ΔQD ÷ %ΔY = YED). (**1 mark**) • Meat is income elastic in demand (or above 1) compared to Fish which is income inelastic in demand (or below 1). (**1 mark**) **NB: Do not double award with use of rejection technique** • Normal goods have a positive income elasticity of demand (such as meat, milk, eggs and fish). (**1 mark**) • Numerical application, for example, a 10% increase in income leads to a 12% increase in demand for meat or a 7% increase in demand for fish. (**1 mark**) • Diagram depicting demand for meat having a higher income elasticity of demand than that for fish. (**1 mark**) **Rejection marks** • Option A incorrect since no information is provided on price elasticity of demand / option B incorrect since no information is provided on cross elasticity of demand. (**1 mark**) **NB: Award up to 1 mark for rejection of options A and B if the reasons given are the same.** • Option C incorrect since inferior goods have a negative income elasticity of demand or minus figures / the three goods have a positive income elasticity of demand and so are normal goods. (**1 mark**).	**(4)**

Question Number	Answer	Mark

15	• **Answer A (1 mark**)
	
	• Definition of price elasticity of demand or correct formula (the responsiveness of demand for a good due to a change in price, or, %ΔQD ÷ %ΔP). (**1 mark**)
	
	• Correct calculations: 25% ÷ -10% = -2.5 (**1+1 marks**)
	
	    NB: If the calculation shows 2.5 rather than -2.5 but the correct option key is chosen, award 1+1 marks. If the incorrect key is chosen then award 1 mark.
	
	    NB: if the two percentage change calculations are correct (**25%** and **-10%**) but are placed upside down in the overall formula, award 1 mark.
	
	    Rejection marks
	➢ Options C and /or D incorrect since there is a negative or inverse relationship between price and quantity demand / a positive relationship refers to price elasticity of supply. (**1 mark**)
		(4)

Question Number	Answer	Mark
16	• **Answer B (1 mark)** • Definition of income elasticity of demand or correct formula (the responsiveness of demand for a good due to a change in income, or, %ΔQD ÷ %ΔY). (**1 mark**) • Definition of normal good / has a positive income elasticity of demand **OR** inferior good / has a negative income elasticity of demand (**1 mark**) • Application to fruit and vegetables and / or processed foods; this may be in a numerical form (**1 mark**) • Diagram depicting fruit and vegetables a normal goods **OR** processed foods as inferior goods (**1 mark**) Real income **D** fruit and vegetables **D** processed foods Quantity demanded **Rejection marks** ➤ Option A is incorrect since this refers to cross elasticity of demand or complementary goods / no information provided on price. (**1 mark**) ➤ Option C incorrect as we do not have data on price of processed foods and fruit and vegetables – this is more related to price elasticity of demand. (**1 mark**) **NB: do not double award reference to price data** ➤ Option D incorrect as fruit and vegetables have a positive YED and processed foods a negative YED. (**1 mark**) **NB: do not double award here**	(4)

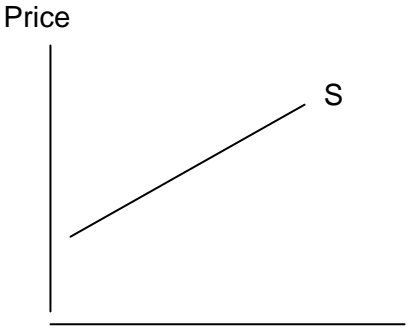| Question Number	Answer	Mark
17	**Correct answer option C (1 mark)** • Definition of cross elasticity of demand or correct formula (the responsiveness in demand for good B due to a change in price of good A, or, %ΔQD good B ÷ %ΔP good A). (**1 mark**) • Goods which have a negative XED are complementary goods / joint demand. (**1 mark**) • Substitutes have a positive XED. (**1 mark**) • Application: an increase in the price of motor vehicles is likely to cause a decrease in demand for petrol (accept vice-versa) (**1 mark**) • Correct diagram depicting a negative XED. (**1 mark**) Price of Motor vehicles Quantity demanded for petrol **Rejection marks** • Option A incorrect since motor vehicles and rail travel are **substitutes with a positive XED** or, Option D incorrect since bus transport and taxis are **substitutes with a positive XED**. NB: need both substitutes and positive XED to award (**1 mark**) • Option B incorrect since bus transport and potatoes have no relationship between them / have an XED value of zero / are likely to be inferior goods with a negative income elasticity of demand. (**1 mark**)	(4)

Question Number	Answer	Mark
18	**Correct option A (1 mark)** • Definition of income elasticity of demand or correct formula (the responsiveness of demand for a good due to a change in income, or, %ΔQD ÷ %ΔY). (**1 mark**) • The demand for fish is income inelastic in both countries since their values are between 0 and 1 or less than 1, or, definition of income inelastic demand (the percentage change in demand is less than the percentage change in income) / demand for fish is more inelastic in Cyprus than Maldives. (**1 mark**) • Application: e.g. a 1% rise in income causes a 0.37% rise in demand for fish in Cyprus and a 0.64% fish in demand for fish in the Maldives. (**1 mark**) **NB: do not award for referring directly to 0.37 and 0.64.** • Diagram depicting a positive income elasticity of demand for fish. (**1 mark**) **Rejection marks** • Option B incorrect since the income elasticity of demand for oils and fats in Cyprus is perfectly income inelastic, or, a change in income causes no change in demand for oils and fats. (**1 mark**) • Option C incorrect since cereals are an inferior good in Cyprus or a normal good in the Maldives **(must use the data).** (**1 mark**) • Option D incorrect since the income elasticity of demand for oils and fats is 0.52 which is less than the demand for fish which is 0.64 in the Maldives. (**1 mark**)	**(4)**

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Question Number	Answer	Mark
19	**Correct option D (1 mark)** • Definition or formula for price elasticity of supply (the responsiveness of supply of a good due to a change in its price, or, %ΔQS ÷ &ΔP). (**1 mark**) • Coffee is inelastic since the answer is between 0 and 1 or less than 1 / coffee is inelastic since the percentage change in supply is less than the percentage change in price • Diagram depicting a price inelastic supply curve. (**1 mark**) • Price elasticity of supply of coffee calculation equals 0.33 (**1 mark**) • Explanation of why coffee may be price inelastic supply e.g. long time period to grow or low stock levels. (**1 mark**) **Rejection marks** • Option A incorrect since no information on income is provided in the question / rather the information concerns price and supply / the question is not concerned with income elasticity of demand. (**1 mark**) • Option B incorrect since price elastic supply would require an answer above 1. (**1 mark**) • Option C incorrect since unit price elastic supply means the answer is 1 / where the percentage change in supply is equal to the percentage change in price. (**1 mark**)	(4)

Question Number	Answer	Mark
20	Correct option C (1 mark) • Definition of income elasticity of demand (the responsiveness of demand for a good due to a change in income, OR, %ΔQD ÷ %ΔY). (1 mark) • Definition of a normal good (as income increases so the demand for a good increases / it has a positive income elasticity of demand). (1 mark) • Definition of an inferior good (as income increases the demand for a good decrease / it has a negative income elasticity of demand). (1 mark) • Use of relevant diagram depicting a normal good or inferior good (1 mark) NB: Award a maximum of 2 marks for definitions • Award for data use: for example, Sri Lanka has a positive income elasticity of demand for cereals at 0.46 and so is a normal good, OR, UK has a negative income elasticity of demand for cereals at -0.02 and so is an inferior good). (1 mark) NB: This can be shown by annotation of the table Rejection marks • Option A incorrect since the income elasticity of demand for tobacco is above 1.0 so must be income elastic in Sri Lanka. (1 mark) • Option B incorrect since the income elasticity of demand for fish in both countries is closer to 0 than for tobacco – so more income inelastic. (1 mark) • Option D incorrect since a 10% increase in income would cause a 6.2% increase in demand for fish in Sri Lanka and a 3.6% increase in demand for fish in the UK. (1 mark)	(4)

Question Number	Answer	Mark
21	**Answer A (1 mark)** • Definition or formula of price elasticity of demand (the responsiveness of demand for a good due to a change in its price or %ΔQD ÷ %ΔP). (**1 mark**) • Definition or formula of income elasticity of demand (the responsiveness of demand for a good due to a change in real income or %ΔQD ÷ %ΔY). (**1 mark**) **NB: a maximum of 2 definition marks available.** • Application to the data: demand for air travel is price inelastic since -0.6 is between 0 and -1.0 (also accept less than 1). (**1 mark**) • Application: demand for air travel is a **normal good** since it has a positive income elasticity of demand / +1.3 is greater than 0 / as income rises so demand rises / this may be shown by diagram. (**1 mark**) **Rejection marks** ➢ Option B incorrect since total revenue will decrease if price falls since demand is price inelastic. (**1 mark**) ➢ Option C incorrect since an inferior good has a negative income elasticity of demand and / demand is price inelastic since it is less than -1.0 (**1 mark**)	(4)

Question Number	Answer	Mark
22	**Answer D (1 mark)**	**(4)**
	• Definition or formula of cross elasticity of demand (the responsiveness in demand for one good due to a change in price of another good, or, %ΔQD good B ÷ %ΔP good A). (**1 mark**)	
	• The goods have a positive cross elasticity of demand / positive gradient (since substitutes). (**1 mark**)	
	• Application: a rise in price of the Apple iPhone causes a rise in demand for RIM Blackberry phones / a fall in price of Apple iPhone causes a fall in demand for RIM Blackberry. (**1 mark**)	
	• Annotation of diagram depicting a change in price of the iPhone and the change in demand for the Blackberry. (**1 mark**)	
	• Complementary goods have a negative cross elasticity of demand (**1 mark**)	
	Rejection marks ➢ Option A incorrect since graph refers to cross elasticity of demand not price elasticity of demand. (**1 mark**) ➢ Option B incorrect since it is complementary goods that have a negative cross elasticity of demand / negative gradient / inverse relationship / as price of one good rises then demand for the other good falls. **NB: Do not double award** (**1 mark**) ➢ Option C incorrect since a zero cross elasticity of demand means there is no relationship between Apple iPhone and the Blackberry / there would be a vertical line in the diagram. (**1 mark**)	

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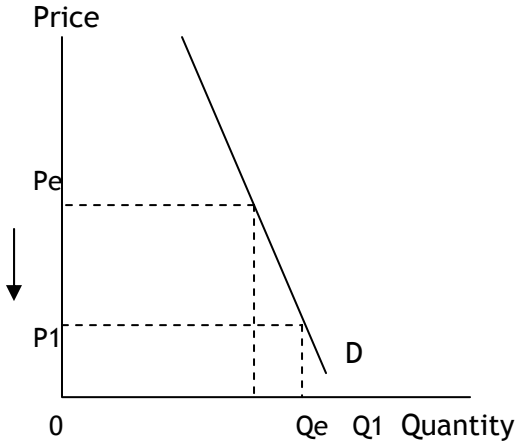
Question Number	Answer	Mark
23	**Answer C (1 mark)**	**(4)**

- Definition or formula of price elasticity of supply (the responsiveness of supply due to a change in price of a good, or, %ΔQS ÷ %ΔP). (**1 mark**)

- Definition of price elastic supply (the percentage change in supply exceeds the percentage change in price of a good) / also accept PES is greater than 1. (**1 mark**)

- Diagram depicting price elastic supply of wheat. (**1 mark**)

- Application: stockpiles of wheat can be quickly released on to the market when required as price rises / taken off the market when required as price falls. (**1 mark**)

Rejection marks
➢ Option A incorrect since demand is not relevant to elasticity of supply (**1 mark**)
➢ Option B incorrect since supply of new housing will be inelastic as it takes a long time to build. (**1 mark**)
➢ Option D incorrect since organic vegetables are highly perishable / the availability of substitutes determine price elasticity of demand. (**1 mark**)

Question Number	Answer	Mark
24	A (1 mark)	(4)
	• Definition or formula of price elasticity of demand (PED): (the responsiveness or sensitivity of demand for a good due to a change in its price) or (%Δ QD ÷ %Δ P)	
	• OR definition of price elastic demand (the percentage change in demand exceeds the percentage change in price) depicting an elastic demand curve and showing how an increase in price will reduce total revenue. (1 mark).	
	• Correct answer for PED of fresh fruit -1.1 (1 mark)	
	• Correct answer for PED of fresh vegetables -1.2 (1mark)	
	• The greater the numerical value of PED, the more price elastic is the demand. (1 mark).	
	Note: accept answers without the minus sign.	
	Note: award no mark for the method in this question.	
	Rejection marks	
	• Option B incorrect since demand for fruit and vegetables are price elastic – so an increase in price will reduce total revenue. (1 mark).	
	• Option C is incorrect since demand for fruit and vegetable is price elastic since the percentage change in demand exceeds the percentage change in price (1 mark).	
	• Option D incorrect since we do not have information on the responsiveness of demand for fresh fruit and vegetables to a change in income. (1 mark)	

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Question Number	Answer	Mark
25	D (1 mark) • Definition or formula for income elasticity of demand (YED): (The responsiveness or sensitivity of demand for a good due to a change in income) or (%Δ QD ÷ %Δ Y). (1 mark). • Cars and taxis are a normal good / since when income rose so did demand for cars and taxis (this could be shown by diagram) (1+1 marks). • Explicit use of data on cars and taxis, for example, weekly real household income has risen from £552 to £604 and demand for cars and taxis has risen from 393 to 402 billion passenger kilometres (1 mark). • NB: award 2 marks for correct calculation of income elasticity of demand: 2.29% ÷ 9.4% = 0.24) (Note: accept 0.2) Rejection marks • Option A incorrect since buses and coaches had an income elasticity of demand of 0. (1 mark). • Option B incorrect since bicycles had a positive income elasticity of demand, shown by demand rising as income rises. (1 mark). • Option C incorrect since the data only shows how demand responds to changes in income; there is no information on the price elasticity of demand for rail travel. (1 mark).	(4)

Question Number	Answer	Mark
26	Answer D • Definition of price elasticity of demand or formula (the responsiveness of demand for a good due to a change in its price or %ΔD ÷ %ΔP) (1 mark). • Definition of income elasticity of demand or formula (the responsiveness of demand for a good due to a change in income or %ΔD ÷ %ΔY) (1 mark) • Milk and cheese are normal goods since they have a positive income elasticity of demand (1 mark). • Milk and cheese are price inelastic in demand since they have values below -1.0 / explanation of inelastic demand in terms of the percentage change in demand being less than the percentage change in price. (1 mark) Rejection marks ➢ Option 'A' or 'C' is incorrect since milk and cheese have a positive income elasticity of demand / do not have a negative income elasticity of demand. (1 mark). ➢ Option B is incorrect since milk and cheese are not substitutes / there is no data on actual demand levels for either good. (1 mark).	(4)

Question Number	Answer	Mark
27	• Answer C • Definition or formula of price elasticity of demand (responsiveness of demand due to a change in price or %ΔD ÷ %ΔP) OR definition of price inelastic demand (the proportionate fall in price is greater than the proportionate rise in quantity demanded) (1 mark) • Explanation of the link between a fall in price, inelastic demand and a fall in total revenue. (1 mark) • Definition of total revenue (price times quantity demanded or the total revenue received from selling a given quantity of output) (1 mark) • Accept a numerical example e.g. a 10% price fall when price elastic of demand is -0.5 will cause total revenue to fall (1 mark) • Diagrammatic analysis showing total revenue falling as price falls (up to 2 marks) ➢ Original revenue area and demand curve appears price inelastic(1) ➢ New and smaller revenue area (1) Rejection marks include ➢ Option A is incorrect since falling prices will reduce the incentives for banana growers to produce since less profit / revenue (1 mark) ➢ Option B is incorrect since an excess demand for bananas would lead to an increase in price (1 mark)	(4)

Question Number	Answer	Mark

28	• Answer D
	
	• Definition or formula of income elasticity of demand (responsiveness of demand due to a change in income; %ΔD ÷ %ΔY) (1 mark).
	• Workings: Income decreases by 10% (1 mark)
	• Workings: Demand decreases by 50% (1 mark)
	    (OR -50%÷ -10% = 5 2 marks)
	• Demand is income elastic or a normal good (1 mark)
	
	Rejection marks include
	  ➤ Option A and C are incorrect since these are inferior goods
		(4)

Question Number	Answer	Mark

29	• Answer C
	
	• Definition or formula for cross elasticity of demand (responsiveness of demand for one good due to a change in price of another good; %ΔD good y ÷ %ΔP good x) (1 mark)
	
	• The goods are substitutes / competitive demand (1 mark)
	
	• Application: a rise in price of rail travel will lead to an increase in demand for private motoring and vice-versa (accept a rise in price of one good causes an increase in demand for the other) (1 mark)
	
	• Diagrammatic analysis showing rail travel and private motoring (1 mark)
	
	• Complementary goods (joint demand) have a negative cross elasticity of demand (1 mark) . (This may be used as a rejection mark for option A)
	
	Rejection marks include
	
	  ➤ Option B incorrect since lamb and wool are in joint supply (1 mark)
	
	  ➤ Option D incorrect since oranges and bus travel are not related (1 mark)
		(4)

Question Number	Answer	Mark
30	Answer C (1) • Definition or formula of cross elasticity of demand (the responsiveness in demand for one good due to a change in price of another good or %ΔQD good B ÷ %ΔP good A) (1) • Games console and software games are complementary goods / joint demand. (1) • Complementary goods have a negative cross elasticity of demand. (1) • A fall in price of games consol will cause an increase in the demand for computer software games. (1) Rejection marks • Option A is incorrect since lamb and chicken are substitutes with a positive cross elasticity of demand / a decrease in price of one will cause a decrease in demand for the other. (1) • Option B is incorrect since bus travel and potatoes are likely to be unrelated goods / inferior goods / they have a zero cross elasticity of demand. (1) • Option D is incorrect since leather and beef are in joint supply. (1)	(4)

Question Number	Answer	Mark
31	Answer B (1 mark) • Definition or formula of price elasticity of demand (e.g. responsiveness of demand for a good due to a change in its price or %ΔQD ÷ %ΔP) (1 mark). • Identification that demand is price inelastic for business travellers and price elastic for leisure travellers (1 mark) • Demand is price inelastic for business travellers so an increase in price will raise total revenue (1 mark). • Demand is price elastic for leisure travellers so a decrease in price will raise total revenue (1 mark). • Relevant diagrammatic analysis showing how a change in price will increase total revenue (up to 2 marks).	(4)

Question Number	Answer	Mark
32	Answer A (1 mark) • Definition of cross elasticity of demand or formula (e.g. responsiveness in demand for one good due to a change in price of another good or %ΔQD good B ÷ %ΔP good A) (1 mark). • Tea and milk are complementary goods / joint demand (1 mark). • Application: for example, an increase in price of tea may cause a decrease in demand for milk and vice-versa. (1 mark). • Diagrammatic analysis with application to tea and milk (1 mark). • Tea and coffee are substitute goods since they have positive cross elasticity of demand (1 mark).	(4)

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Question Number	Answer	Mark
33	**Answer D** • Definition or formula of income elasticity of demand (responsiveness of demand for a good due to a change in income) **(1 mark)**. • Calculation of income elasticity of demand for clothing and footwear (+3.6 accept 3.5 or 3.7) **(1 mark)**. • Calculation of food and soft drinks (+0.63 accept 0.6 or 0.5) **(1 mark)**. • Both categories of food and soft drinks, and clothing and footwear are normal goods **(1 mark)**	(4)

Question Number	Answer	Mark
34	**Answer A** • Definition of cross elasticity of demand • Goods which have a positive cross elasticity of demand are substitutes. • Application to motor vehicles and rail travel. Accept correct diagrammatic analysis depicting a positive cross elasticity of demand.	(4)

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Question Number	Answer	Mark
35	**A**	(1)
	• Definition of price elasticity of demand or its formula (the responsiveness in demand for a good due to a change in its price or the percentage change in demand divided by the percentage change in price) or definition of total revenue(**1 mark**). Note: only award 1 mark for definitions.	
	• Original total revenue is 2 million × £25 = £50 million (**1 mark**).	
	• New total revenue is 2.8 million × £20 = £56 million (**1 mark**).	
	Also award: ➢ Demand rises by 40% or price falls by 20% (**1 mark**) ➢ Demand is price elastic so total revenue will increase if price falls (**1 mark**).	(3)
	Note: Expect to award full marks if calculations and correct option selected	

Question Number	Answer	Mark
36	**C**	(1)
	• Definition of income elasticity of demand or its formula (the responsiveness in demand for a good due to a change in income or, the percentage change in demand divided by the percentage change in income) (**1 mark**).	
	• Fizzy drinks are an inferior good (**1 mark**)	
	• Inferior goods have a negative income elasticity of demand (**1 mark**).	
	• Normal goods have a positive income elasticity of demand / application of data to normal goods (**1 mark**)	
	Also award: ➢ Numerical application such as a 10% rise in income will cause a 2.4% decrease in demand for fizzy drinks (**1 mark**). ➢ Diagram depicting an inferior good (**1 mark**)	(3)

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Question Number	Answer	Mark
37	**Knowledge 1, Application 2, Analysis 2** **Knowledge** 1 mark for understanding/formula of price elasticity of demand i.e. the responsiveness of quantity demanded to a change in price **Application** 2 marks for using data e.g. • reference to fees e.g. £9 250 (1) or PED e.g. -0.5 (1) • 825% increase in fees (2) **Analysis** PED is inelastic (1) so government and universities know that students are prepared to accept higher fees (1) Students are not price sensitive (1) so the level of fees is perhaps less important than other issues e.g. fairness of fees for different courses (1)	**(5)**

Question Number	Answer	Mark
38	**Knowledge 2, Application 2, Analysis 2, Evaluation 2**	

Accept answers based on switching between electricity suppliers as well as switching from electricity to other energy sources

Knowledge/Understanding: 2 marks for identification of two reasons (1+1) e.g.
- It takes time for consumers to switch demand following price changes
- Existing contracts make it difficult to switch in the short term
- More substitutes available in the longer term

Analysis: 1 mark for linked explanation of each reason (1+1) e.g.

- Demand more price inelastic in short run as: takes time for consumers to adjust their consumption habits (habitual behaviour) / imperfect market information / no close substitutes.

- Demand less price inelastic in long run as: some consumers are able to change their habits improved market information / substitutes may emerge such as greater use of gas appliances or installation of solar power panels.

Application: 2 marks for reference to data (1+1), e.g.

- Idea that demand is price inelastic (1) becoming less inelastic / more elastic in the long run (1)

- Use of Extract A e.g. 70% of domestic consumers do not switch (1)

- Development of new technology that reduces electricity consumption / electricity saving lightbulbs or energy efficient kettles (1)

- Increased awareness of measures to become more price sensitive (1) to become more energy efficient (1)

- Costs and time involved in switching to energy-saving appliances (1)

- Improved consumer knowledge of consumption through smart meters (1)

- New firms might enter the market using gas / biofuel / solar / wind / households producing their own rather than buying electricity (1)

Evaluation: 2 marks for two evaluative comments, OR 2 marks for identification and linked development of one comment

- The figures are averages for all households – but great variation exists between households; for example, there may be no effect on households who have little concern for energy saving measures.

- High income households may not be affected by rising electricity prices as it comprises such a small part of total income - so demand remains very price inelastic.

- Some households may suffer from imperfect market knowledge in long run or cannot change their habits – so demand remains very price inelastic.

- Consideration of the magnitude of the change in elasticity (from -0.35 to -0.85); quite substantial in terms of doubling elasticity / or electricity demand still remains price inelastic in the long run as no suitable alternatives.

(8)

EXPERT TUITION

Question Number	Indicative content	Mark
39	**Knowledge 2, Application 2, Analysis 2** • Shows or demonstrates understanding of price elasticity of supply. • Reasons why uranium is price inelastic. • Diagram to show price inelastic supply. • Time. Two years to build a uranium mine in Spain, ten years in 'development', difficult to find in right concentrations. • Factor immobility e.g. uranium mine cannot be switched to other uses • Regulation. 'Have to clear extra hurdles' due to government concerns regarding negative externalities. **NB KAA can be treated as Evaluation and vice versa**	**(6)**

Level	Mark	Descriptor
	0	A completely inaccurate response.
Level 1	1–2	Displays isolated or imprecise knowledge and understanding of terms, concepts, theories and models. Use of generic or irrelevant information or examples. Descriptive approach which has no link between causes and consequences.
Level 2	3–4	Displays elements of knowledge and understanding of economic principles, concepts and theories. Applies economic ideas and relates them to economic problems in context, although does not focus on the broad elements of the question. A narrow response or the answer may lack balance.
Level 3	5–6	Demonstrates accurate knowledge and understanding of the concepts, principles and models. Ability to link knowledge and understanding in context using relevant and focused examples which are fully integrated. Economic ideas are applied appropriately to the broad elements of the question.

EXPERT TUITION

Question Number	Indicative content	Mark
39 continued	**Evaluation 4** Reasons why uranium is price elastic: • Time. Ability to store stockpiles of uranium, Figure 1 surplus suggests and 'stockpiles until 2020'. • 'Uranium is a relatively common metal'. Extract A Line 2 • Distinction between short run and long run and its significance for elasticity of supply. By 2018 mine in Uranium producing '2.2 million kilos a year'.	**(4)**

Level	Mark	Descriptor
	0	No evaluative comments.
Level 1	1–2	Identification of generic evaluative comments without supporting evidence/ reference to context. No evidence of a logical chain of reasoning.
Level 2	3–4	Evaluative comments supported by chains of reasoning and appropriate reference to context. Evaluation is balanced and considers the broad elements of the question.

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Question Number	Answer	Mark
40(a)	**Knowledge 2, Application 2, Analysis 2** **Knowledge/understanding** 1 mark each for any two of the following: • definition or formula of cross elasticity of demand (1) • tobacco cigarettes and e-cigarettes have a positive cross elasticity of demand (1) • understanding of substitute relationship e.g. similar products (1) **Application** 1 mark each for any two of the following: • e-cigarettes seen as less harmful so become more attractive compared to tobacco cigarettes (1) • tougher regulations and growing health awareness on tobacco (1) • they are substitutes because they offer nicotine (1) • applying cigarettes to diagram showing impact on e-cigarettes (1+1) • relative price differences e.g. Figure 1 or tax rises on tobacco (1) • use of numerical example e.g. a 10% rise in the price of tobacco cigarettes results in a less than 10% rise in demand for e-cigarettes **Analysis** Up to 2 marks for any one of the following in linked development OR two limited examples of analysis (1+1): • the increase in the price of traditional cigarettes is resulting in the change in quantity demanded of e-cigarettes increasing • consideration of whether distant or close substitutes • diagram showing relationship between price of one of the product and demand for the other magnitude/time	**(6)**

Question Number	Answer	Mark

40(b)	**Knowledge 2, Application 2**
	
	2 marks for each correct answer, e.g.
	• High-income countries = -4% / +10% (1)
	  =- 0.4 (2) or 0.4 (2)
	• Low-middle-income countries = -5% / +10% (1)
	  = -0.5 (2) or 0.5 (2)
	
	NB Award 1 mark for a correct formula as an alternative for substituting correct figures on up to one occasion.
		(4)

Question Number	Indicative content	Mark
40(c)	**Knowledge 3, Application 3, Analysis 3** • Identification of determinants of price elasticity of demand • Application – PED tobacco cigarettes -0.35; PED e-cigarettes -1.9. Reasons why tobacco cigarettes being relatively price-inelastic, e-cigarettes relatively price-elastic e.g.: • habitual consumption • tobacco broadly defined • proportion of income spent on tobacco cigarettes lower than switching cost of buying reusable e-cigarette kit • number of close substitutes • tobacco addictive necessity, e-cigarettes luxury (not yet addicted to). **NB to access Level 3 candidates need to consider tobacco and e cigarettes.**	**(9)**

"Assess" was used as the command word for this question instead of "Discuss". In order to meet the expectations set out in the sample material the 10 mark level descriptors have been mapped on to the 15 mark levels as below on this one occasion. See Appendix 1 for full details.

Level	Mark	Descriptor
	0	A completely inaccurate response.
Level 1	1–3	Displays isolated or imprecise knowledge and understanding of terms, concepts, theories and models. Use of generic or irrelevant information or examples. Descriptive approach which has no link between causes and consequences.
Level 2	4-6	Displays elements of knowledge and understanding of economic principles, concepts and theories. Applies economic ideas and relates them to economic problems in context, although does not focus on the broad elements of the question. A narrow response or the answer may lack balance.
Level 3	7-9	Demonstrates accurate knowledge and understanding of the concepts, principles and models. Ability to link knowledge and understanding in context using relevant and focused examples which are fully integrated. Economic ideas are applied appropriately to the broad

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		elements of the question.

Question Number	Indicative content	Mark
40(c) continued	**Evaluation 6** • significance of determinant • e-cigarettes habit forming • tobacco cigarettes narrowly defined • proportion of income spent on tobacco cigarettes is rising • becoming closer substitutes • tobacco addiction waning as lost glamour and health warnings, e-cigarettes nicotine addiction. • longer term response to rising tobacco prices	**(6)**

Level	Mark	Descriptor
	0	No evaluative comments.
Level 1	1–3	Identification of generic evaluative comments without supporting evidence/ reference to context. No evidence of a logical chain of reasoning.
Level 2	4–6	Evaluative comments supported by chains of reasoning and appropriate reference to context. Evaluation is balanced and considers the broad elements of the question.

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Question Number	Answer	Mark
41	**Knowledge 1, Application 2, Analysis 2**	
	Knowledge/understanding	
	1 mark for e.g:	
	• definition or formula or diagram of price elasticity of supply. Price elasticity of supply (PES) measures the responsiveness of quantity supplied to a change in price. PES can be calculated using the following formula: PES= percentage change in Quantity Supplied (%Δ in Qs) / percentage change in Price (%Δ in P)	
	Application	
	Linked application focussed on new housing stock (1+1) e.g.	
	• Price elasticity of supply of 1 means unitary elasticity; PES>1 means elastic; PES <1 means inelastic (1)	
	• 1 mark for identifying Supply elasticities in the USA or Finland are at or above unity (1) and 1 mark for identifying a country with particularly low elasticities of supply e.g. the Netherlands or the UK (1).	
	• Candidates who compare the elasticities of one country where supply is elastic and one country where supply is inelastic: e.g. USA +2.0 (1) and UK +0.4 (1).	
	• Supply is particularly unresponsive to prices in the Netherlands, more than ten times less responsive than in the USA (1+1).	
	• A numerical illustration of the effects of price changes in different countries (1+1)	
	Analysis	
	Linked analysis (1+1) e.g.	
	• Above unity PES implying that in response to a demand shock housing output will increase proportionally more than prices (1) and below unity where housing supply is relatively unresponsive (1).	
	• Explaining how it is easier to build new houses in the US compared to the UK (1) where it is more difficult to build new houses e.g. due to planning restrictions in UK (1).	
	• Allow other reasons/factors that affect PES e.g. land availability, technology or time(1+1).	**(5)**

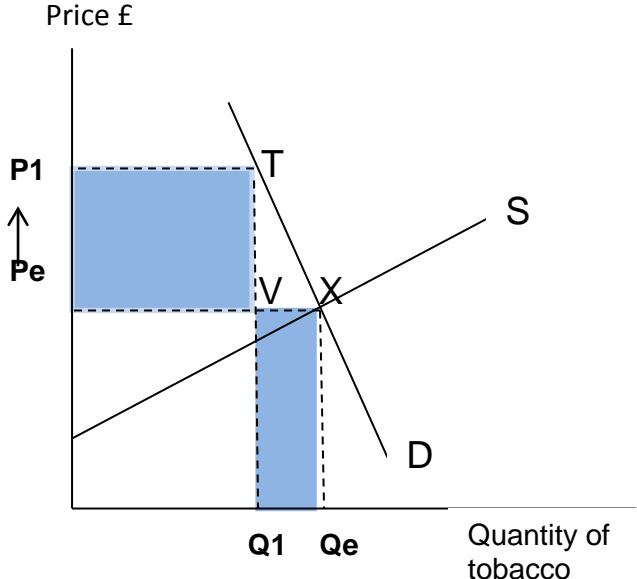| Question Number	Answer	Mark

42	**KAA = 4 marks**
	
	• Definition of price elasticity of supply (the responsiveness of supply of a good due to a change in its price or %ΔQS ÷ %ΔP). (**1 mark**)
	
	• Explanation of price inelastic supply (this may be defined) **OR** diagram depicting price inelastic supply curve for cocoa. **(1 mark)**
	
	• Reasons for supply being price inelastic may include:
	   ➢ Fixed inputs in short run such as available land to plant trees / linked development. (**up to 2 marks**)
	
	   ➢ Takes up to 5 years to grow cocoa / linked development. (**up to 2 marks**)
	
	   ➢ Fluctuating price of cocoa may discourage farmers to grow the commodity / linked development. (**up to 2 marks**)
	
	   ➢ Perishability of cocoa – difficult to store / commodity / linked development. (**up to 2 marks**)
	
	• Accept relevant explanation of why supply of cocoa may be more price elastic in the long run (**up to 2 marks**).
		(4)

Question Number	Answer	Mark
43	**KAA = 6 marks and Evaluation = 4 marks** • Definition of price elasticity of demand (the responsiveness of demand for a good due to a change in its price) or formula (%ΔQD ÷ %ΔP). (**1 mark**) • Explanation of price inelastic demand or price elastic demand in candidate explanation (this may be shown by diagram). (**1 mark**) **NB: Accept one view on price elasticity of demand as KAA and the other view as Evaluation** **Price inelastic in demand:** • Promotions such as advertising, celebrity endorsement or branding / has created customer loyalty / real world example from bottled water. (**1+1 marks**) • Bottled water comprises a small proportion of total income / so a change in price is unlikely to have much effect on demand. (**1+1 marks**) • Consideration of water as being a necessity good which is essential for good health / so consumers more likely to still buy bottled water even as price increases. (**1+1 marks**) • Consideration of habit forming for some consumers to have bottled water / such as place of work or at a leisure event. (**1+1 marks**) **Price elastic in demand** • There are many close substitutes / such as tap water or milk or flavoured drinks / consideration of availability of substitutes improved market knowledge on the quality of bottled water and tap water. (**1+1 marks**) • Bottled water is considered as a luxury good by many / not regarded as offering value for money. (**1+1 marks**)	

		• Consideration of time period e.g. price elasticity of demand of bottled water may vary over time due to increased knowledge / linked development (**1+1 marks**). • Narrow definition of bottled water more likely to be price elastic and broader definition price inelastic / linked development (**1+1 marks**).	**(10)**

Question Number	Answer	Mark
44	**6 KAA marks**	**(10)**
	• Definition or formula for price elasticity of supply (the responsiveness of supply of a good due to a change in its price or the %ΔQS ÷ %ΔP). (**1 mark**)	
	• Diagram showing price inelastic supply and / or price elastic supply, OR a written explanation of one of them (this could include the coefficient). (**1 mark**)	
	• At least one factor input is fixed in the short run but all factor inputs become variable in the long run (**1 mark**)	
	• Supply of new housing is likely to be price inelastic due to capacity / supply constraints (**1 mark**) since:	
	➢ Skills shortage in building following many people leaving the industry during the recession / difficult to get the skilled labour to build house e.g. plumbers, bricklayers, electricians, carpenters. (**1+1 marks**)	
	➢ Building materials shortages such as bricks so difficult to get the materials to build housing / further development e.g. shortage of construction equipment or cement or timber. (**1+1 marks**)	
	➢ Time required to build new housing such as many stages in production process / laying bricks tiling, roofing (**1+1 marks**)	
	➢ Securing planning permission / shortage of land to build on / green belt planning laws (**1+1 marks**).	
	Evaluation (up to 2+2 or 1+3 or 1+1+2 marks) Note: candidates can take the view that supply is inelastic or elastic for KAA and the counter-argument would be evaluation.	
	In the long run, supply is likely to be price elastic since: ➢ Home Builders Federation point out that more people being trained / development of this point e.g. quality of trainees as still need experience on the job / plentiful supply of labour as unemployment is around 7% of workforce / discussion of immigration.	

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> ➢ Home Builders Federation point out that brick making companies are re-opening brick plants / development of this point e.g. materials are being imported to alleviate shortages so they could be price elastic in short run.

> ➢ Danger of a property price bubble where house prices could crash in near future / this might make supply inelastic as firms reluctant to take risk of building more housing.

> ➢ The 'Help to buy' scheme is due to finish in 2016 and has limited funds available / so house builders might be reluctant to invest heavily into increasing capacity.

> ➢ Consideration of stocks of unsold new houses and so supply may be price elastic in short run / especially if recovery is slow.

> ➢ Consideration of regional differences in price elasticity of supply of housing.

> ➢ Consideration of different types of properties, for examples, flats and terraced housing, mansions, may have different price elasticity's of supply.

> ➢ Consideration of low interest rates and availability of credit for house building firms which could make supply price elastic.

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Question Number	Answer	Mark
45	**6 KAA marks** • Definition or formula of price elasticity of demand. (**1 mark**) • Explanation of price inelastic demand (the percentage change in demand is less than the percentage change in price) or numerical application: for example, a 10% rise in price of tobacco might cause a 2% fall in demand. (**1 mark**) • Reference to Extract 2: Demand for tobacco smoking is likely to be price inelastic since total expenditure has increased following a price rise / use of data e.g. consumer expenditure on tobacco increased from £15.1 billion to £15.3 billion following price rise (**1 +1marks**) • Diagram depicting a price inelastic demand curve / showing an expenditure or revenue increase from a price rise (**up to 2 marks**) **NB: accept supply curve shifts depicting a tax increase.** • Tobacco smoking is addictive or habit forming / development of this point (e.g. due to nicotine or socialising) (**up to 2 marks**) • Tobacco smoking has no close substitutes / development of this point (e.g. plastic pipes and chewing gum are weak alternatives (**up to 2 marks**) • Tobacco smoking takes up a small percentage of income / development of this point (e.g. still relatively cheap at £7.40 a pack which could last some time) (**up to 2 marks**) • Extract 2 suggests tobacco smoking is more price inelastic in demand for the manual class workers (29% still smoke) / development of this point (e.g. less	**(10)**

receptive to health warning campaigns or less concerned about the long term implications of smoking).
- Extract 2 suggests tobacco smoking is more price inelastic for a minority of teenagers / as the proportion of 11-15 year olds smoking has not changed over the last 5 years / development of this point (e.g. what constitutes a regular smoker or questioning the data since these children will be restricted by income).

Evaluation (2+2 or 3+1 or 2+1+1 or 4+0 marks)
- Price elasticity of demand may vary between different types of brands of tobacco / development of this point (e.g. switch to lower quality cheaper cigarettes suggest demand is price elastic for these / comprising some 30% of the market).
- Consideration of shifts in the demand curve rather than movement along the demand curve for tobacco / other factors have affected demand than price e.g. health campaigns and change of lifestyle.
- Discussion of smoking statistic for teenagers / expect increases in tax to cause reduction in smoking rates as typically they have low incomes.
- Price elasticity may vary over time e.g. a large drop in tobacco smoking from 45% to 20% of adult population between 1974 and 2010.
- Price elasticity of demand may vary between countries / development with use of an example.
- New technology / development of new substitutes such as e-cigarettes affect price elasticity of demand.
- Discussion on the reliability of the information provided / development of this point (since it is from the anti-smoking pressure group ASH) / the data might not include influence of smuggling.
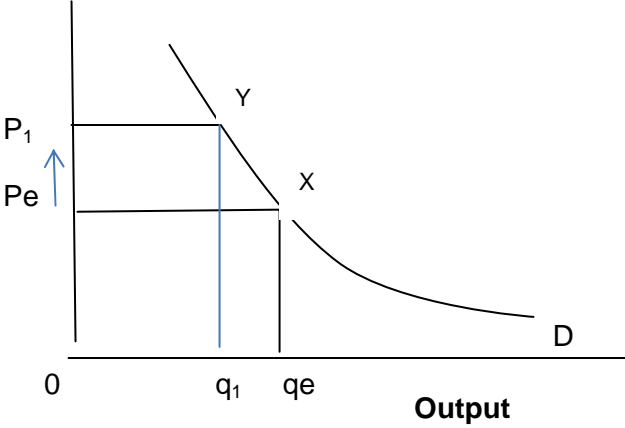
Question Number	Answer	Mark
46	**4 KAA marks and 2 Evaluation marks**	(6)
	• Definition of price elasticity of supply (the responsiveness of supply of a good due to a change in its price, or, $\%\Delta QS \div \%\Delta P$). (1 mark)	
	• Understanding of the distinction between inelastic and elastic supply (this may be defined) This could be shown by diagram (depicting price inelastic or price elastic supply curve for cocoa) (1 mark)	
	NB: Candidates may argue either way – up to 4 KAA marks for one view and 2 evaluation marks for the other view.	
	NB: discussion of how price elasticity of supply may vary over time constitutes evaluation (up to 2 marks)	
	Reasons for supply being price inelastic may include (1 for identification of a point and 1 for development):	
	➢ Fixed inputs in short run such as available land to plant trees.	
	➢ Takes up to 5 years to grow cocoa / harvest mean supply is inelastic.	
	➢ Fluctuating price of cocoa has discouraged farmers to grow this commodity.	
	➢ Perishability of cocoa – difficult to store. Use of data in an evaluative manner.	
	➢ Magnitude of price change makes it difficult for supply to respond in a proportionate way / use of data required here.	
	Reasons for supply being price elastic may include: (1 for identification of a point and 1 for development):	
	➢ Extract 1 indicates that falling prices of cocoa are encouraging farmers to switch into rubber production instead / suggest a high degree of factor mobility.	
	➢ Extract 1 indicates a surplus of 400,000 tonnes of cocoa in 2012 / suggesting it can be stored or stockpiled / suddenly released on to market.	
	➢ Application of fertiliser to cocoa trees can increase yields rapidly.	
	➢ Recession – so lots of unused resources are available / spare capacity.	

Question Number	Answer	Mark
47(a)	4 KAA marks	(6)
	• Definition or formula of price elasticity of demand (responsiveness of demand for a good due to a change in its price, or, %ΔQD ÷ %ΔP) . (1 mark)	
	• Business travel is more inelastic than leisure travel. (accept leisure travel is more elastic). (1 mark)	
	• Both business and leisure travel are inelastic. (1 mark)	
	• Explicit meaning of price inelastic demand (the proportionate change in demand is less than the proportionate change in price or use of figures to this effect). (1 mark)	
	• Diagram(s) depicting demand for business travel as more price inelastic than leisure travel. (1 mark)	
	• Business travel is more essential than leisure travel / people need to earn a living but do not need to go on holiday / leisure travel is a luxury that can be put off. (1+1 marks)	
	• Use of substitutes as a determinant of price elasticity of demand / e.g. leisure travel may have more alternatives available. (1+1 marks)	
	• Proportion of income spent on air travel / e.g. leisure passengers may spend a higher proportion of income compared to business travellers. (1+1 marks)	
	• Numerical application of the figures (e.g. a 10% rise in price will cause just a 2% fall in demand for business travel / but a 7% fall in demand for leisure travel). (1+1 marks)	

Evaluation (1+1 or 2 marks)
- Discussion of size of the differences in price elasticity of demand between business and leisure travellers e.g. leisure travellers are three times more responsive to changes in income than business travellers.

- Price may be less significant for business travel as companies often pay the air fare / demand more inelastic.

- Change in availability of substitutes e.g. more business meetings over the internet so demand for air travel may become more elastic over time.

- Recession may make price elasticity of demand for business travel more elastic / firms become more price conscious.

- There are considerable variations in price elasticity of demand within either category of travellers e.g. for very wealthy leisure travellers air fare changes have no impact on their demand.

- Other things are not equal – other factors might influence the demand for air travel e.g. changing income of travellers or profits of a business.

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Question Number	Answer	Mark
47(b)	6 KAA marks	(8)
	• Definition or formula for cross elasticity of demand (cross elasticity of demand measures the responsiveness of the demand for a good to a change in the price of another good, or, %ΔQD good Y ÷ %ΔP good X). (1 mark)	
	• Substitutes have a positive cross elasticity of demand. (1 mark)	
	• An increase in price of air travel would cause an increase in demand for train travel (vice-versa). (1 mark)	
	• Suitable diagram(s) showing positive cross elasticity of demand for air travel and train travel. (1 mark)	
	• Numerical application: for example, a 10% rise in price of air travel might cause a 5% rise in train travel. (1 mark)	
	• Reference to Extract 1 which suggests air travel and rail travel are substitutes for relatively short distances with almost a quarter of flights from London Heathrow airport being up to 300 miles / continued expansion of Eurostar rail services to more cities / not much difference in the time taken to travel from one place to another.(1+1+1 marks)	
	• Reference to idea that complementary goods have a negative cross elasticity of demand (1 mark).	
	Evaluation (1+1 or 2 marks) • Discussion on the relative strengths or weaknesses of the substitutes / it may vary according to individual circumstances.	
	• Air travel and train travel are weak substitutes for inter-continental flights or where there are limited rail links / example offered such as travel from UK to USA.	
	• Time factor: in the long run XED may change due to the expansion of Eurostar train services / more destinations and faster service across Europe.	

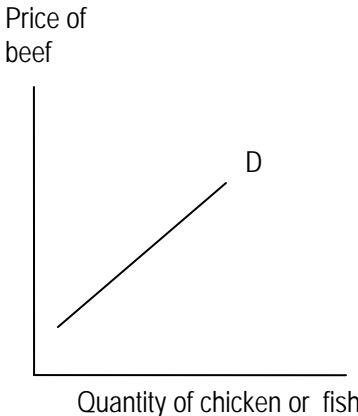|	
	- Air travel and train travel can also be complementary goods / example offered such as people who live in Reading and travel by train from Reading to London Heathrow and then take a flight to Dubai. - Discussion on quality of train services: for example reliability / time to travel between selected destinations / reference to expansion of Eurostar services to Spain, Italy, Holland and Germany.	

Question Number	Answer	Mark
48	**KAA = 4 marks** • Definition or formula of price elasticity of demand (the responsiveness of demand due to a change in price **or** PED = %ΔQD ÷ %ΔP). (**1 mark**) • PED appears to be unitary (unit) elastic **OR**, PED has a value of -1 (accept 1). (**1 mark**) • This is because total revenue is expected to remain the same. (**1 mark**) **NB: Do not award for a response which states '*total revenue remains the same*' unless this is linked to unit elasticity.** • Explanation of unitary (or unit) PED (the percentage change in demand is the same as the percentage change in price). (**1 mark**) • Diagram showing a rise in price and total revenue area remaining the same (0PeXQe = 0P1YQ1). (**2 marks**) 	(4)

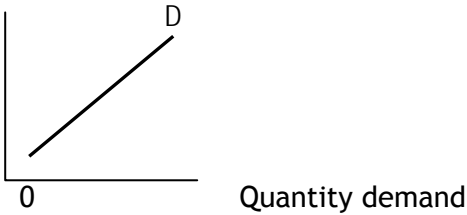| Question Number	Answer	Mark
49(a)	**KAA (4 marks)** • Definition or formula for cross elasticity of demand (the responsiveness in demand for one good due to a change in price of another good or %ΔQD good x ÷ %ΔP good y) (**1 mark**). • Application: a rise in price of cotton has caused an increase in demand for synthetic materials / diagram depicting this relationship (**1 mark**). • Cotton and synthetic materials are substitutes or in competitive demand (**1 mark**). • They have a positive cross elasticity of demand (**1 mark**). • Accept diagrammatic explanation (**1 mark**). • Accept accurate numerical example (**1 mark**).	**(4)**

Question Number	Answer	Mark
49(b)	**KAA (up to 6 marks)**	

KAA (up to 6 marks)

- Definition or formula of price elasticity of supply   (the responsiveness of supply due to a change in price or %ΔQS ÷ %ΔP) (**1 mark**).

- Diagram distinguishing between inelastic and elastic supply **or** a clear written understanding of the difference between price inelastic and price elastic supply (**1 mark**).

Factors which affect the price elasticity of supply of cotton include:

- Time period / it appears to be price inelastic in supply within 100 days which is the growing period / but more elastic after this period (**1+1 marks**).

- Spare capacity in the industry or resources in economy / Extract 1 refers to farmers devoting more land to grow cotton which implies spare capacity (**1+1 marks**).

- Indian Government ban on cotton exports / might contribute to overall inelastic supply for rest of world (**1+1 marks**).

- Ease of entry and exit to the market for farmers / development e.g. problems of raising finance (**1+1 marks**).

- Distinction between short run (at least one input fixed) and long run (all inputs variable) / application to type of inputs (**1+1 marks**).

Evaluation: (2+2 marks or 3+1 marks)

- Evaluative use of the data: cotton may be less price inelastic in supply in long run since although price more than doubles, output is set to increase from 101m bales to 117m bales between 2010 and 2011.

- Discussion of level of stocks: Extract 1 refers to stocks of cotton at their lowest level for five years supply is inelastic / perishability of cotton stocks.

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	- Cotton is dependent on the climate and so no guarantee that supply will be elastic in the long run / problem of flooding might occur next year. - Discussion of the traders who purchased cotton who may release stocks on to the market as price rises. - Discussion of GM cotton seed / e.g. it could makes supply more elastic if it reduces growing period or makes the crop more resistant to change in climate / impact of new technology over time. - Discussion on whether the Indian Government might lift export ban on cotton as prices soar. - Price fluctuations of cotton may discourage farmers from investing to raise supply in long run even as prices rise.	**(10)**

Question Number	Answer	Mark
50(a)	KAA = 4 marks • Definition or formula for cross elasticity of demand (XED): (The responsiveness in demand for good B due to a change in price of good A) or (%Δ QD good B ÷ %Δ P good A). (1 mark). • Reference to the goods being substitutes or in competitive demand (1 mark). • Reference to the goods having a positive cross elasticity of demand (1 mark). • Application: e.g. the rise in price of beef is likely to cause an increase in demand for chicken or fish (1 mark). • Numerical example of substitutes (1 mark). • Correctly labelled diagram depicting price of beef / demand for chicken or fish. This may be shown in two separate diagrams (1 mark).	(6)

Price of beef

D

Quantity of chicken or fish

Evaluation (2 marks or 1+1 marks)
➢ Discussion of how close beef and chicken & fish are as substitutes / beef is a red meat whereas chicken is a white meat / people may eat fish but not beef / weak substitutes.

➢ Figure 1 shows stable chicken prices, suggesting no change in demand – so evaluative use of the data.

➢ Once the sauces put on then not much difference in a beef burger and chicken burger at fast food restaurants.

➢ Big distinction at high quality restaurants.

➢ Other factors may affect the relationship e.g. health warnings on salmonella in chicken.

➢ The demand for beef may be price inelastic so weak substitutes.

Question Number	Answer	Mark
50(b)	KAA = 6 marks • Definition or formula for income elasticity of demand (YED): (The responsiveness or sensitivity of demand for a good due to a change in income) or (%Δ QD ÷ %Δ Y).　(1 mark). • Reference to Extract 1 which suggests beef burgers might be inferior goods (e.g.) fast food restaurants have benefited from recession as consumers switch to burger places (2 marks). NB: this point could be considered as KAA or evaluation. • Explanation of inferior good (as income rises the demand for a good falls) (1 mark). • Inferior goods have a negative YED (1 mark). • Explanation of normal good (as income rises so too will demand for a good) (1 mark). • Normal goods have a positive YED (1 mark). • Numerical example of either normal or inferior good (1 mark). • Correctly labelled diagram depicting a normal good or inferior good (1 mark). Evaluation (2 marks) ➢ Discussion of different types of beef such as high quality beef – some parts are very expensive and so are normal goods; some beef burgers may be considered as inferior goods. Figure 1 refers to 'high quality beef' and 'standard quality beef'. ➢ Discussion of differences in income elasticity of demand e.g. due to different income levels of consumers / consumers in developed and developing countries. ➢ For some consumers this is irrelevant as they do not eat beef e.g. vegetarians.	(8)

EXPERT TUITION

Question Number	Answer	Mark
51	NB: Candidates may develop either point of view on elasticity of supply; be prepared to accept one view as KAA (4 marks) and the other view as evaluation (2 marks). KAA (up to 4 marks) Definition or formula of price elasticity of supply (1 mark). Supply of housing tends to be inelastic in the short run but more elastic in the long run (this may be shown by a diagram – but do not double award) (1 mark) Supply may be inelastic since: ❯ some inputs fixed in the short run / examples such as building development land (1+1 marks). ❯ limited availability of land to build on / time taken to gain planning permission. (1+1 marks) ❯ different stages in building a house (1 mark). ❯ shortages of skilled labour / examples include plumbers and bricklayers (1+1 marks). Evaluation (2 marks) Supply may be more elastic in the long run since: ❯ Extract 1 refers to the sharp fall in supply of new housing due to the fall in house prices / this suggests supply is price elastic in relation to a price fall. ❯ It might be easy for building firms to lay off workers as many are self-employed / on short term contracts. ❯ Spare capacity exists in the building industry / unemployed workers so supply is price elastic. ❯ Discussion of the number of building firms in the industry / ease of entry and exit. ❯ More land allocated to build on / training of skilled labour for building industry. ❯ Changes in planning regulations / make it easier to build housing.	(6)

EXPERT TUITION

Question Number	Answer	Mark
52(a)	KAA = 6 marks • Definition of income elasticity of demand. (1 mark) • Explanation of a normal good (as income increases so will demand increase or vice versa). (1 mark) • Copper is a normal good since it has a positive income elasticity of demand (1 mark). • Explanation of an inferior good (as income increase then demand will decrease)(1 mark). • An inferior good has a negative income elasticity of demand (1 mark) • Data reference (the recession led to a decrease in demand for copper) (Up to 2 marks) • Diagram depicting demand for copper as a normal good (1 mark) Level of income 0 Quantity demand • Accept higher order analysis e.g. 'ceteris paribus' may not hold, so other factors have affected the demand for copper (1 mark) NB: Accept plausible case for stating copper is an inferior good (Lower global economic growth implies incomes rising at a slower rate but demand is falling – referred to in first paragraph of Extract 1) (Up to 2 marks). NB: Cap at 4 marks if no reference to information in Extract 1	(6)

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Question Number	Answer	Mark
52(b)	KAA = 6 marks • Definition or formula of price elasticity of supply (the responsiveness of supply due to a change in price or %ΔS ÷ %ΔP) (1 mark). • Understanding of inelastic or elastic supply (this may be implicit or defined) (1 mark). • Diagram depicting a price inelastic or price elastic supply curve correctly stated (1 mark) Reasons for supply being price inelastic include (2+2+2 marks): ➢ Extract 2 indicates lengthy planning enquiry to develop new mine at Pebble Mill / danger of protests from local communities. ➢ Many fixed inputs in short run such as building roads / rail lines or dams or construction of open cast mine. ➢ Time taken to train local workforce in mining. ➢ Full capacity / no spare stocks of copper. Reasons for supply being price elastic include: ➢ All inputs become variable in long run / understanding of long run. ➢ Huge scale of operations suggests a lot of copper can be produced / spare capacity. ➢ New firms may enter industry attracted by high prices / firms exit as prices collapse. Evaluation (2+2 marks) • Use of data in an evaluative manner e.g. magnitude of price changes make it difficult for supply to respond proportionately in the same manner. • Existing stockpiles could be released on to market – so supply could be elastic in short run / non-perishable commodity so easy to store. • Finite amount of copper available in world – so ultimately highly price inelastic in supply. • Recycling schemes could make supply more elastic as high prices make such schemes profitable. • Economy is coming out of recession so plenty of spare capacity and factor inputs available – so make supply elastic.	(10)

Question Number	Answer	Mark
53(a)	KAA = 4 marks • Definition or formula of price elasticity of supply (the responsiveness of supply of a good due to a change in its price or, %ΔQS ÷ %ΔP) (1 mark). • Supply appears to be price inelastic in the short run / the extract refers to up to 2 years for supply to respond to changes in price of sugar (1+1 marks). • Supply may become relatively price elastic in the long run as farmers have more time grow sugar / New entrants attracted by higher prices / destroy rainforest to grow sugar (1 mark). • Reference to stock piles affecting elasticity either in short run or long run (1 mark). • Diagram showing how price elasticity of supply might change over time (1 mark). • Understanding that in the short run at least one factor input is fixed in quantity whereas in the long run all factor inputs are variable (1 mark).	(4)

Question Number	Answer	Mark
53(b)	KAA = 6 marks • Definition of income elasticity of demand or formula (1 mark). • Definition / outline of a normal good (as income increases so does demand increase or as income decreases so does demand decrease) (1 mark). • Normal goods have a positive income elasticity of demand (1 mark). • Definition / outline of inferior good (as income increases demand decreases or as income decreases demand increases) (1 mark). • Inferior goods have a negative income elasticity of demand (1 mark). • Numerical example of either a normal or inferior good (1 mark) • Other examples of either inferior goods / normal goods (1 mark) • Reference to last paragraph in Extract 2: the recession means falling income / but sales of chocolate have increase so it appears to be an inferior good (1 mark). • Diagram depicting chocolate an inferior or normal good (1 mark) Evaluation (2+2 marks or 3+1 marks or 4 marks) ➢ The reason why chocolate and sweets might be regarded as inferior goods in a recession is because they are relatively cheaper than other leisure based products such as holidays or entertainment. ➢ Chocolate and sweets are not inferior goods when (real) incomes increase. They are more like luxury goods as non-essential. ➢ All other things may not be equal (not ceteris paribus) since other factors may have caused the increase in sales of chocolate such as consumer preferences/need for comfort eating / price of chocolate may have fallen. ➢ Discussion on the type of chocolate and sweets – there are various cheap brands (for example, low cocoa percentage mass produced bars) and also very expensive brands (for example, hand-made chocolate). The latter are likely to be luxury goods with a high positive income elasticity of demand. ➢ Data incomplete on different types of chocolate and other factors that might determine the demand for chocolate.	(10)

EXPERT TUITION

Question Number	Answer	Mark
54	**Award up to 4 marks for KAA:** • Definition / understanding of price elasticity of demand. (1) • Understanding of price inelastic demand (the proportionate change in demand is less than the proportionate change in price). This may be shown by a diagram. (1) • Food likely to be price inelastic in demand as a whole since essential good / necessity. (1) • No substitute for food (1) • Numerical application of price inelastic demand. (1) • Food is price inelastic in demand as spending on it comprises relatively small proportion of total income (1) **Evaluation (2)** • Depends on type of food / luxury items such as caviar / eating out at restaurants may be price elastic in demand. • Discussion of broad and narrow definition of food (food as a whole is price inelastic in demand). • Comparison of different income groups / depends on whether a developed or developing country.	(6)

Question Number	Answer	Mark
55	**Explanation KAA up to 4 marks:** • Definition or formula of income elasticity of demand (responsiveness of demand for a good due to a change in income). (1) • Demand for new cars appear income elastic since proportionate change in demand is greater than the proportionate change in income / OR YED is greater than 1 / OR use of figures (1) • Reference to the data: 1% fall in income has lead to a 21.8% fall in demand (1). • Calculation of income elasticity of demand is 21.8 (1). NB Do not award if answer states 21.8<u>%</u> • Cars are a normal good (accept luxury) / they have a positive income elasticity of demand (1). • Diagram depicting income elastic demand for new cars (1) **Evaluation (2)** • Depends on type of car e.g. luxury cars may have a different income elasticity of demand than smaller cars. • Discussion of second hand cars which may be less income elastic in demand. They may even be inferior goods. • YED for cars may change over time. • People unlikely to purchase new car if uncertainty over future employment prospects and lack of consumer confidence (income elastic). • Other factors e.g. the availability of finance might also be significant in determining changes in demand.	(6)

Question Number	Answer	Mark
56	KAA 4 marks • Definition or formula of price elasticity of supply (e.g. responsiveness of supply of a good due to a change in its price or %Δ Quantity Supply ÷ %Δ Price) (1 mark) • Short-run: supply appears price inelastic / major oil producers cannot raise production due to long period of under-investment (up to 2 marks) • Long-run: supply appears more price elastic (less price inelastic) / the high price of oil acts as financial incentive to firms to invest more (up to 2 marks) • NB: If candidate just refers to supply being inelastic in the short run and elastic in the long run with no explanation, award 1 mark • Extract indicates increase in investment, for example, North Sea / Brazil /Azerbaijan (1 mark) • Understanding of distinction between short-run and long-run in economics (at least one factor input is fixed in short run but all inputs are variable in the long run) (1 mark) Evaluation (2 marks for one factor) ➢ Magnitude: major discoveries of oil may still be made, for example, in the Arctic and Antarctica, which could lead to greater price elasticity of supply in long run. ➢ Development of new technology to locate and extract oil. ➢ The fall in oil prices indicate much volatility in the oil market – oil producers are unlikely to invest in expanding capacity under such circumstances. Supply could be price inelastic. ➢ Oil may be price elastic from middle-east as easy to cut production when prices fall. ➢ Discussion on the availability of stockpiles of oil ➢ Oil is a finite resources and so ultimately is price inelastic in supply.	(6)

Question Number	Answer	Mark
57	KAA 6 marks • Definition or formula of income elasticity of demand (1 mark) • Bus travel is a normal good since as income rises so does demand for a good or service rise (1 mark) • Explicit reference to data in Figure 3 (household weekly income risen from £397 to £615 and bus travel increased from 5.0 billion km to 5.4 billion km) (1 mark). • A normal good has a positive income elasticity of demand (1 mark). • Calculation of income elasticity of demand as 0.14 (2 marks) (Award 1 mark if candidate has calculated either percentage increase in income at 54.9% or percentage change in bus travel at 8%) • Bus travel is income inelastic in demand (1 mark) • Definition of inferior good (as income rises, demand for a good or service falls (1 mark) • An inferior good has a negative income elasticity of demand) (1 mark). • Accept diagram showing normal good (rising income and quantity demanded) (1 mark)	(6)

Question Number	Answer	Mark
58(a)	• Definition or formula of price elasticity of demand (**1 mark**) • Demand is likely to be price inelastic / it is an essential good (**1 + 1 marks**) **Evaluation (up to 2 marks for either point)** • Significance of price inelastic demand, for example, Extract 1 refers to food riots following price increase. • No close substitutes exist for rice in many developing countries.	(5)

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Question Number	Answer	Mark
58(b)	• Definition or formula of price elasticity of supply (**1 mark**) • Supply may be inelastic in the short run / due to time taken to grow (**1 mark**). • Supply is relatively price elastic in the long run / as farmers give up their jobs in towns and cities and return to work the fields (**1 + 1 marks**). • Diagram showing how price elasticity of supply might change over time (**1 mark**). • Understanding that in the short run, at least one factor input is fixed in quantity whereas in the long run all factor inputs are variable (**1 mark**). **Evaluation (2 + 2 marks)** • Supply could be relatively elastic in the short run too since up to four harvests of rice can be planted each year. • Discussion on the availability of land for growing rice / could switch land use from other types of crops to rice production / finite nature of land. • Discussion on the mobility of factor inputs, for example, growing rice requires limited skills so plentiful supply of labour. • Discussion on level of spare capacity in the economy. • Discussion on the quality of farmland after storms, flooding and drought. This could make supply less elastic. • Discussion on how long the price of rice will remain high – perhaps rice prices could fall dramatically over next few years if supply increases worldwide.	(9)

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Question Number	Answer	Mark
59	**Knowledge, Application & Analysis: (up to 6 marks)**	
	• Definition or formula of cross elasticity of demand (**1 mark**)	
	• Use of extract, e.g. lines 10/11 refer to nicotine patches and gum may reduce dependency on tobacco (**1 mark**)	
	• Cigarettes and nicotine replacement products are substitutes / with a positive cross elasticity of demand (**1+1 marks**).	
	• Complementary goals have a negative cross elasticity of demand (**1 mark**).	
	• Application: a rise in price of nicotine gum will cause a rise in demand for cigarettes **or** a fall in price of nicotine gum will cause a fall in demand for cigarettes (**2 marks**). Alternatively, award 1 mark if candidate refers to a change in price of tobacco on the demand for nicotine replacement products.	
	• Diagram depicting the relationship (**1 mark**). Candidates do not need diagram for complete marks.	
	Evaluation (2+2 marks or 3+1 marks).	(10)
	➤ Weak / low positive relationship since nicotine replacement products are poor substitutes / some replacement products are more effective than others.	
	➤ Weak / low positive relationship since tobacco is highly addictive.	
	➤ Nicotine replacement products may even be offered free on NHS – yet many people still smoke cigarettes.	
	➤ Some smokers do not want to give up – so little impact here / XED = 0.	
	➤ Nicotine replacement products are unlikely to impact on people just starting to smoke or who smoke for social reasons.	

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