Mark Scheme (Results)

Summer 2013

GCE Economics (6EC01/01)

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.

- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.

- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.

- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.

- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.

- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.

- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.

- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

NB: candidates may achieve up to 3 explanation marks even if incorrect option is selected.

NB: candidates may achieve up to 3 marks for explaining three incorrect options (provided three different reasons are offered and each option key is explicitly rejected).

Question Number	Answer	Mark

1	Correct option D (**1 mark**)
	
	• Definition of specialisation or division of labour (labour allocate all their time in producing just one good or service) (**1 mark**)
	
	• Definition of production possibility frontier (maximum possible output combinations of two goods or services an economy can achieve when all resources are fully efficiently employed **or**, the maximum output potential for Bob and Wendy) (**1 mark**)
	
	• Identification that Wendy should produce bathrooms and Bob bedrooms / reason is due to different opportunity cost or efficiency or productivity (**1+1 marks**)
	
	• Relevant numerical application: for example, Wendy can specialise in tiling bathroom floors and increase output to 4 per week and Bob can specialise in decorating bedrooms and increase output to 4 per week (this may be shown on diagram). (**1 mark**)
	
	  NB: this may include calculations of opportunity cost.
	
	  Rejection marks
	• Option A incorrect since opportunity cost is different - with a numerical example e.g. to decorate 1 bedroom Bob has an opportunity cost of 0.5 tiling of a bathroom whereas for Wendy the opportunity cost of decorating 1 bedroom is 2 tiling of a bathroom / opportunity cost differs since they have different gradients on their production possibilities. (**1 mark**)
	
	• Option B incorrect since Wendy can only decorate 2 bedrooms per week whereas Bob can decorate 4 bedrooms per week. (**1 mark**)
	
	• Option C incorrect since Bob has a higher opportunity cost of tiling 1 bathroom floor (forgo decorating 2 bedrooms compared to Wendy who forgoes decorating just 0.5 bedrooms). (**1 mark**)
		(4)

Question Number	Answer	Mark
2	Correct option D (**1 mark**) • Regulations increase production costs (**1 mark**) • Application: for example, more space needed / larger barns / bigger cages / free range hens (**1 mark**) • Written explanation of supply decreasing (**1 mark**) or diagrammatic analysis which shows a decrease in supply / higher price of eggs (**1+1 marks**) **Rejection marks** • Option A incorrect since a health scare would cause the demand for eggs to decrease and so push price down. (**1 mark**) • Option B incorrect since a decrease in the price of feed for hens would reduce production costs, leading to lower prices of eggs (**1 mark**) • Option C incorrect since a reduction in tax on eggs will shift supply outwards and so put pressure on price to fall (also accept idea that eggs are not taxed since essential good). (**1 mark**)	(4)

Question Number	Answer	Mark
3	Correct option B (**1 mark**) • Definition of producer surplus (the difference between the price producers are willing to supply to the market and the actual market price, **OR**, the area between the supply curve and equilibrium price line). (**1 mark**) • Identification of original area of producer surplus on diagram or written as PeXY (**1 mark**) • Annotation of the diagram to show an increase in the demand curve with a higher price (**1 mark**) and the increase in area of producer surplus or new level of producer surplus.(**1 mark**) **Rejection marks** • Options A and C incorrect since an increase in demand will cause an increase in price. (**1 mark**) **NB: do not double award if candidate has already gained a mark for showing an increase in price on the diagram.** • Option D incorrect as an increase in demand will cause an increase in consumer surplus (this must be shown on diagram) (**1 mark**)	(4)

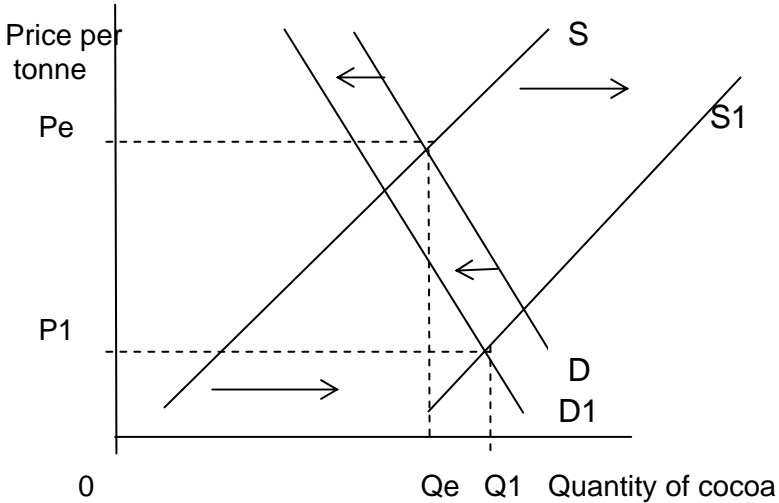| Question Number	Answer	Mark
4	Correct answer option A (**1 mark**) • Written explanation that an increase in demand for new apps causes an increase in wage rates for app programmers(**1 mark**), **OR**, Annotation of diagrams showing an increase in demand for new apps and app programmers / with new equilibrium wage rate identified. (**1+1 marks**) • Identification of demand for labour as a derived demand (**1 mark**) **Rejection marks** • Option B incorrect since the demand for app programmers will increase in order to meet the increase in demand for new apps. (**1 mark**) • Option C incorrect since a decrease in supply of app programmers would be caused by factors such as worse working conditions or longer training periods. (**1 mark**) • Option D incorrect since total revenue should increase as the demand for tablets are complementary. (**1 mark**)	(4)

Question Number	Answer	Mark
5	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
6	Correct option B (**1 mark**) • Definition of subsidy (government grant to firms to increase production or lower price). (**1 mark**) • The subsidy acts to reduce production costs (or the withdrawal of a subsidy increases production costs)(**1 mark** • **NB: many candidates might include a reduction of production costs in the definition – the mark is awarded for the reduction in costs and not for the definition of subsidy.** • Rail firms have less revenue to fund train services and so cut back on supply (**1 mark**) • NB Accept diagrammatic explanation which shows supply curve shifting inwards as subsidy is cut / with equilibrium price increasing. (**1+1 marks**) • NB: accept diagram depicting the imposition of a subsidy (**1 mark**) **Rejection marks** • Option A incorrect since external costs likely to increase as more people switch to motoring so more air pollution or congestion. (**1 mark**) • Option C incorrect since as demand for train services likely to fall due to higher rail fares. (**1 mark**) • Option D incorrect since air travel and train services are substitutes so an increase in train fares is likely to cause an increase in demand for air travel which raise air fares. (**1 mark**)	(4)

Question Number	Answer	Mark
7	Correct option C **(1 mark)**	**(4)**
	• Definition of welfare loss (the excess of social cost over social benefit for a given output). **(1 mark)**	
	• Identification or annotation of diagram to show welfare loss of XWY. **(1 mark)**	
	• Annotation of diagram to show how a cut in output will reduce the area of welfare loss **(1 mark)**	
	• Identification of the free market equilibrium as position X or quantity Qe or as MPC=MPB and the social optimum equilibrium as position Y or quantity Q1 or MSC=MSB. This might be identified on the diagram. **(1 mark)**	
	• Definition of external costs: (costs external to an exchange / negative third party effects / costs which the price mechanism ignores / costs outside of the market transaction / the difference between social costs and private costs / negative spillover effects). **(1 mark)**	
	• Application to quarrying stone: external costs might include noise pollution from lorries / fall in nearby property prices / air pollution from the dust / damage to wildlife). **(1 mark)**	
	NB: do not award for market failure	
	Rejection marks • Option A incorrect since the social optimum equilibrium quantity Q1 is less than the free market equilibrium quantity Qe (must state the actual quantity positions). **(1 mark). NB: Do not double award.**	
	• Option B incorrect since welfare loss is area XWY. **(1 mark). NB: Do not double award.**	
	• Option D incorrect since at the free market equilibrium marginal social benefit (X) is less than marginal social costs (W) (must state the actual positions here). **(1 mark)**	

Question Number	Answer	Mark
8	Correct option A (**1 mark**)	(4)
	• Definition of market failure (the price mechanism allocates resources inefficiently or leads to a net welfare loss). (**1 mark**)	
	• Definition of free market economy (resources are allocated by the price mechanism). (**1 mark**)	
	• Definition of external benefits (positive third party effects / benefits external to an exchange / positive spillover effects / benefits outside a market transaction / benefits the price mechanism ignores / the difference between social benefits and private benefits). (**1 mark**) **NB: a maximum of 2 marks available for definitions**	
	• Application: external benefits from education include a more skilled or productive workforce which could generate greater income / profits / tax revenue / quality of life. (**1 mark**)	
	• Accept diagrammatic analysis of external benefits in consumption. (**1 mark**)	
	Rejection marks • Option B incorrect since firms entering the market in response to an increase in demand indicates that the price mechanism is working by offering greater profit incentives. (**1 mark**)	
	• Option C incorrect since internalising external costs mean the social optimum position is reached where MSB=MSC. (**1 mark**)	
	• Option D incorrect since government intervention which leads to a misallocation of resources is an example of government failure. (**1 mark**)	

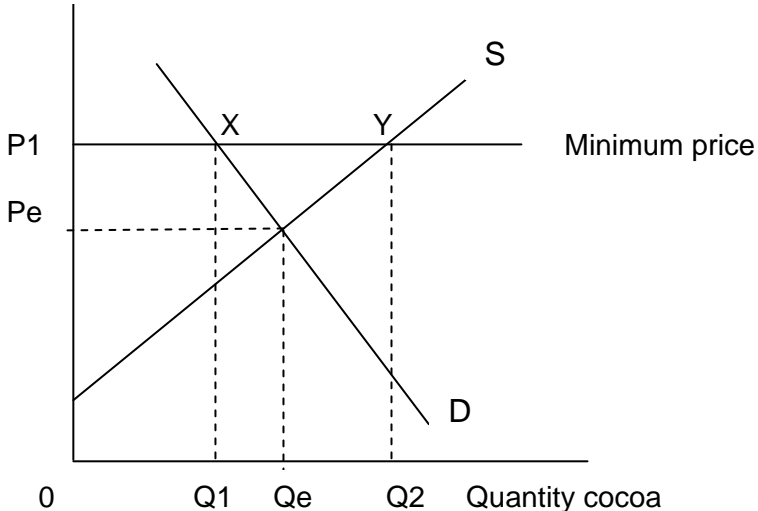| Question Number	Answer	Mark
9(a)	**6 KAA marks** • Explicit data reference to the fall in price of cocoa (£2,153 to £1,410 a tonne / a fall of 35%) (**1 mark**) • Demand has decreased due to the decrease in consumption in Europe or recession. (**1 mark**) • Supply has increased due to very good harvest in Ivory Coast. (**1 mark**) • Diagram (**up to 4 marks**) ➢ Original demand and supply curve with equilibrium price identified (**1**) ➢ Decrease in demand curve (**1**) ➢ Increase in supply curve (**1**) ➢ New equilibrium price identified (**1**) **NB: If just one curve shifted - award a maximum of 2 marks for diagram.** **NB: If one curve shifted incorrectly - award a maximum of 2 marks for diagram.** **NB: If no diagram offered – award a maximum of 3 marks.**	(6)

Question Number	Answer	Mark
9(b)	**4 KAA marks and 2 Evaluation marks**	(6)

Definitions placed in flow:

9(b)

4 KAA marks and 2 Evaluation 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)**

- 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
9(c)	**6 KAA marks** • A decrease in price of cocoa will reduce production costs for companies making chocolate (**1 mark**) • Chocolate companies might respond by reducing the price of chocolate bars / increasing supply of chocolate bars (**1+1 marks**) • Diagram which shifts the supply curve outwards and reduces price (NB: do not award if diagram refers to cocoa market) (**1 mark**) • Increase in producer surplus / profits.(**1+1 marks**) • Increase in share price / dividends for chocolate companies. (**1+1 marks**) • Increase in employment in chocolate companies. (**1 mark**) • Increase funds for investment / for example into new chocolate products / advertising / new machinery (**1+1+1 marks**) • Chocolate companies may purchase extra stock of cocoa since it is cheaper and so can use for later (**1 mark**) **Evaluation (2 marks or 1+1 marks)** • Extract 1 suggests that cocoa is not that significant as a cost of production since it only forms 6% of the price of a bar of chocolate / so firms may simply keep price of chocolate the same. • Other ingredients could more important in affecting the price of chocolate, for example, milk or sugar. • Other things may not be equal e.g. there could be an increase in labour costs which offset the decrease in cocoa prices. • Discussion of the magnitude and time period of price changes of cocoa / using the data.	(8)

Question Number	Answer	Mark
9(d)*	**8 KAA marks (1+1+1+1+2+2 or 2+2+2+2 or 3+3+2)** • Fluctuating prices may be an example of market failure. (**1 mark**) Fluctuating cocoa prices may lead to: • Uncertainty about the future (**1 mark**) • Identification mark from extract: 'instability in income, employment and investment' (**1 mark**) Development of this: ➢ Low prices may decrease revenue and incomes / high prices may increase revenue and incomes (**1+1 marks**) ➢ Diagrammatic analysis of unstable price and revenue (linked to effects on producer revenue)(**2 marks**) ➢ Losses when cocoa prices low / farmers may exit the market / lose land / fall into poverty. (**1+1+1 marks** ➢ Unstable employment or seasonal unemployment / knock-on effects for local communities. (**1+1 marks**) ➢ Unstable investment could lead to less improvement in production / e.g. fertilisers and trees, fencing and irrigation (**1+1 marks**) ➢ Diversification into alternative crops such as rubber production / depends on mobility of factors. (**1+1 marks**) **NB: Accept overlap between these points**	**(14)**

Evaluation 6 marks   (1+1+2+2 or 2+2+2 or 3+3)

- Discussion of significance of price elasticity of demand for cocoa e.g. if price inelastic / high prices may lead to high revenue and profits for farmers / funds could be used to increase investment.

- Discussion of significance of price elasticity of supply of cocoa e.g. inelastic in short run / difficult for cocoa farmers to respond to rising or falling prices.

- Discussion of size of price fluctuations through explicit use of information provided / massive changes over a few months could destabilise whole market.

- Discussion of cyclical pattern of price fluctuations / application to Figure 1.

- Time factor: long term trend in commodity prices is upward due to rapid growth of emerging markets in China and India / changing tastes towards chocolate in these countries / can expect significant profits for cocoa farmers in the long run.

- Government intervention or producers setting up a scheme, for example, explanation of buffer stocks or national minimum price (**up to 2 marks**).

Question Number	Answer	Mark
9(e)*	**8 KAA marks** **NB Accept answers which consider commodities other than cocoa** • Definition of a minimum price scheme (a floor price / minimum price below which cocoa cannot fall). (**1 mark**) • Diagram and explanation (**up to 4 marks**) Price per tonne ➢ Demand and supply curves with original equilibrium price identified. (**1**) ➢ Minimum price line drawn in (**Do not accept one drawn below the free market equilibrium price**). (**1**) ➢ Identify the excess supply or surplus cocoa as XY or Q1Q2. (**1**) ➢ Area of spending by government agency as XYQ2Q1 (**1**) ➢ The overall new level of revenue for farmers as 0P1YQ2 (**1**) **NB: If no relevant diagram, award maximum of 4 KAA marks.**	(14)

Economic effects may include:

➤ Reduction in price fluctuations / development of this point e.g. more stable income stream for farmers. **(1+1 marks)**

➤ Increase in revenue and profit for farmers. **(1 marks)**

➤ Increase government expenditure on purchasing the surplus. **(1 mark)**

➤ Increase in employment / development of this point e.g. less absolute poverty among farmers. **(1+1 marks)**

➤ Increase in investment by farmers / development of this point e.g. new fertilisers or planting of more cocoa trees. **(1+1 marks)**

➤ Lower consumer surplus or higher producer surplus / areas identified on diagram. **(1+1 marks)**

➤ Impact on consumers e.g. higher prices and affordability of goods. **(1 mark)**

➤ Increase in production costs for chocolate manufacturers such as Cadbury and Nestle / development of this point e.g. lower profit.**(1+1 marks)**

➤ Surpluses can be sold overseas to countries where demand is increasing e.g. China and India.**(1+1 marks)**

NB: accept any relevant macroeconomic argument

Evaluation 6 marks (2+2+2 or 3+3 or 1+1+1+1+2)
The scheme may not be successful since:

- Minimum price scheme may lead to government failure.

- Problem of rising prices – prices can still fluctuate above the minimum price / may harm consumers.

- Problem for Ivory Coast government of purchasing surplus cocoa in the auctions / difficult for a developing country / cost of storage / opportunity cost to government expenditure / example of this.

- Discussion on position of the minimum price in relation to free market price e.g. if below there may be no effect / if significantly above there may be too high a cost to maintain minimum price scheme.

- Discussion of price elasticity of demand or supply of cocoa and how this affects size of surplus / government expenditure on scheme.

- Consumers may seek alternative supplies of cocoa from other countries e.g. Ghana and Nigeria / issue of 40% of global supply from Ivory Coast / non-compliance.

- It may reduce competitiveness / reduce efficiency of farmers / less productivity since offered a guaranteed price.

- Minimum price schemes have tended to fail for other commodities e.g. tin, rubber, coffee and wool / scheme unworkable in long run due to the high cost.

- Dumping of surpluses abroad could undermine cocoa producers in other countries / discussion of perishability.

NB: Do not award for discussion of buffer stock scheme but be prepared to award marks where relevant e.g. the minimum price and purchase of stock.

Question Number	Answer	Mark
10(a)	**6 KAA marks**	**(6)**
	• Identification of two reasons. (**1+1 marks**) • Development of the two reasons. (**2+2 or 3+1 marks**) • Award for demand and supply diagram which shows an increase in demand. (**1 mark**) **Reasons include:** ➢ London Heathrow is major hub for the global economy / increase in trade or globalisation / this might be due to greater investment between countries / more business meetings overseas. ➢ Increase in population / this may be due to immigration / especially with the expansion of the EU and free movement of labour / job opportunities. ➢ Increase in real income / so people can afford to travel more / air travel is a normal good / a positive income elasticity of demand and use of Figure 1. ➢ Fall in price / use of data in figure 1 which shows price elasticity of demand / greater competition between airlines such as EasyJet and Ryanair / increase in number of airlines. ➢ Change in fashion or taste / globalisation has encouraged people to be more adventurous. ➢ Advertising / people become more aware of holiday resorts or exotic destinations / this may be through internet or television programmes. ➢ Award for new runway which will increase capacity and so encourage more customers. **NB: do not award for just stating that the airport is already at full capacity.** **NB: accept answers which do not refer to the information provided.**	

Question Number	Answer	Mark
10(b)	**4 KAA marks** • 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)**	**(6)**

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.

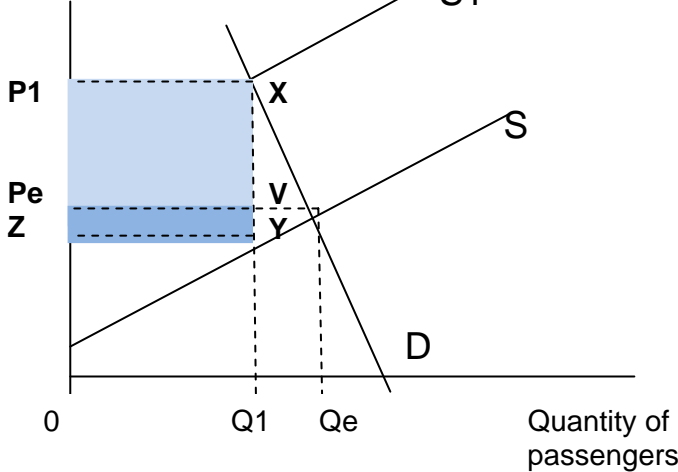| Question Number	Answer	Mark
10(c)	**6 KAA marks** • Definition or formula for cross elasticity of demand (cross elasticity of demand measures the responsiveness of the demand for a good to a change in the price of another good, **or**, %ΔQD good Y ÷ %ΔP good X). (**1 mark**) • Substitutes have a positive 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.	(8)

	• 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
10(d)*	**8 KAA marks (2+2+2+2 or 3+3+2)** NB: accept macroeconomic arguments when relevant for both KAA and evaluation **Case for building third runway at Heathrow airport** • The airport is already at 99.2% capacity – it is virtually at full capacity / so it is vulnerable to any disruption such as snow or volcanic ash or strike action / issue of safety with such little spare capacity / problem of airplanes 'stacking' over London waiting to land. **(1+1+1 marks)** • Air passenger demand at Heathrow airport is forecast to grow by 15 million by 2020 / needs to expand if it is to remain an important international hub for the global economy / population increase in London / without expansion there is more pressure placed on other airports in London region / Figure 1 shows a high income elasticity of demand for air travel. **(1+1+1 marks)** • Research by business consultancy indicates an extra 140,000 jobs could be created by expansion of the airport / development of this point e.g. increases in ground staff, air crew, shops at the airport / multiplier or 'knock-on effects'. **(1+1+1 marks)** • £4.5 billion might be lost from GDP due to less investment / development of this point e.g. firms decide to invest in other countries with better airport provision such as France and Holland / who have significant spare capacity. **(1+1+1 marks)** • £1.6 billion loss of trade with emerging markets / development of this point e.g. Heathrow needs to accommodate more flights to emerging markets of Brazil, India and China who are growing rapidly. **(1+1 marks)** • Accept external benefits argument which might include diagrammatic analysis **(up to 2 marks)** • Building an extra runway at Heathrow airport is a lot cheaper than building a new super-sized airport in the Thames estuary at a cost exceeding £50 billion / airlines and passengers have a preference to fly into Heathrow rather than other airports around London. **(1+1 marks)**	(14)

- Increased tax revenue for government e.g. Air Passenger Duties and income tax revenue /so could reduce fiscal deficit. (**1+1 marks**)

6 Evaluation marks (2+2+2 or 3+3 or 4+2 or 1+1+2+2)

NB: award a maximum of four different evaluation points:

- Significant external costs associated with expansion of Heathrow airport e.g. noise pollution from the flights / air pollution which could harm health of local population / road congestion around airport / visual eyesore / damage to wildlife / displacement of homes to build third runway / public protests / accept external costs diagram. (**NB: only award 1 mark for listing examples of external costs unless developed**)

- Difficulty of calculating the benefits and costs from the third runway at Heathrow / e.g. long time period of projection / issue of planning enquiries before runway is built.

- The third runway might be unnecessary since almost a quarter of flights from Heathrow are less than 300 miles and could be better served by train travel / especially with expansion of Eurostar high speed rail network.

- Discussion of expanding alternative airports around London such as Gatwick, Stansted or Luton e.g. consideration of building a new London airport in Thames estuary / especially as full capacity could be reached in the medium term even with a third runway at Heathrow.

- Accept discussion of significance of benefits e.g. in terms of jobs created at a time of high unemployment.

- **Accept** opportunity cost involved for government who might contribute to some of the funding. (**up to 2 marks**)

Question Number	Answer	Mark
10(e)*	**8 KAA marks**	(14)

- Explanation of APD as a specific tax or indirect tax levied on air travel from the UK (or tax on expenditure). **(1 mark)**

- The tax acts like an increase in production costs **(1 mark)**

- Effects of the tax - increase price per flight and or reduce quantity of passengers (ceterus paribus) **(1 mark)**

- **Diagram (up to 4 marks)**

> Original demand & supply curves & equilibrium, position (**1**)
> New supply curve shifted inwards (**1**)
> Unit tax identified as vertical difference e.g. XY (**1**)
> Tax area XYZP1 (**1**)
> Distinguish between consumer tax area XVPeP1 and Producer tax area VYZPe (**1+1**)

NB: Accept pivotal shift in the supply curve inwards.

NB: accept a negative externality diagram where a tax has been imposed.

NB: award a maximum of 4 out of 8 KAA marks if no relevant diagram offered.

- The APD could reduce the number of air flights and so help cut external costs or internalise external costs / such as air and noise pollution. (**1+1 marks**)

- The APD could reduce profits or revenue of airlines / employment implications / investment implications. (**1+1 marks**)

- Reduce consumer or producer surplus / shown on diagram. (**1+1 marks**)

- Raise extra tax revenue that can be used to develop air travel infrastructure / with example. (**1+1 marks**)

- Increase in demand for substitute modes of travel such as rail and sea ferries but this must be linked back to air travel. (**1 mark**)

- Reduce international competitiveness of air travel industry in UK / loss of hub business to other airports(**1+1 marks**)

  6 Evaluation marks (2+2+2 or 3+3)
- Discussion of magnitude of the increase in APD: 8% over 2 years is just in line with inflation / no increase in real terms, or, increase in real terms over one year / use of data from Figure 2 – a relatively small tax of £13 per passenger for flights up to 2000 miles / more significant for long haul flights exceeding 4000 miles.

- Discussion on income level of passengers: not much impact for First class or Business class passengers compared to economy passengers.

- Discussion of price elasticity of demand for flights:
  If inelastic then little impact on number of passengers / if elastic then might lead to big reduction in number of passenger flights / diagrammatic analysis.

- Discussion of APD as a proportion of total cost of flight or the price for passengers / airlines might absorb extra tax in production costs and so not pass on to consumers.

- Discussion of possible changes to other air travel costs / for example, fuel and labour costs may decrease.

| | • Short-run versus long run implications: it depends on whether or not the increase in APD is part of a long term process of tax increases on flights.

• Air travel still treated leniently compared to other goods and services / since no VAT or fuel duties applied. | |

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