# EXPERT TUITION

## **Economics Questions By Topic:**

### **Externalities (1.3.2) Mark Scheme**

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

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Question Number	Answer	Mark
1(a)	<ul> <li>Knowledge 1</li> <li>Knowledge/understanding <ol> <li>mark for definition of external benefits e.g.</li> <li>Positive externality (1)</li> <li>When the social benefits of an economic action are greater than the private benefits (1)</li> <li>External benefits = social benefits - private benefits (1)</li> <li>Benefits accruing to a 3<sup>rd</sup> party (1)</li> <li>Spillover effects (1)</li> <li>Outside the price mechanism (1)</li> </ol> </li> </ul>	(1)

Question Number	Answer	Mark
1(b)	В	(1)

Question Number	Answer	Mark
Number 1(c)	Application 2 Identify welfare gain area VTR (1) Annotate or identify the social optimum output as Q <sub>1</sub> or R or S (1) Costs/ benefits f f f f f f f f	(2)





Question Number	Answer	Mark
2 (b)	Analysis 1	
	The only correct answer is C	
	<b>A</b> is not correct because an external benefit to a third party is not identified	
	<b>B</b> is not correct because an external cost to a third party is not identified	
	<b>D</b> is not correct because a private cost plus external cost to a third party is not identified	(1)



Question Number	Answer	Mark
3	C (1 mark)	
	<ul> <li>Definition of market failure (the price mechanism leads to an inefficient allocation of resources / net welfare loss). (1 mark)</li> </ul>	
	<ul> <li>There is market failure since the social optimum output is Q<sub>1</sub> or T but the free market equilibrium output is Q<sub>e</sub> or Z, OR under-provision of Q<sub>e</sub>Q<sub>1</sub>.</li> <li>(1 mark)</li> </ul>	
	<ul> <li>Welfare gain / loss triangle of MTZ by raising the quantity of bus journeys. (1 mark)</li> </ul>	
	<ul> <li>Application: there are external benefits from bus journeys such as reduced road congestion and air pollution. (<b>1 mark</b>)</li> </ul>	
	<ul> <li>Rejection marks</li> <li>Option A as it is an example of market failure. (1 mark)</li> </ul>	
	- Option B incorrect as there is under-provision of $Q_eQ_1$ bus travel. (1 $mark$ )	
	<ul> <li>Option D incorrect as the welfare loss is MTZ.</li> <li>(1 mark)</li> </ul>	
	NB: Do not double award for rejections and correct explanations.	
		(4)



Question Number	Answer	Mark
4	• C (1 mark)	
	<ul> <li>Definition of welfare gain (the excess of social benefit over social cost for a given quantity).</li> <li>(1 mark)</li> </ul>	
	<ul> <li>Identification or annotation of diagram to identify welfare gain as area MTZ (accept welfare loss).</li> <li>(1 mark)</li> </ul>	
	<ul> <li>Identification of (T) (output Q<sub>2</sub>) as the social optimum position and (Z) (output Qe) as the free market equilibrium position. (1 mark)</li> </ul>	
	<ul> <li>Definition of external benefits: (positive third party effects / benefits external to an exchange / benefits the price mechanism ignores / benefits outside the market transaction / difference between social benefits and private benefits / positive spillover effects). (1 mark)</li> <li>NB: do not award for definition of external cost</li> </ul>	
	NB. do not award for definition of external cost	
	<ul> <li>Application to vaccinations: welfare gain or external benefits include a reduction in the spread of diseases since more people vaccinated / more profits for firms as less absenteeism from work due to ill health. (1 mark).</li> </ul>	
	<ul> <li>Rejection marks</li> <li>Option A incorrect since the free market output (Qe) or (Z) is less than the social optimum output (Q<sub>2</sub>) or (T) (1 mark).</li> <li>NB: Do not double award</li> </ul>	
	<ul> <li>Option B incorrect since marginal social cost is Z (or Pe) which is less than marginal social benefit of M (or P<sub>3</sub>). (1 mark)</li> <li>NB: must refer to Z (or Pe) and M (or P<sub>3</sub>) to award a mark</li> </ul>	
	<ul> <li>Option D incorrect since supply equals demand at the free market price / MPC=MPB at the free market price. (1 mark).</li> </ul>	(4)



Question	Answer	Mark
Number		
5	Correct option C (1 mark)	(4)
	• Definition of welfare loss (the excess of social cost over social benefit for a given output). (1 mark)	
	<ul> <li>Identification or annotation of diagram to show welfare loss of XWY. (1 mark)</li> </ul>	
	<ul> <li>Annotation of diagram to show how a cut in output will reduce the area of welfare loss (1 mark)</li> </ul>	
	• 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)	
	<ul> <li>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)</li> </ul>	
	<ul> <li>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)</li> </ul>	
	NB: do not award for market failure	
	<ul> <li>Rejection marks</li> <li>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.</li> </ul>	
	<ul> <li>Option B incorrect since welfare loss is area XWY. (1 mark). NB: Do not double award.</li> </ul>	
	<ul> <li>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)</li> </ul>	



Question Number	Answer	Mark
6	<ul> <li>Answer B (1 mark)</li> <li>Definition of market failure: the price mechanism fails to allocate resources efficiently / operation of market forces lead to a net</li> </ul>	(4)
	<ul> <li>welfare loss. (1 mark)</li> <li>The market fails since external benefits are ignored by the price mechanism or definition of external benefits (benefits external to an exchange / benefits outside of a market transaction / positive third party effects / difference between social and private benefits /</li> </ul>	
	<ul> <li>Positive spillover effects). (1 mark)</li> <li>NB: Do not award for definition of a free market economy.</li> <li>There is market failure at output level X, since MSB exceed MSC. (1 mark)</li> </ul>	
	<ul> <li>There is under-consumption of quantity XY / identification of market equilibrium of X (T) and social optimum at Y (R). NB: This may be shown on the diagram. (1 mark)</li> </ul>	
	<ul> <li>Application: consumption of vaccinations leads to healthier population as less spread of disease / more productive workforce / more profits for employers / lower production costs as less absenteeism for employers. (1 mark)</li> </ul>	
	<ul> <li>Identification of triangle of welfare gain (or loss) as VRT (accept deadweight loss or DWL). This may be annotated on to the diagram. (1 mark)</li> </ul>	







Question	Answer	Mark
number		
7	C (1 mark)	(4)
	• Definition of welfare gain (the excess of social benefit over social cost for a given quantity) (1 mark).	
	<ul> <li>Identification or annotation of diagram to identify welfare gain as area XZY (accept welfare loss) (1 mark).</li> </ul>	
	• Identification of the free market equilibrium as point X or quantity Qe and the social optimum as point Y or quantity Q1 (1 mark).	
	• Definition of external benefits: (positive third party effects / benefits external to an exchange/ benefits the price mechanism ignores / benefits outside the market transaction / difference between social benefits and private benefits / positive spillover effects) (1 mark).	
	• Application to vaccinations: welfare gain or external benefits include a reduction in the spread of diseases since more people vaccinated. (1 mark).	
	<ul> <li>Rejection marks</li> <li>Option A incorrect since the social optimum quantity is Q1 or Y which is greater than the free market quantity Qe or X. (1 mark)</li> <li>Note: do not double award if already credited in the explanation</li> </ul>	
	• Option B incorrect since welfare gain is area XZY Note: do not double award if this area has already been credited in the explanation) (1 mark).	
	• Option D incorrect since marginal social cost (X or Pe ) is less than marginal social benefit (Z ) (must state the letters) (1 mark).	



Question	Answer	Mark
Number		
8	<ul> <li>Answer B (1)</li> <li>Definition of market failure (the price mechanism fails to allocate resources efficiently / inefficient allocation of resources / the price mechanism leads to a welfare loss) (1)</li> </ul>	
	• Definition of external benefits (benefits external to an exchange / positive third party effects / benefits outside of a transaction / difference between social and private benefits / benefits the price mechanism ignores) (1)	
	<ul> <li>Identification of under-consumption of education / explanation of this e.g. a more productive workforce. (1)</li> </ul>	
	<ul> <li>Social benefit exceeds social cost of university education for QeQ1 students (1)</li> </ul>	
	<ul> <li>Identification of welfare gain or loss triangle is ZYX or annotation of diagram (1)</li> </ul>	
	<ul> <li>Identification of market equilibrium position MPB=MPC / identification of social optimum equilibrium position MSB=MSC (1+1)</li> <li>NB: Just identifying market equilibrium at output Qe and social optimum at output Q1 without reference to MSB/MSC/MPB/MPC then award 1 mark</li> </ul>	(4)
	Rejection marks • Option A is incorrect since the free market quantity 0Qe is less than the social optimum number of students 0Q1. (1)	
	• Option C is incorrect since the triangle of welfare gain is ZYX. (1)	
	• Option D is incorrect since the marginal external benefit increases / pivots as the quantity of students increase. (1)	

**END OF SECTION A** 



#### **Section B**

Jestion	Answer	Mark
	Knowledge 2, Analysis 2, Application 2, Evaluation 2	
	<ul> <li>Knowledge/understanding: 2 marks (1+1) e.g.</li> <li>Social optimum is when MSC = MSB (1)</li> <li>Social optimum position moves right (1)</li> <li>Market equilibrium output (e.g. MO) position identified (1)</li> <li>Downward sloping MSB (1)</li> <li>MSC = MPC + MEC (1)</li> </ul>	
	Costand Benefits # MSC' MSC' MSC'	
	O SO' SO' MO Quastity	
	<b>Analysis:</b> 1 mark for linked explanation of each identified	
	<ul> <li>benefit (1+1) e.g.</li> <li>Third party effects are lower (1) so external costs are lower/MEC falls (gi to ki) (1)</li> <li>MSC shifts/skews right (1) showing new social optimum position (MSB=MSC) (1)</li> <li>Welfare loss falls (1) from ghi to kji (1)</li> </ul>	



<ul> <li>Application: 2 marks for reference to Extract B e.g.</li> <li>Thomas Cook airline emissions are lower/switch fuel types/new engines (1)</li> </ul>	
• In 2018 Thomas Cook Group Airline was included in the top 10 of the world's most fuel-efficient airline (1)	
<ul> <li>Lower insurance bills/clean up bills for companies/households at risk of flood damage/storms (1) loss of cattle/crops due to drought declines (1)</li> </ul>	
• CO <sub>2</sub> emissions per passenger declines (1) quantity of flights increases (1)	
NB These application points may be annotated on the diagram.	
<b>Evaluation:</b> 2 marks for two evaluative comments, OR 2 marks for identification and linked development of one evaluative comment e.g.	
• Difficulty in measuring size of negative externality (1) third party effects (1)	
<ul> <li>CO<sub>2</sub> emissions from travel agents, hotels and holiday activities increase/remain high (1+1)</li> </ul>	
• Computational problems in measuring CO <sub>2</sub> emissions from planes (1) faulty industry data (1)	(9)
	(8)



Question Number	Answer	Mark
10	Knowledge 2, Application 2, Analysis 2	
	<ul> <li>Knowledge/understanding</li> <li>Identification of one external and one private benefit: tax revenue (external); higher earnings (private) (1+1)</li> </ul>	
	<b>Application</b> 2 marks for, e.g.	
	<ul> <li>'the government will benefit greatly from additional tax revenues' (1)</li> <li>'the rest will be in the form of their extra spending power' (1)</li> </ul>	
	Analysis	
	Linked development of why the education specifically benefits producers e.g. higher productivity enable firms to achieve lower costs and, therefore, lower prices (1+1)	
	Award up to 3 marks for each benefit	(6)



Question	Answer	Mark
Question Number 11	<ul> <li>Answer</li> <li>KAA = 8 marks</li> <li>Definition of external costs: Negative third party effects / costs external to a market transaction or exchange / costs the price mechanism fail to take into account / difference between social costs and private costs (1+1 marks).</li> <li>Explanation of external costs from consuming bottled water as increase in waste at landfill sites / increase in litter pollution which may kill sea life and birds. (1+1 marks)</li> <li>Explanation of external costs from producing bottled water as increase in carbon emissions by transporting the good. (1 mark)</li> <li>Accept explanation of other costs (up to 2 marks)</li> <li>Using up of a non-renewable resource in production of plastic bottles such as oil.</li> <li>The private cost or price of bottled water for consumers can be up to 10 000 times the price of tap water.</li> <li>It may take up to 3 litres of water to create 1 litre of bottled water.</li> <li>Plastic bottles may take thousands of years to decompose – a long term cost to society.</li> </ul>	Mark
	<ul> <li>Plastic bottles may take thousands of years to decompose – a long term cost to society.</li> </ul>	











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 chains of reasoning or links 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 superficial, two stage chains of reasoning only.
Level 3	7-10	Demonstrates accurate knowledge and understanding of the concepts, principles and models. Ability to apply economic concepts and relate them directly to the broad elements of the question with evidence integrated into the answer. Analysis is clear and coherent, although it may lack balance. Chains of reasoning are developed but the answer may lack balance.
Level 4	11-14	Demonstrates precise knowledge and understanding of the concepts, principles and models. Ability to link knowledge and understanding in context using appropriate examples. Analysis is relevant and focused with evidence fully and reliably integrated. Economic ideas are carefully selected and applied appropriately to economic issues and problems. The answer demonstrates logical and coherent chains of reasoning.



Question Number	Indicative content		
12 continued	Evaluation 6		
continucu	Reduced external costs in production of substitutes/external benefits may mean it is under-produced:		
	<ul> <li>Curb greenhouse gas emissions which are causing climate change, by using nuclear, resulting in less flooding or storm damage reducing insurance costs to businesses. Extract C</li> </ul>		
	<ul> <li>Building new nuclear reactors allow positive local economic effects from job creation.</li> </ul>		
	<ul> <li>Provide `affordable energy' helping businesses stay open thus protecting jobs and ending fuel poverty resulting in lower demands for health care.</li> </ul>		
	Other evaluation points might include: • Magnitude – depends on relative size of external cost.		
	<ul> <li>Measurement difficult – putting a value on external costs.</li> </ul>		
	Energy efficiency measures more preferable.		
	<ul> <li>Short term/long term costs and benefits.</li> </ul>	(6)	

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	Evidence of evaluation of alternative approaches which is unbalanced leading to unsubstantiated judgements. Evaluative comments with supporting evidence/reference to context and a partially developed chain of reasoning.
Level 3	5-6	Evaluative comments supported by relevant reasoning and appropriate reference to context. Evaluation is balanced and considers the broad elements of the question, leading to a substantiated judgement.



Question Number	Answer	Mark
Question Number	<ul> <li>Answer</li> <li>KAA = 8 marks</li> <li>Definition of external costs: Negative third party effects / costs external (outside) a market transaction or exchange / costs the price mechanism fail to take into account / negative spillover effects / difference between social costs and private costs (1 mark).</li> <li>Definition of market failure (where price mechanism leads to an inefficient allocation of resources. (1 mark)</li> <li>Explanation of external costs from generating renewable energy with some development, for example: <ul> <li>Environmental impact - visual eyesore; damage to wildlife such as birds; noise pollution from wind turbines. (up to 2 marks)</li> <li>External costs in construction e.g. noise and road congestion. (up to 2 marks)</li> <li>Falling property values; harder to buy and sell homes near to wind and solar farms. (up to 2 marks)</li> <li>Decrease in tourist visits and consequences for local income, employment and services. (up to 2 marks)</li> </ul> </li> <li>Generation of renewable energy involves higher privates costs compared to non-renewable energy / so consumers face higher prices / issue of fuel poverty. (up to 2 marks)</li> </ul>	Mark







There are significant benefits from the generation of renewable energy e.g. employment creation, sustainable energy source, less carbon pollution, more diversity in energy supply, meet EU government targets. (NB: award up to 4 marks)	(14)
<ul> <li>The quality of written communication will be assessed in this question based on the candidate's ability:</li> <li>To present an argument and conclude on the basis of that argument.</li> <li>To organise information clearly and coherently.</li> <li>To use economics vocabulary appropriately.</li> <li>To use grammar, spelling and punctuation appropriately.</li> </ul>	



Question	Answer			
14	8 KAA marks (2+2+2+2 or 2+2+2+1+1 or 3+3+2)			
	Case for reducing carbon emissions from new- build homes include:			
	<ul> <li>Data reference: for example more than 40% of carbon emissions in developed world are from buildings / cutting building emissions by 25% has same effect as removing cars from the roads so can make a big contribution to reducing pollution. (1 mark)</li> </ul>			
	<ul> <li>To promote sustainable development or growth in use of renewable energy / improve quality of life and general environment. (1+1 marks)</li> </ul>			
	<ul> <li>To comply with government regulations or meet EU targets / this may reduce government expenditure on issues surrounding climate change in the long term. (1+1 mark)</li> </ul>			
	<ul> <li>To reduce market failure or external costs or benefits / definition of either concept / with suitable examples. (1+1 marks)</li> </ul>			
	<ul> <li>Diagram (up to 2 marks)</li> <li>Original market and social optimum equilibrium positions correctly labelled. (1 mark).</li> <li>Shift of MSC curve downwards or MPC curve upwards. (1 mark)</li> <li>Written explanation of diagram e.g. reducing carbon emissions means the social optimum position can be reached or moved towards in the market. (1 mark)</li> </ul>			







	<ul> <li>Energy efficiency schemes may require government subsidies to be effective / implications for government borrowing and taxation.</li> </ul>	
	<ul> <li>The scheme should be regarded as just one of many schemes required to tackle global warming and its associated problems / prioritisation.</li> </ul>	
	• Difficult to measure the reduction in carbon emissions and external costs of the scheme / the level of success is difficult to work out / asymmetric information.	
	• The scheme is likely to have little impact unless other countries undertake similar measures to reduce carbon emissions for example China.	
	<ul> <li>The quality of written communication will be assessed in this question based on the candidate's ability:</li> <li>To present an argument and conclude on the basis of that argument.</li> <li>To organise information clearly and coherently.</li> <li>To use economics vocabulary appropriately.</li> <li>To use grammar, spelling and punctuation appropriately.</li> </ul>	



Question Number	Answer	Mark
15	<ul> <li>KAA = 8 marks</li> <li>Definition of external costs: cost external to an exchange / negative third party effect / spillover from production / cost which the price mechanism fails to take into account or is outside the market transaction / social cost minus private cost. (1+1marks)</li> </ul>	(14)
	<ul> <li>Application of external costs to fishing: Negative impact on other fish in the food chain / prevent future generations benefiting from consuming fish / pollution from fishing boats / accept loss of employment in related industries such as food processing and canning / negative multiplier effects / impact on government finances. (up to 2+2 or 1+1+2 marks)</li> </ul>	
	<ul> <li>Diagram depicting external costs in production (up to 4 marks):</li> <li>MB or MPB and MPC curves (1)</li> <li>MSC curve (1)</li> <li>Identification of social optimum and market determined equilibrium positions (could be mentioned in the explanation) (1)</li> <li>A labelled welfare loss triangle (shaded area) where marginal social costs exceed marginal social benefits for given output slice (1)</li> </ul>	
	Price	
	P1 Pe MPE=MSB	
	0 Q1 Qe Output	
	NB: It no appropriate diagram then award a maximum of 4 marks for KAA	



<ul> <li>Evaluation (2+2+2 marks or 3+3 marks)</li> <li>Time factor: in the short run there will be significant catches of fish which could lower price and benefit consumers / but in the long run as fish become more scarce then price will rise dramatically / loss of benefits from future healthy diet.</li> </ul>					
<ul> <li>Difficult to quantify and attach a monetary value to the external costs from over-fishing / it relates to future generations / uncertainty over level of fish stocks.</li> </ul>					
Fig ye bia					
Ma inc	Magnitude / use of data to show a significant increase in fishing above quota.				
NE co ov	3: Do no ncernir er-fishi	ot award for comments ng government solutions to ing.			
Level	Mark	Descriptor			
Level 1	1-4	Definition of external costs with examples			
Level 2	5-8	Application of external costs with relevant diagram			
Level 3	9-10	Up to one evaluation point			
Level 4	11- 12	Up to two evaluation points			
Level 5	13- 14	Up to three evaluation points			



Question Number	Answer	Mark
16	KAA = 8 marks	
	<ul> <li>Definition of private benefit (1+1 marks): benefit internal to an exchange / benefit the price mechanism takes into account / benefit from the market transaction / benefit to first and second party / benefit direct to consumer or producer from economic activity.</li> </ul>	
	<ul> <li>Definition of external benefit (1+1 marks): benefit external to an exchange / benefit the price mechanism ignores / benefit outside of the market transaction / positive third party effect / indirect benefit to consumer of producer from an economic activity.</li> </ul>	
	Costs / Benefits	
	MPC=MSC	
	P2 Pe MSB	
	МРВ	
	Qe Q2 Quantity	
	Diagram (up to 4 marks)	
	and MSC curves) ( <b>1 mark</b> )	
	<ul> <li>MSB curve (accept parallel shifts in the MSB curve) (1 mark)</li> </ul>	
	Identification of market equilibrium (Qe) and social efficient equilibrium (Q2) (1 mark).	
	Triangle of welfare gain (accept welfare loss)(1 mark).	
	• Explanation of private benefits (1+1 or 2	



marks): these include the extra £160,000 of average higher earnings for a graduate over working life / private benefit of more status or perks from job / more knowledge / more revenue for universities / raise occupational mobility to individual.	
<ul> <li>Explanation of external benefits (1+1 or 2 marks): these include additional revenue or profits to firms / additional productivity to the economy / attraction of foreign investment / increased international competitiveness / increased tax revenue for government / lower unemployment / raise occupational mobility (NB occupational could be both a private and external benefit).</li> </ul>	
NB: these benefits must be clearly identified as either private benefits or external benefits	
NB: If no suitable diagram award a maximum of 4 KAA marks	
Evaluation (3+3 or 2+2+2 marks)	
Private benefits	
Uncertainty of the value of private benefits: No guarantee that an individual graduate will earn £160,000 more over working life / many may work part-time or earn below £21,000 and so avoid repayments.	
Uncertainty of value of private benefits since: graduate unemployment remains high / 8.9%.	
The type of course studied for and the institution studied at might affect earnings / quality of education to the individual.	
Time lag between university study and the reward of increased earnings.	
The estimated additional earnings of £160,000 has to be compared with financial costs of tuition fees of £9,000 per year / plus interest charges / plus living expenses / also the loss of potential income from work over the three or more years of taking degree.	
External benefits	
Uncertainty of the value of external benefits: Difficult to quantify and attach a monetary value to university education / quality of education	



may vary.	
Value of external benefits to firms may be exaggerated – still need to train new staff.	
Problem of other countries spending higher percentage of GDP on university education – so external benefits to UK may be limited if quality of university education lags behind.	(14)
A brain drain as some graduates move abroad to work.	



Question Number	Answer	Mark
17	KAA (Up to 8 marks)	
	<ul> <li>Definition of private costs: costs internal to an exchange or a transaction / costs which the price mechanism take into account / costs to the consumer or producer directly for a good or service / financial cost or monetary cost to consumers or producer (1+1 marks).</li> </ul>	
	<ul> <li>Explanation of private costs in growing cotton e.g. fertilizer cost / increased water cost / one other cost such as wages, raw materials, rent and purchase of machinery (1+1 marks).</li> </ul>	
	<ul> <li>Definition of external costs: costs external to an exchange or transaction / costs which the price mechanism fail to take into account / negative third party effects / difference between social costs and private costs (1+1 marks)</li> </ul>	
	<ul> <li>Explanation of an external cost in growing cotton e.g. reduction in bio-diversity / health risks associated with GM crops / environmental backlash / pollution from increased use of fertilisers (1+1 marks).</li> </ul>	
	NB: general comments on pollution are not sufficient for awarding marks	
	NB: these costs must be clearly identified as either private costs or external costs	







<ul> <li>Discussion of possible long term implications: there may be a loss of bio-diversity and so difficult to combat diseases such as the bollworm mite.</li> </ul>	
<ul> <li>Discussion of difficulty in measuring and attaching a monetary value to external costs / issue of imperfect market knowledge and that GM farming is an unknown risk.</li> </ul>	
<ul> <li>Discussion of possible benefits from GM farming: need to consider all the evidence – crops which might grow despite climate change / increased supply and lower prices / greater consumer surplus / higher living standards for farmers in the developing world.</li> </ul>	



Question Number	Answer	Mark
Question Number 18	<ul> <li>Answer</li> <li>KAA = 8 marks</li> <li>Definition of external cost: (cost external to an exchange / negative third party effect / spillover from production or consumption / cost which the price mechanism fails to take into account / difference between private costs and social costs) (1+1 marks).</li> <li>Examples of external costs associated with destroying rainforest to convert to cattle ranching and crop growing. e.g. increase in carbon dioxide emissions or global warming / effects in terms of crop failure / rising sea levels / wildlife destruction / damage to tourism (up to 3 marks for a well developed point or 1+1+1 marks).</li> <li>Definition of market failure: (the price mechanism fails to allocate resources efficiently / price mechanism leads to a misallocation of resources) (1 mark).</li> <li>Market failure is due to over-production and under-pricing / social costs exceeding social benefits at output Qe, or, market failure occurs since marginal social costs exceed marginal social benefits at output Qe, or, market failure occurs since marginal social costs exceed marginal social benefits at output Qe, or, market failure occurs since marginal social costs exceed marginal social benefits at output Qe (1+1 marks).</li> </ul>	Mark (14)
	Pe MPB=MSB	
	Qs Qe Quantity	
	<ul> <li>MPC and MB curves (1 mark).</li> <li>MSC curve (accept a parallel MSC line here) (1 mark)</li> <li>Social optimum and market equilibrium positions labelled or explained in text (1 mark).</li> <li>Welfare loss area shaded in (black triangle above) and named (1 mark).</li> </ul>	



NB: Award maximum of 6 KAA marks if no relevant diagram offered.	
Evaluation: (2+2+2 or 3+3 marks) ➤ Magnitude of destruction: - seems huge as extract 2 refers to 7,330 square miles of forest lost each year / 400 million tonnes of carbon dioxide into the atmosphere.	
Discussion of the difficulty in quantifying and attaching a monetary value on external costs.	
> Time period: in the short run there may be little impact but more serious in the long run / destruction has been going on for many years and problem seems to be accelerating / a tipping point may come in terms of irreversible climate change.	
Discussion of possible benefits e.g. employment and income for local communities / increase availability of food / reduction in beef and other commodity prices / reduction in poverty and hunger.	
Government might be forced to take action, for example, subsidies to create sustainable development or an increase in policing to protect rainforest / but problems with these such as opportunity cost of the subsidies and difficulty in protecting such a vast area of land.	



Question	Answer	Mark
Number		
19	<ul> <li>KAA 8 marks available</li> <li>Definition of private benefits (1+1 marks)</li> <li>Benefit internal to an exchange / first or second party effect / internal to the production or consumption of a good / benefit included within the price mechanism / social benefit minus external benefit / revenue received by producer / satisfaction received by consumer.</li> <li>Definition of external benefits (1+1 marks)</li> </ul>	
	<ul> <li>Benefit external to an exchange / positive third party effect / spillover from production or consumption / benefit which the price mechanism fails to take into account / benefit outside of a transaction / social benefit minus private benefit.</li> </ul>	
	Diagram (Up to 4 marks)	
	• MPB and MC curves (1)	
	<ul> <li>MSB curve (1)</li> <li>Identification of market equilibrium and social optimum output or price (could be mentioned in the text) (1)</li> <li>NB: merely stating under-consumption is not sufficient.</li> <li>Triangle of welfare gain (accept welfare loss)(1)</li> </ul>	
	Note: accept a parallel outward shift of the MSB curve	
	Price	
	MPC=MSC	
	P2 Pe Z MSB	
	МРВ	
	Qe Q2 Quantity	
	• Explanation of private benefits (Up to 3 marks): improved health to those directly treated / increased life expectancy / increased income from employment. Also accept benefits direct to the NHS such as employment, revenue and trading surpluses.	



<ul> <li>Explanation of external benefits (Up to 3 marks): healthier workforce for employers / so greater productivity / less absenteeism / more profits / increase in tax revenues / increase in inward investment / reduction in spread of contagious diseases.</li> <li>NB: Benefits must be explicitly identified as private or external benefits. Otherwise award no marks for this explanation.</li> <li>NB: if no diagram then award a maximum of 6 marks for KAA</li> <li>Evaluation: (2+2+2 marks or 3+3 marks)</li> <li>&gt; Discussion of magnitude of private benefits: Extract 1 refers to more than 1 million people being treated every 36 hours. This must have a dramatic impact on the health of the population.</li> <li>&gt; Short-run and long run effects: since 1997 the costs of providing healthcare free at point of consumption has increased dramatically.</li> <li>&gt; Prioritise between private and external benefits.</li> <li>&gt; Discussion of whether the benefits outweigh the costs of funding the NHS. Inefficient use of resources.</li> <li>&gt; Difficult to quantify / attach a monetary value on external or private benefits / possibility of over-provision or under- provision of healthcare (nods (asymmetric information).</li> <li>&gt; There may be significant costs associated with extra funding of healthcare (opportunity cost) / higher taxes / more government borrowing / less funds for other areas of expenditure.</li> <li>(14 Quality of written communication skills will be assessed in this question based on the candidate's ability:         <ul> <li>To present an argument and conclude on the basis of that argument.</li> </ul> </li> </ul>		
<ul> <li>NB: Benefits must be explicitly identified as private or external benefits. Otherwise award no marks for this explanation.</li> <li>NB: if no diagram then award a maximum of 6 marks for KAA</li> <li>Evaluation: (2+2+2 marks or 3+3 marks)</li> <li>&gt; Discussion of magnitude of private benefits: Extract 1 refers to more than 1 million people being treated every 36 hours. This must have a dramatic impact on the health of the population.</li> <li>&gt; Short-run and long run effects: since 1997 the costs of providing healthcare free at point of consumption has increased dramatically.</li> <li>&gt; Prioritise between private and external benefits.</li> <li>&gt; Discussion of whether the benefits outweigh the costs of funding the NHS. Inefficient use of resources.</li> <li>&gt; Difficult to quantify / attach a monetary value on external or private benefits / possibility of over-provision or underprovision of healthcare funds (asymmetric information).</li> <li>&gt; There may be significant costs associated with extra funding of healthcare (opportunity cost) / higher taxes / more government borrowing / less funds for other areas of expenditure.</li> <li>(14</li> <li>Quality of written communication skills will be assessed in this question based on the candidate's ability:</li> <li>To present an argument and conclude on the basis of that argument.</li> </ul>	• Explanation of external benefits (Up to 3 marks): healthier workforce for employers / so greater productivity / less absenteeism / more profits / increase in tax revenues / increase in inward investment / reduction in spread of contagious diseases.	
<ul> <li>NB: if no diagram then award a maximum of 6 marks for KAA</li> <li>Evaluation: (2+2+2 marks or 3+3 marks)</li> <li>&gt; Discussion of magnitude of private benefits: Extract 1 refers to more than 1 million people being treated every 36 hours. This must have a dramatic impact on the health of the population.</li> <li>&gt; Short-run and long run effects: since 1997 the costs of providing healthcare free at point of consumption has increased dramatically.</li> <li>&gt; Prioritise between private and external benefits.</li> <li>&gt; Discussion of whether the benefits outweigh the costs of funding the NHS. Inefficient use of resources.</li> <li>&gt; Difficult to quantify / attach a monetary value on external or private benefits / possibility of over-provision or underprovision of healthcare funds (asymmetric information).</li> <li>&gt; There may be significant costs associated with extra funding of healthcare (opportunity cost) / higher taxes / more government borrowing / less funds for other areas of expenditure.</li> <li>(14</li> <li>Quality of written communication skills will be assessed in this question based on the candidate's ability:     <ul> <li>To present an argument and conclude on the basis of that argument.</li> </ul> </li> </ul>	NB: Benefits must be explicitly identified as private or external benefits. Otherwise award no marks for this explanation.	
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<ul> <li>Discussion of whether the benefits outweigh the costs of funding the NHS. Inefficient use of resources.</li> <li>Difficult to quantify / attach a monetary value on external or private benefits / possibility of over-provision or under-provision of healthcare funds (asymmetric information).</li> <li>There may be significant costs associated with extra funding of healthcare (opportunity cost) / higher taxes / more government borrowing / less funds for other areas of expenditure.</li> <li>Quality of written communication skills will be assessed in this question based on the candidate's ability:         <ul> <li>To present an argument and conclude on the basis of that argument.</li> <li>To present an argument and conclude on the basis of that argument.</li> </ul> </li> </ul>	Prioritise between private and external benefits.	
<ul> <li>Difficult to quantify / attach a monetary value on external or private benefits / possibility of over-provision or under-provision of healthcare funds (asymmetric information).</li> <li>There may be significant costs associated with extra funding of healthcare (opportunity cost) / higher taxes / more government borrowing / less funds for other areas of expenditure.</li> <li>Quality of written communication skills will be assessed in this question based on the candidate's ability:         <ul> <li>To present an argument and conclude on the basis of that argument.</li> </ul> </li> </ul>	Discussion of whether the benefits outweigh the costs of funding the NHS. Inefficient use of resources.	
<ul> <li>There may be significant costs associated with extra funding of healthcare (opportunity cost) / higher taxes / more government borrowing / less funds for other areas of expenditure.</li> <li>Quality of written communication skills will be assessed in this question based on the candidate's ability:         <ul> <li>To present an argument and conclude on the basis of that argument.</li> <li>To present an expenditure.</li> </ul> </li> </ul>	Difficult to quantify / attach a monetary value on external or private benefits / possibility of over-provision or under- provision of healthcare funds (asymmetric information).	
<ul> <li>Quality of written communication skills will be assessed in this question based on the candidate's ability:</li> <li>To present an argument and conclude on the basis of that argument.</li> </ul>	There may be significant costs associated with extra funding of healthcare (opportunity cost) / higher taxes / more government borrowing / less funds for other areas of expenditure.	(14)
<ul> <li>To present an argument and conclude on the basis of that argument.</li> </ul>	Quality of written communication skills will be assessed in this question based on the candidate's ability:	
<ul> <li>To Organize information clearly and coherently.</li> <li>To use economics vocabulary appropriately.</li> <li>To use grammar, spelling and punctuation appropriately.</li> </ul>	<ul> <li>To present an argument and conclude on the basis of that argument.</li> <li>To Organize information clearly and coherently.</li> <li>To use economics vocabulary appropriately.</li> <li>To use grammar, spelling and punctuation appropriately.</li> </ul>	

Level	Mark	Descriptor
Level 1	1-4	Definition of private and external benefits.
Level 2	5-8	Application of private and external benefits to healthcare.
Level 3	9-10	Application of private and external benefits to healthcare with diagram.
Level 4	11-12	Up to one evaluation point.
Level 5	13-14	Two or more evaluation points.



Question Number	Answer	Mark
20	<ul> <li>KAA = 8 marks</li> <li>Definition of external costs: cost external to an exchange / negative third party effect / spillover from production or consumption / cost which the price mechanism fails to take into account / cost outside of a transaction / social cost minus private cost equals external costs (1+1 marks).</li> <li>Application of external costs to copper mining: damage to tourism, fishing and canning industries of \$400 million / noise and visual pollution / loss of employment in these industries and negative multiplier effects / falling property prices / impact on government finances / impact on health of native communities / impact on Balance of trade (Up to 2+2 marks).</li> <li>NB: if the term 'external costs' is not mentioned then cap at 1 mark.</li> <li>Diagram depicting external costs in production (Up to 4 marks):</li> <li>MB and MPC curves (1)</li> <li>MB and MPC curves (1)</li> <li>Identification of social optimum and market determined equilibrium positions (could be mentioned in the text) (1)</li> <li>NB: merely identifying over-production is not sufficient.</li> <li>Welfare loss triangle (shaded area) where marginal social costs exceed marginal social benefits for given output slice (1).</li> <li>Price</li> <li>Q1 Q2 Q2 Quantity</li> </ul>	
	NB: If no diagram award a maximum of cap at 4 marks for KAA.	



Evaluation (2+2+2 marks or 3+3 marks)	
• Significance of external costs: the market equilibrium output will exceed the social optimum output / copper is over-produced and over-consumed / market price differs from social optimum price (1+1 marks).	
<ul> <li>Magnitude/ time factor: \$400 million per annum fishing industry could be destroyed permanently (1+1 marks).</li> </ul>	
• Prioritise among the external costs.	
<ul> <li>Discussion of short run and long run effects e.g. initial construction may cause greatest amount of external costs.</li> </ul>	
<ul> <li>Difficult to quantify and attach monetary value to external costs.</li> </ul>	
• The external costs could be reduced through government intervention e.g. regulation / taxation. Also the mining companies could take measures to reduce environmental damage / compensate victims.	
<ul> <li>External costs could be mitigated by the benefits associated with copper mine (1 + 1 + 1 marks)</li> </ul>	(14)
<ul> <li>A new source of income and employment in the area         <ul> <li>some 1,000 jobs directly created.</li> </ul> </li> <li>Export earnings from copper could improve Balance of trade.</li> <li>Help diversify the Alaskan economy.</li> <li>Tax revenue collected from the mining companies can improve local infrastructure.</li> </ul>	
Quality of written communication skills will be assessed in this question based on the candidate's ability:	
<ul> <li>To present an argument and conclude on the basis of that argument.</li> <li>To organise information clearly and coherently.</li> </ul>	
<ul> <li>To use economics vocabulary appropriately.</li> <li>To use grammar, spelling and punctuation appropriately.</li> </ul>	

Level	Mark	Descriptor
Level 1	1-2	Definition of external costs
Level 2	3-4	Application of external costs to copper mining.
Level 3	5-8	Diagrammatic analysis of social and market equilibrium positions
Level 4	9-10	One evaluation point developed.
Level 5	11-14	Two or more evaluation points developed.



Question Number	Answer	Mark
21	KAA = 8 marks	
	<ul> <li>Definition / understanding of market failure (the price mechanism leads to an inefficient allocation of resources / net welfare loss) (1 mark).</li> </ul>	
	• Explanation of type of market failure, e.g. external costs imperfect knowledge, and unstable commodity prices	
	• External costs: definition of external costs: cost external to an exchange / negative third party effect / spillover from production or consumption / cost which the price mechanism fails to take into account / cost outside of a transaction / social cost minus private cost equals external cost (1+1 marks).	
	• External costs of consumption of sugar: impact of ill health on third party e.g. increased NHS spending / absenteeism from work / loss of revenue for employers / lower tax revenue / more benefits spending (up to 3 marks).	
	• External costs of production of sugar: clearance of rainforests / damage to soil, wildlife and plant life / danger of libel action against producers / loss of tourism (up to 3 marks). NB any appropriate example will trigger a mark.	
	• Imperfect market knowledge: consumers may not realize the long term damage from consuming too much sugar e.g. ill health, for example, obesity, heart disease, diabetes, tooth decay, reduced life expectancy / reduced potential earnings from work (3 marks). NB any appropriate example will trigger a mark.	
	• Relevant diagram depicting external costs in production (also accept diagram depicting the equilibrium output for	







• The sugar shortage in US is more associated with government failure by restricting imports of sugar to protect domestic farmers. This is not a market failure. Government actions also damage farmers in developing countries.	
<ul> <li>Government import restrictions is a good idea since it increases sugar price and so reduces consumption of a good associated with health problems.</li> </ul>	
• Difficulty in measuring and attaching a monetary value to external costs / making it difficult to assess the extent of the market failure.	
<ul> <li>Speculative buying of sugar in the commodity market / leading to profiteering or uncertainty over future prices.</li> </ul>	
<ul> <li>Sugar is not a complete market failure since benefits associated with production / consumption:</li> <li>Major source of income and employment in some developing countries.</li> <li>Export earnings for some developing countries.</li> <li>Major source of calorie intake for some people on low incomes.</li> <li>Quality of sugar - is it raw cane or refined?</li> </ul>	
NB No marks available for discussion of solutions to market failure / or discussion of government failure	
<ul> <li>Quality of written communication skills will be assessed in this question based on the candidate's ability:</li> <li>To present an argument and conclude on the basis of that argument.</li> <li>To organise information clearly and coherently.</li> <li>To use economics vocabulary appropriately.</li> <li>To use grammar, spelling and punctuation appropriately.</li> </ul>	

Level	Mark	Descriptor
Level 1	1-4	Definition of market failure and type e.g. external costs and application.
Level 2	5-8	Application of market failure to both consumption and production of sugar.
Level 3	9-11	One evaluation point developed.
Level 4	11-14	Two or more evaluation points developed.



Question	Answer	Mark
Number		
22(a)	<ul> <li>Maximum of 2 marks available for private costs</li> </ul>	
	Definition of private costs: (1+1)	
	Costs internal to an exchange or a transaction / costs which the price	
	mechanism take into account / costs to the consumer or producer	
	directly for a good or service / financial cost or monetary cost to consumers or producer.	
	Identification of an example of private cost e.g. wages, raw materials,	(4)
	rent and purchase of machinery (1).	
	NB: 'cost to the individual or firm' is not enough for awarding a mark.	
	Maximum of 2 marks available for external costs	
	<ul> <li>Definition of external costs (1+1)</li> </ul>	
	• Costs external to an exchange or transaction / costs which the price mechanism fail to take into account / negative third party effects / difference between social costs and private costs	
	difference between social costs and private costs.	
	• Identification of an example of external costs e.g. pollution, congestion (1)	
	• Diagram showing private, external and social costs (1).	

Questio	Answer	Mark
n		
Number		
22(b)	Award up to 6 marks for KAA	
	NB: No marks for definitions of private costs and external costs as these have already been awarded in Q21(a)	
	• Application of private costs of intensive farming / GM farming e.g. research and development costs / labour costs / raw materials / machinery costs (1+1).	
	• Application of external costs e.g. worse quality of food / public health issues / reduction in bio diversity / animal welfare / pesticides in rivers (1+1 marks).	







surplus and help low income groups / provide surpluses for people in developing countries / increase farm revenues and stabilise food prices / less pressure on grazing land in developing world.
<ul> <li>Discussion of imperfect market knowledge / uncertainty over long-term impact of GM farming.</li> </ul>
<ul> <li>Discussion on whether costs outweigh benefits / cost-benefit analysis may be needed.</li> </ul>
• Discussion of government regulations on GM farming to protect consumers.
• UK only produces 48% of its food so intensive / GM farming may be a necessary evil.
• Intensive / GM farming may not have to be undertaken if people are more careful on consuming food they buy rather than throw so much away as mentioned in extract (lines 22 & 23); one-third of all food is thrown away.



Question Number	Answer	Mark
23(a)	<ul> <li>Definition of private costs: (cost internal to an exchange / cost which the price mechanism takes into account / a direct cost to the producer or consumer) (1 + 1 marks).</li> </ul>	
	<ul> <li>Definition of external cost: (cost external to an exchange / negative third party effect / spillover from production or consumption / cost which the price mechanism fails to take into account / difference between private cost and social cost) (1 + 1 marks).</li> </ul>	(4)



Question	Answer	Mark
Number		
23(b)	<ul> <li>An example of private costs from house building and development (labour / raw materials / machinery / land purchase / fuel / insurance / security) (1 + 1 marks).</li> <li>An example of external costs from house building and development (scenic pollution / noise pollution / air pollution from the machinery / damage to wildlife / falling property prices in nearby villages) (1+1 marks).</li> <li>Relevant diagram depicting marginal private cost and marginal social cost curves) (2 marks).</li> </ul>	
	Price	
	MSC	
	External Costs MPC	
	MPB=MSB	
	Quantity	
	<ul> <li>Evaluation (3 + 3 or 2 + 2 + 2 marks)</li> <li>Discussion of whether the house building programme is a market or government failure. Issue of internalising the external costs to reduce welfare loss.</li> <li>Discussion of magnitude of house building programme: more than 1.1 million homes in South-East. This is very ambitious.</li> <li>Time factor: 2016 means a relatively short time to construct so many homes. Will quality suffer?</li> <li>Size of external costs will depend on various factors, eg planning regulations, quality of new builds, size of new houses, environmental awareness of housing companies.</li> </ul>	



<ul> <li>Credit crunch could mean the target for house building will not be met. House building companies face problems in raising finance / potential house buyers face problems raising finance.</li> </ul>	
Quality of written communication skills will be assessed in this question based on the candidate's ability:	
<ul> <li>To present an argument and conclude on the basis of that argument.</li> </ul>	
• To organise information clearly and coherently.	
<ul> <li>To use economics vocabulary appropriately.</li> <li>To use grammar, spelling and punctuation</li> </ul>	
appropriately.	(12)

Level	Mark	Descriptor
Level 1	1-4	Examples of private costs and external costs of a major house building programme.
Level 2	5-6	Examples and relevant diagrammatic analysis applied to house building programme. No evaluation. (Mark cap of 6 if no evaluation offered).
Level 3	7-9	Examples and relevant diagrammatic analysis; one evaluation point offered.
Level 4	10-12	Convincing examples and diagrammatic analysis; two or more evaluation points offered.



Question	Answer	Mark
Number		
24	<ul> <li>Knowledge, application and analysis (up to 8 marks)</li> <li>Definition of external benefits (benefits external to an exchange / benefits ignored by the price mechanism / positive third party effects / difference between private and social benefits / positive spillover effects) (1+1 marks).</li> </ul>	
	<ul> <li>Identification and explanation of two external benefits from higher education (2+2 marks). These include:</li> </ul>	
	Increased competitiveness for UK economy suggested by Figure 1 on academic research. Innovation and invention is more likely, developing new products. UK has two universities in Top 10 and twenty-nine in Top 200.	
	Increased profits for firms since: higher productivity of graduates mean higher revenue. Also there could be lower training costs for firms if graduates already possess vocational skills.	
	Improved government finances since: increase in tax revenue from higher earnings of graduate / increase in business tax revenue as firms make more profits / less likelihood of graduates claiming unemployment benefits.	
	Indirect employment / income effects for firms which cater for students e.g. bookshops, bars and property rental. These are not part of the initial exchange.	
	Note: Do not award for increased national output.	
	Diagram (External benefits identified in between private and social benefits - up to 4 marks)	
	Price	
	MPC=MSC	
	P2 Pe External	
	MPB Benefits MSB	wices
	Q <sub>e</sub> — Q <sub>2</sub> <del>Quantity of educational se</del>	rvices



<ul> <li>MPC = MPB (1 mark)</li> <li>Add on MSB curve (1 mark)</li> <li>Identify market equilibrium and social optimum (1 mark)</li> <li>Identify welfare gain (1 mark)</li> </ul>	
Note: If no diagram, award up to 6 marks in this section.	
<ul> <li>Evaluation (up to 4 marks for one well-developed point or 2+2 marks)</li> <li>Explanation of triangle of welfare gain as an evaluative point, where social benefits exceed social costs for an incremental output.</li> </ul>	
The increase in profits for firms may not be so significant since graduates are paid more than non-graduates. It depends on the difference between the extra revenue and extra costs from employing graduates.	
The improvement in government finances may occur only in the long run since it is still funding a significant proportion of tuition fees for graduates; also, repayment of student loans only occur after graduates are in employment above a certain income level.	
The indirect employment and income effects from higher education may be specific to certain areas and industries, for example, university towns and bookshops. Also, there would be indirect effects if people did not study in higher education - so the net difference should be considered.	(12)
Prioritize between the two external benefits.	
Magnitude of external benefits.	

Level	Mark	Descriptor
Level 1	1-2	Definition or identification of two external benefits. No diagram or explanation.
Level 2	3-4	Definition or identification of two external benefits. No diagram or explanation.
Level 3	5-8	Definition and explanation of two external benefits with diagram. (Mark cap 8 if no evaluation)
Level 4	9-12	Convincing explanation of two external benefits with diagram; one evaluation point (well developed) or two or more points.

#### **END OF SECTION B**



#### Section C

Question Number	Indicative content Mark		
25	Knowledge 4, Application 4, Analysis 8, Evaluation 9		
	<ul> <li>Understanding of private costs and external costs (may be implicit).</li> </ul>		
	<ul> <li>Explanation of private costs in nuclear power station: purchase of land, machinery, construction of buildings, labour costs, security costs, raw materials.</li> </ul>		
	<ul> <li>Explanation of external costs: visual eyesore, impact on wildlife, impact on local property prices, air pollution, road congestion, risk of leak or contamination.</li> </ul>		
	<ul> <li>Diagram depicting private costs and external costs</li> </ul>		
	Costs, Benefit MSC		
	PS P		
	m MPB=MSB		
	0 QS Qs Quantity of construction	(25)	
	<ul> <li>Original MPB / MSB and MPC curves</li> <li>MSC curve (accept a parallel shift of the MSC curve)</li> </ul>	(23)	
	<ul> <li>Identification of market equilibrium and socially efficient quantity</li> <li>Identification of triangle of welfare loss</li> </ul>		
	NB: For a Level 4 response, candidates must include an accurate diagram and consideration of both private and external costs.		



#### Costs also include:

- Risk from major nuclear plant failure.
- Imperfect market knowledge: risk from incomplete technology for developing the nuclear reactor.
- Risk from foreign ownership and control of major nuclear power station (funded and built by French and Chinese companies).
- High price of electricity consumers will pay above the market price.
- Accept macro point e.g. long term income outflow on the balance of payments.

#### Evaluation

- Difficulty in measuring and attaching a monetary value to private costs and external costs.
- Time lag in building plant at least 10 years.
- Government intervention may reduce size of external costs e.g. construction noise abatement measure.
- Risk of government failure; some argue it could not withdraw from the Hinkley Point project without major loss of trade with China.
- Accept macro point e.g. short and long run effects on the balance of payments.

Significant private and external benefits from the project which offset costs and/or reduce welfare loss, may include:

- Employment and income creation / positive multiplier effects at local, national and international level / French and Chinese firms view it as a first step to securing further contracts from around the world.
- Increased security of energy supply for the future

   some 7% of UK electricity for sixty years /
   given the closure of many coal power stations.
- Diversify UK energy production and so spread risks from uncertainty on non-renewable sources



<ul> <li>such as wind power and solar power.</li> <li>Stable price of electricity for consumers for next sixty years.</li> <li>Less damage to the environment / nuclear energy has low carbon emissions / easier for government to achieve internationally agreed carbon emission targets.</li> <li>Extremely tight safety regulations to be imposed on the building and operation of the nuclear power station / one of the greatest safety.</li> </ul>	
power station / one of the greatest safety regulations in the world.	



Knowledge, application and analysis		
Level	Mark	Descriptor
	0	A completely inaccurate response.
Level 1	1-4	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 chains of reasoning or links between causes and consequences.
Level 2	5-8	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 superficial, two stage chains of reasoning only.
Level 3	9-12	Demonstrates accurate knowledge and understanding of the concepts, principles and models. Ability to apply economic concepts and relate them directly to the broad elements of the question with evidence integrated into the answer. Analysis is clear and coherent, although it may lack balance. Chains of reasoning are developed but the answer may lack balance.
Level 4	13-16	Demonstrates precise knowledge and understanding of the concepts, principles and models. Ability to link knowledge and understanding in context using appropriate examples. Analysis is relevant and focused with evidence fully and reliably integrated. Economic ideas are carefully selected and applied appropriately to economic issues and problems. The answer demonstrates logical and coherent chains of reasoning.

Evaluation		
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	Evidence of evaluation of alternative approaches which is unbalanced leading to unsubstantiated judgements. Evaluative comments with supporting evidence/reference to context and a partially-developed chain of reasoning.
Level 3	7–9	Evaluative comments supported by relevant reasoning and appropriate reference to context. Evaluation recognises different viewpoints and is critical of the evidence provided and/or the assumptions underlying the analysis enabling informed judgements to be made.

#### END OF SECTION C

