

GCE

Economics

Unit **F584:** Transport Economics

Advanced GCE

Mark Scheme for June 2017

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All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

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Annotations

Please annotate **every** response, even if no credit is given.

Annotation	Meaning
?	Unclear
BOD	Benefit of Doubt
×	Cross
EE	Effective evaluation
IR	Irrelevant
LI	Level 1
L2	Level 2
L3	Level 3
L4	Level 4
NAQ	Not answered question
SEEN	Noted but no credit given
TV	Too vague
✓	Tick
√ ₊	Development of point

Subject-specific Marking Instructions

Some questions may have a 'Level of Response' mark scheme.

The following guidelines on the quality of written communication are embedded into the Levels of Response mark scheme used for question 3:

- **Level 4:** Complex ideas have been expressed clearly and fluently using a style of writing which is appropriate to the complex subject matter. Sentences and paragraphs, consistently relevant, have been well structured, using appropriate technical terminology. There may be few, if any, errors of spelling, punctuation and grammar.
- **Level 3:** Relatively straightforward ideas have been expressed with some clarity and fluency. Arguments are generally relevant, though may stray from the point of the question. There will be some errors of spelling, punctuation and grammar, but these are unlikely to be intrusive or obscure meaning.
- **Level 2:** Some simple ideas have been expressed in an appropriate context. There are likely to be some errors of spelling, punctuation and grammar of which some may be noticeable and intrusive.
- Level 1: Some simple ideas have been expressed. There will be some errors of spelling, punctuation and grammar

Qı	uesti	on	Answer	Marks	Guidance
1	(a)	(i)	Identify the relationship between the demand for air transport and HST transport. Air transport and HST transport are substitutes for each other. Accept positive XED	1	One mark for a correct identification.
	(a)	(ii)	Using information from the extract, explain what effect a switch from air transport to train transport may have on road transport. • The extract mentions most airports on the outskirts of cities (1) so passengers have to travel to them and therefore with less air travel road transport will fall (1). • Road transport is a complement to air transport (1) people drive to the airports or take taxis to get to the airports (1) following a switch less people will travel by road (1)	2	One mark for a correct identification that road transport will fall. One mark for evidence from the extract Alternatively a further mark can be gained from a developed explanation
	(b)		Identify, using Fig.1 and Fig.2, which country is expected to experience the greatest percentage increase and which the smallest percentage increase in HST lines. Greatest: Turkey. Smallest: France.	2	Note: Spain 86%; Turkey 217%; Germany 29%; France 11%: Switzerland 206%.
	(c)		Using the information from the extract, analyse the extent to which the imposition of a tax on aviation fuel would be likely to increase air fares. Analysis Would increase costs of production (1) decreasing	5	One mark for each point of analysis Up to 3 marks for analysis Up to 3 marks for further application e.g. use of evidence, PED, consideration of extent.

		supply (1) and so cause fares to rise (1).		
		Application • Extent will be influenced by PED.		Maximum 5
		The more inelastic demand is, the higher the fares are likely to rise.		
		The extract suggests demand on some routes is elastic and so fares may not rise by much.		
		 Extent will be influenced by how significant fuel is in total costs. 		
		The extract mentions fuel accounts for 30% of costs which is quite significant.		
		Falls in other costs may offset the effect of the tax.		
1	(d)	Comment on whether a switch from air transport to HST will reduce environmental damage. Analysis of why a switch from air transport to HST will reduce environmental damage • May be a reduction in GHG emissions which will improve air quality.	5	This is a 2+2+1 question Up to 2 marks for analysing whether a switch from air transport to HST will reduce environmental damage. Reward points of development
		More use of HST may reduce car transport and so further reduce air and noise pollution.		Up to 2 marks for counter analysis. Reward points of development
		Counter analysis • Growth of HST will increase use of electricity. More electricity production may increase GHG emissions if overall use of transport increases.		I mark for judgement which may be a simple statement

			 Airlines may increase energy efficiency which will cut GHG emissions created by air transport. Wildlife habitats may be destroyed to lay HST lines. 		
	(e)	(i)	Using information in the extract, explain why Eurostar may be considered to be a monopolist. • A monopoly has a market share of more than	2	 Market share of more than 25 percent is a legal monopoly Market share of more than 40 percent is a dominant monopoly and not an absolute monopoly.
			25%(1).It is a monopoly because it has a market share of 60 percent (1).		menepery and net an absolute menepery.
1	(e)	(ii)	Discuss whether passengers would benefit from an increase in Eurostar's market share of the London to Paris route. Analysis: • enable greater advantage to be taken of economies of scale and so lower average costs (1) • lower average costs may lead to lower prices (2) • a more profitable and secure firm may innovate which may raise the quality of the service passengers enjoy (2)	8	This is a 3+3+2 question. Up to 3 marks for analysing why an increase in the market share of Eurostar will be beneficial for passengers. Up to 3 marks for a counter analysis of why an increase in the market share of Eurostar will not be beneficial for passengers. Up to 2 marks for a clear conclusion/ judgement. No mark for judgement if only one side analysed. Up to 3 marks can be awarded for one well analysed point on either side.
			Counter analysis: • a lack of competition may hamper efficiency		

(organizational slackness) so consumers may not get a better quality service.

- a decrease in cost per unit of service may not be passed on to consumers' in the form of lower prices.
- Safety and other aspects of the provision of service may be compromised in the absence of competition.
- Diseconomies of scale

Judgement:

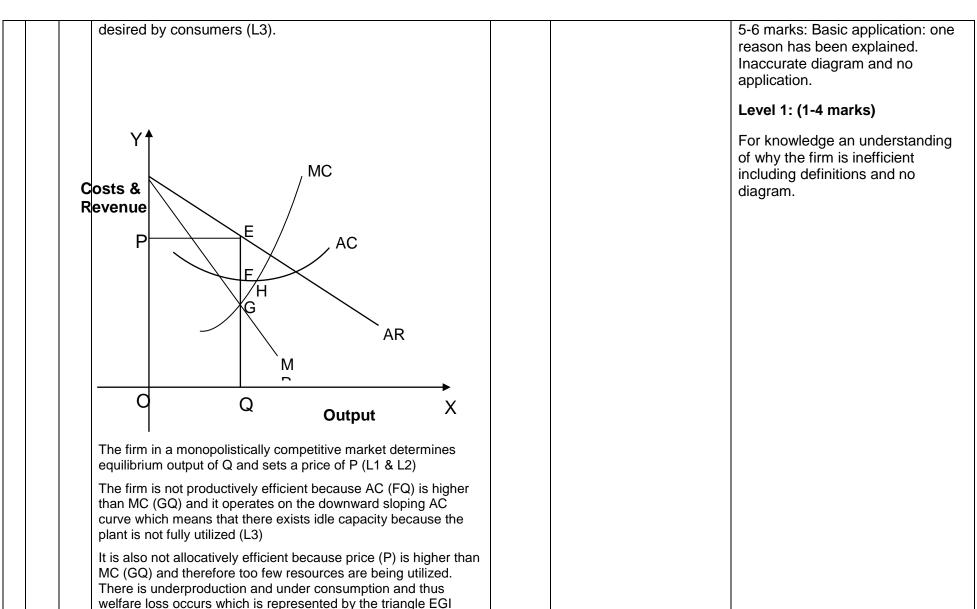
- may depend on whether there is efficient government regulation
- will be influenced by the firm's objectives
- Eurostar will still face competition from other routes.

Question	Answer	Marks	Guidance		
2 (a)	Analyse the main factors determining a passenger's	15	Content	Levels of response	
	choice between different modes of transport.		Analysis of why the factors are relevant in determining a choice	Level 3: (9-15 marks) For a clear analysis of the factors	
	Candidates need to analyse the different factors.		among different modes of transport.= Level 3	determining such a choice.	
	Relevant factors include:			13-15: Very good analysis: Good	
	Relative price/cost		Identification AND	analysis of two or more factors.	
	• income		explanation of factors = Level 2	11-12: Good Analysis: Good analysis of one factor OR a basic	
	Tastes and preferences to include availability,		Identification of factors =	analysis of two factors.	
	convenience, safety, speed, distance etc.		Level 1	9-10: Basic Analysis: Basic analysis of one factor.	
	Relevant analysis of these may include:			Level 2: (5-8 marks)	
	Relative price (L1) because this compares the cost of substitutes (L2) in selecting the mode. Analysis using PED etc. in determining choice (L3)			For an application of knowledge and understanding of factors and no analysis.	
	Income (L1) as Y rises modes become more affordable/consumers more willing and able (L2) Analysis of YED etc. in determining choice(L3)				7-8 marks: Good application: Two or more factors identified and explained.
	Tastes (L1) if one is travelling a long distance there is no alternative modes available except air transport/ when one needs to use the transport from one point of the city to the other one has to take into consideration the modes which are suitable for the purpose / bus transport may not be convenient (L2) which determines choice (L3).			5-6 marks: Basic application: One factor identified and explained.	
				Level 1: (1-4 marks)	
				3-4 Marks: Identification of factors with very little explanation.	
				1-2 marks: Just identification of factors without explanation.	

Question	Answer		Guidance		
2 (b)	Discuss the usefulness of a cost-benefit analysis in	20	Content	Level of response	
	deciding whether to undertake a major airport		Level 4 (a): Possible	Level 4(a): (16-20)	
	infrastructure development project.		judgement includes:		
			The student to achieve	It must include a judgement as to	
	In this section of the question candidates are expected to		The student to achieve	the usefulness of the cost benefit	
	analyse whether cost benefit analysis is useful in deciding		this level a balanced	analysis for making a decision	
	whether or not to undertake a major airport infrastructure		discussion of the usefulness of cost benefit	whether to undertake it or not.	
	development project. To reach Level 4 analysis of BOTH			18-20 marks: Balanced discussion	
	sides is needed along with a judgement.		analysis must be present	with good judgement.	
	Delevent analysis of why post homefit analysis is weeful		along with a judgement. To segregate the level	man good jaagemena	
	Relevant analysis of why cost benefit analysis is useful,		into two subsections a	16-17 marks: Balanced discussion	
	such as:		good judgement and a	with weak judgement.	
	a It is useful because east benefit analysis is a project		weak judgement must be	1 - 14 (1) (44 45 - 1)	
	It is useful because cost benefit analysis is a project It is useful because cost benefit analysis is a project It is useful because cost benefit analysis is a project It is useful because cost benefit analysis is a project It is useful because cost benefit analysis is a project It is useful because cost benefit analysis is a project It is useful because cost benefit analysis is a project It is useful because cost benefit analysis is a project It is useful because cost benefit analysis is a project It is useful because cost benefit analysis is a project It is useful because cost benefit analysis is a project It is useful because cost benefit analysis is a project It is useful because cost benefit analysis is a project benefit analysis and the project benefit and the project benefit and the project benefit analysis and the project benefit and the project benefit analysis and th		considered.	Level 4 (b): (11-15 marks)	
	evaluation technique which takes into account all			It contains balanced discussion.	
	costs (both private and external costs) and all		Level 4 (b): This level	n containe balaneed diseaseion.	
	benefits (both private and external benefits). (L2)		must be awarded to	13-15 marks: Balanced discussion	
	Therefore it is a comprehensive project evaluation		answers containing	with some application.	
	technique in sharp contrast to a financial analysis		balanced discussion with		
	undertaken by private businesses which only take		some application OR a	11-12 marks: Basic discussion;	
	into consideration private costs and benefits (L3).		basic discussion	mainly one sided only.	
			containing mainly one	Level 3: (5-10 marks)	
	 Application of relevant private/external costs/benefits 		sided analysis	Lover e. (e re mane)	
	(L2) analysis re usefulness e.g.		Level 3 This level must	One sided analysis.	
			be awarded to answers		
	It is useful because it puts value to externalities by		with one –sided analysis	8-10 marks: Good analysis: one	
	using non-market valuation techniques. The non-		With one olded analysis	sided analysis.	
	market valuation techniques are used because		Level 2 answer contains	5-7 marks: Basic analysis of one	
	there is no market price for externalities because		just an application of	sided in nature.	
	these are spill over effects borne by the third		knowledge and		
	parties (L3).		understanding.	Level 2: (3-4 marks)	
	After finding out full costs and benefits the values are				
	discounted to their present value by selecting a			For application of knowledge and	
	suitable discount rate (L2). If the net social benefit		Level 1 answer contains		

is positive, then the airport development project will be beneficial. Therefore, the method is highly suitable because it aims to maximize overall welfare in the society from the airport development (L3). Relevant analysis of why cost benefit analysis is unsuitable, such as: • It is highly time consuming because it takes into account all costs and all benefits which is a lengthy process (L2). Opportunity cost argument or invalidates data (L3).	only knowledge and understanding.	understanding. Level 1: (1-2 marks) For only knowledge and understanding.
 It is highly difficult if not impossible to put monetary value on the negative and positive externalities of airport development project (L2) because there is no market price for them/is subjective (L3). 		
Conclusion (L4a): Though results of cost benefit analysis are based on estimated monetary values relating to costs and benefits of any planned development project such as an airport it nevertheless is useful analysis. In order to make it more reliable non-market valuation methods must be refined so that the externalities may be assessed properly. And the discount rate should reflect the social preferences of present over the future.		

Question	Answer	Marks	Guidance	
3 (a)	Analyse, using a diagram, why a firm in monopolistic	15	Content	Level of Response
	Analysis of productive and allocative efficiencies with reference to monopolistic competition required. There may also be reference to dynamic efficiency Answer may include: Definition of productive and allocative efficiencies (L1)		An analysis of why the firm may be considered inefficient on efficiency grounds but overall welfare gains due to the availability of substitutes may compensate the welfare loss reaches Level 3	Level 3: (9-15 marks) For a clear analysis of why a firm in a monopolistically competitive market is inefficient on efficiency grounds but on choice it promoted consumers' welfare and thus may be socially desirable. Diagram is fully applied and correctly drawn.
	 Features or characteristics of monopolistic competition (L1) A diagram showing price and output determination in monopolistic competition by a representative firm (L2) With reference to the diagram an analysis of why the firm is both productively and allocatively inefficient (L3). Firms in monopolistic competition provide many close substitutes and thus they increase consumers' welfare/increase allocative efficiency. (L3) Relevant analysis may include: Productive efficiency occurs when AC=MC and allocative efficiency occurs when P=MC (L1) because at AC=MC a full utilization of the existing plant takes place. It means there does not exist idle capacity (L3). When P=MC it means that right amount of economic resources is allocated in the production of the good as 		Definition and explanation with no analysis = L2 Definition with no application= Level 1.	13-15: Very good analysis: good analysis of why it is inefficient and why not using all criterion. Full application of diagram with correct labelling. 11-12: Good analysis: good analysis of why it is inefficient using some of the criterion. Good application of diagram. 9-10: Basic analysis: basic analysis using some of the criterion. Some errors in diagram. Level 2: (5-8 marks) For an application of knowledge and understanding of why the firm is inefficient. 7-8 marks: Good application: some criterion have been applied but not analyzed. Diagram not properly drawn and applied.



(L3).

			However, it may be regarded as socially desirable because the firms produce differentiated products and benefit received through a wider range of choice may more than compensate the welfare loss (L3).			
Q	uesti	on	Answer	Marks	Guidance	
3	(b)		Discuss whether increased subsidies would make the	20	Content	Level of response
			 UK transport more sustainable. Increased subsidies to the UK transport sector may lead OR may not to UK transport sector becoming more sustainable. To reach L4 analysis of BOTH sides and with a judgement. Relevant analysis of why the provision of subsidies may make the transport more sustainable: Provision of increased subsidy to public transport such as buses would reduce bus fares (L2). As a result of this more people may travel by bus rather than travelling by car. This should reduce traffic congestion and pollution in the cities due to a modal shift brought about by increased subsidies. The more price elastic demand is, the larger the increase in demand for public transportation. Similarly demand for car travel should also be elastic so that a shift takes place from car travel to public transport (L3). The provision of subsidies for the development of alternative modes of transportation such as High Speed Trains (HST) and the development of hybrid cars and other vehicles (L2) which are gentle on 		Level 4 (a) answer must contain a very good analysis of both the sides of argument. But for an upper band it must contain a good judgment and a weak judgment will get a lower band under this level. Level 4 (b) contains a balanced discussion of both sides without a judgment or a basic discussion containing mainly one side only. Level 3 answers just contain one sided good and basic analysis. Levels1 and 2 answers just contain application of knowledge and understanding or contain just knowledge and understanding.	Level 4 (a): (16-20 marks) For an analysis containing very good balanced discussions of both sides and good judgment. 18-20 marks: Balanced analysis with good judgment. 16-17 marks: balanced analysis with weak judgment. Level 4 (b): (11-15 marks) 13-15 marks: Balanced discussion without a judgment. 11-12 marks: Basic discussion mainly one sided. Level 3: (5-10 marks) 8-10 marks: Good analysis: one sided analysis. 5-7 marks: Basic analysis: a basic analysis of one side.

the environment may lead to the UK transport sector becoming more sustainable (L3). Relevant analysis of why the provision of subsidies may not make the UK transport more sustainable: Provision of subsidies is not going to make it sustainable if public transport is not reliable, service is of poor quality, does not reach to every corner of the city and is considered inferior(L2). In these cases, a lower price will not have a significant impact on demand (L3). There is a risk that subsidies may encourage inefficiency (L2) with less pressure on firms to keep their costs low and to respond to consumer demand (L3). People may be reluctant to switch from car use (weak substitutes) (L2) and so provision of subsidies to the UK public transport such as to bus transport may not lead to a significant modal shift (L3). Subsidies involve an opportunity cost (L2). Instead of subsidising transport, the government could seek to reduce the need for transport by e.g. discouraging the building of out of town stores (L3). Therefore, alternative measures should be implemented such as alternative modes of transport such as metros, HST (High Speed Trains) and development of hybrid cars and other	Level 2: (3-4 marks) For application of knowledge and understanding but lacks relevant analysis. Level 1: (1-2 marks) For knowledge and understanding only.

	vehicles (L3).		
	veriicies (L3).		
	Conducion (L4a)		
	Conclusion: (L4a)		
	The extent to which subsidies will make transport more		
	sustainable will depend on the degree of market failure,		
	what the subsidies are used for and how economic agents		
	response to the subsidies. The aim of subsidies may be		
	designed more to promote equity rather than to promote		
	sustainability e.g. subsidising bus fares for retired		
	passengers.		
1 1 1			

Qu	estio	Answer		Guidance		
4	(a)	Analyse why there is market failure in road travel.	15	Content	Level of Response	
		Analysis of why there is market failure in road travel.			Level 3: (9-15 marks)	
		Relevant concepts and diagram which may be included		A Level 3 answer must		
		(L2):		contain a very good	For a clear analysis of why market	
		 Roads are public goods in many cases. 		analysis why does road	failure occurs in road travel.	
		They are non-excludable and non-rival in most cases.		travel leads to market failure with the full use of a correctly drawn diagram. The answer	13-15 marks: Very good analysis of why market failure occurs in road travel.	
		 When economic agents make decisions in relation to road travel they take into account only private costs and private benefits. 	to may be segregath three levels on the concepts were discontinuous may be segregated three levels on the concepts were discontinuous may be segregated three levels on the concepts were discontinuous may be segregated three levels on the concepts were discontinuous may be segregated three levels on the concepts were discontinuous may be segregated three levels on the concepts were discontinuous may be segregated three levels on the concepts were discontinuous may be segregated three levels on the concepts were discontinuous may be segregated three levels on the concepts were discontinuous may be segregated three levels on the concepts were discontinuous may be segregated three levels on the concepts were discontinuous may be segregated three levels on the concepts were discontinuous may be segregated three levels on the concepts were discontinuous may be segregated three levels on the concepts were discontinuous may be segregated through the concepts and the concepts are discontinuous may be segregated through the concepts and the concepts are discontinuous may be segregated through the concepts are discontinuou	may be segregated into three levels on the basis of how effectively	11-12 marks: Good analysis of why market failure occurs in road travel.	
		Road travel gives rise to externalities.		concepts were defined possibly with a diagram	9-10 marks: Basic analysis of why market failure occurs.	
		 Almost all externalities generated in road travel are negative externalities. 		contains application of knowledge and understanding possibly knowledge and	Level 2: (5-8 marks) 7-8 marks: Good application of	
		 Negative externalities in road travel include pollution, noise, traffic congestion, accidents. 			knowledge and understanding of why market failure occurs in road travel.	
		There is a divergence between social costs and private costs. The diagram showing an impact of		A Level 1 answer contains just knowledge and understanding	5-6 marks: Basic application of knowledge and understanding.	
		negative externalities of road travel on third parties.		without an application or just elementary	Level 1: (1-4 marks): For knowledge and understanding of market failure	
		Relevant analysis may be:		definitions of terms	or for some basic understanding.	
		Private individuals while making decisions on road		associated with market		
		travel they only take into account their MPC (L2)		failure.		
		resulting in overconsumption (L3). Since roads are				
		mostly considered as public goods they display the				
		non-excludability and non-rivalry features (L2) and				

		1		
the free-rider pro	blem results (L3).			
	m. Externality not considered (L2)			
	PC because of the negative			
	. This is known as market failure			
	greater than the MPC by the gative externality in road travel.			
	ater than MPC and therefore			
welfare loss occu				
	()			

Question Answer		Answer	Marks	Guidance		
4	(b)	Discuss whether building more roads is likely to be effective in reducing traffic congestion.	20	Content	Levels of response	
		Analysis of whether building more roads will lead to a reduction in traffic congestion or it would not lead to a reduction in traffic congestion and in the end provide their reasoned judgment. Relevant analysis of why traffic congestion will decrease: • Traffic congestion has become a major problem in many over the years (L2). • Up to a certain extent roads display the features of public goods (L2). • However, an increase in number of cars over the years has made it rivalrous because road use by some leads to congestion due to a lack of space and infrastructure (basic L3). • Increased supply of roads perhaps with a diagram (L3 basic) • Building more roads would certainly lead to a decrease in traffic congestion in the short run because opening up new routes connecting cities may give options to vehicle users to choose a route suitable for them as per the need and time of use (good L3). Relevant analysis of why traffic congestion will not decrease:		Level 4 (a) answer must contain a very good analysis of both the sides of argument. But for an upper band it must contain a good judgment and a weak judgment will get a lower band under this level. Level 4 (b) contains a balanced discussion of both sides without a judgment or a basic discussion of mainly one side only. Level 3 answers just contain one sided good and basic analysis. Levels1 and 2 answers just contain application of knowledge and understanding or contain just knowledge and understanding.	For a discussion of whether building more roads would lead to a reduction of traffic congestion with a judgment. 18-20 marks: Balanced discussion with good judgment. 16-17 marks: balanced discussion with weak judgment. Level 4 (b): (11-15 marks) For a two sided discussion with application. 13-15 marks: Balanced discussion with application. 11-12 marks: basic discussion mainly one sided only. Level 3: (5-10 marks) 8-10 marks: Good analysis on one side. 5-7 marks: Basic analysis which lacks application. Level 2: (3-4 marks) For an application of knowledge	
		Building new roads is not the solution because				

people certainly prefer to own and drive their own	and understanding
cars as affordability increases over the period of	Level 1: (1-2 marks)
time (L2) and cars on roads will increase whether	Level 1. (1-2 marks)
new roads are built or not (L3).	For only knowledge and
Supply of more roads may increase demand for road	understanding.
travel (L2) as travel times/costs are reduced (L3).	
traver (LZ) as traver times/costs are reduced (L3).	
Construction of new roads, through densely	
populated cities entails huge displacement costs	
and people object to such plans. Even if such	
development works materialises it would be a short	
term solution because in the long run again such	
problems will arise (L3).	
Even if massive investments are made construction	
of roads takes many years to materialise and by	
the time roads are completed traffic congestion will	
emerge again (L3).	
Conclusion (L4a)	
So instead of relying on new road development an efficient	
road pricing system may be introduced during busy hours	
so that traffic pressure on roads can be reduced and the	
government should look for long term solution of such	
problems by making public transport such as HST, metros	
and public buses more reliable, attractive and cost efficient so that people have confidence in the safety of such	
modes of transport so that a long term solution can be	
found for traffic congestion. Selective roadbuilding to	
reduce bottlenecks may be more appropriate as part of an	

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