2887 - Sperimen

# Answer all parts of this question

# The Problem of Pollution

Every day, there are innumerable instances where firms and other organisations pollute their local environment, deliberately in the main but sometimes by accident. The extract below, taken from a national newspaper, reports on a particular case whereby the polluter was successfully prosecute for the environmental problems caused by a spillage of chemicals into a local river.

# Water firm is fined over salmon deaths

A water company was fined £175,000 yesterday for poisoning a salmon river. Severn Trent Water admitted leaking chemicals into the Wye, killing 33,000 young salmon - 98 per cent of the stock in the river.

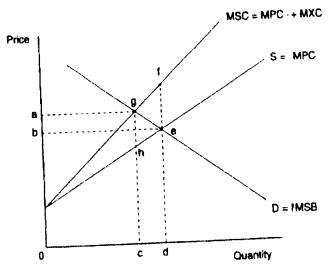
Cardiff Crown Court heard that the leak was the company's 34th conviction since privatisation in 1990. Judge John Prosser criticised the company for its poor record and described its management as 'very slack indeed'. Mark Bailey, prosecuting for the National Rivers Authority, said that pollution from the Elan Valley water treatment works, at Rhayader, Powys, had 'catastrophic consequences for the river'.

'An estimated 33,000 young salmon were exterminated by this leak, which affected eight kilometres of river', he said. 'It is relatively easy to replace adult salmon, but these young salmon need to be replaced with the fish from the same gene pool. Severn Trent caused this catastrophe through a collection of errors, including bad management and inferior maintenance. The area is one of the most significant salmon fishing areas in England and Wales and this is one of the most significant incidents. The sheer number of fish killed is higher than any other incident.'

Judge Prosser told water company executives sitting in the court that the leak was due to design defects, gross mismanagement and inferior maintenance. The company also claimed it was not responsible for the whole of the pollution.

Incidents such as the one described above are the outcome of a situation whereby the market mechanism has failed to produce the best allocation of resources due to negative externalities. Economists can explain the pollution of the River Wye by Severn Trent Water in terms of the diagram shown in Fig. 1.

(ii)



(MXC = marginal external costs; MPC = marginal private costs; MSC = marginal social costs; MSB = merginal social benefit)

Fig. 1 Private & Social Cost Divergence [Adaptation: Wilkinson M, Equity, Efficiency and Market Failure, Heineman Educational, 1997 and Daily Telegraph, 6 August 1996]

[2] Describe what is meant by a negative externality. (a) (i) Use the evidence in the newspaper article to show how negative externalities (ii) [6] apply to this particular pollution incident. (b) Use Fig. 1 to answer the following questions and, in each case, assume a competitive market operates with no government intervention. What would be the market equilibrium price and output? Explain your (i) [4] answer. What would be the price and output at the social optimum? Explain your (ii) [4] answer. What are the consequences for the firm and for its consumers of the differences between price and output levels at the market equilibrium and the (iii) [6] social optimum? Drawing upon the case described in the newspaper article, state the arguments for and against fines as a means of reducing environmental (c) (i) [6] pollution. With the help of Fig. 1, explain how it might be possible to apply a pollution

charge or green tax in this particular case.

[7]

(d) Suppose the National Rivers Authority decides to consider closing the present Elan Valley water treatment works and recommend its replacement with a new works in a different site. Discuss how an economist might use the cost-benefit approach to determine whether this action should be taken.

[10]



ECONOMICS 2882

Market Failure and Government Intervention

Tuesday

23 JANUARY 2001

Afternoon

1 hour 30 minutes

Additional materials: Answer booklet

TIME 1 hour 30 minutes

# **INSTRUCTIONS TO CANDIDATES**

Write your name, Centre number and candidate number in the spaces provided on the answer booklet. Answer all questions.

Write all your answers on the separate answer booklet provided.

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#### INFORMATION FOR CANDIDATES

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#### The National Health Service

The provision of health care through the National Health Service (NHS) in the United Kingdom has proved to be a problem for governments in recent times. Governments always claim that they are spending more money than before on the NHS but the service is often perceived to be in crisis and possibly getting worse. Pressures on the NHS continue to grow with an ageing population and the development of new and expensive medical drugs and technology.

The article below points out some of the problems that have to be addressed and the figures illustrate some of the statistics often quoted about the NHS.

# Challenges facing the NHS

Whoever is in charge of the NHS has to choose how scarce resources are allocated among ever-increasing demands. Using the price mechanism to limit demand is out of the question. Medical care is free, although the price of prescription drugs, for those who have to pay, is currently £6. Although the Department of Health dislikes the word, 'rationing' (i.e. limiting the amount of health care available) is now the principal task of the NHS's managers. Of course, rationing has been part and parcel of the NHS since its birth in 1948. The range of national health care on offer has been limited by every government spending decision, every clinical guideline, and the price paid for every medical drug.

In addition to rationing across the country as a whole, there is a lot of 'postcode prescribing', i.e. local variation in what the NHS provides. Much of the strong criticism of the previous Tory government stemmed from their attempt to introduce competition between hospitals and other providers of health care. What that did was to show clearly that some local health authorities restrict, or do not provide, certain services that are available in other areas. These include cosmetic surgery and some forms of cancer treatment.

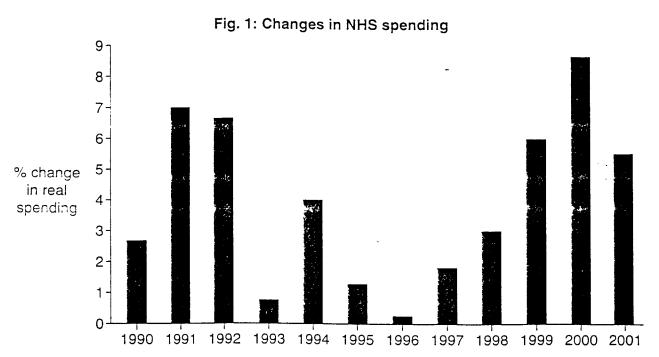
The government, while notably silent about the ways and means of rationing, must nevertheless address its effects. It has promised to shorten hospital waiting times and to increase the number of intensive-care beds. It also wants to minimise regional differences in provision.

[Adaptation: The Economist, 26 February 2000]

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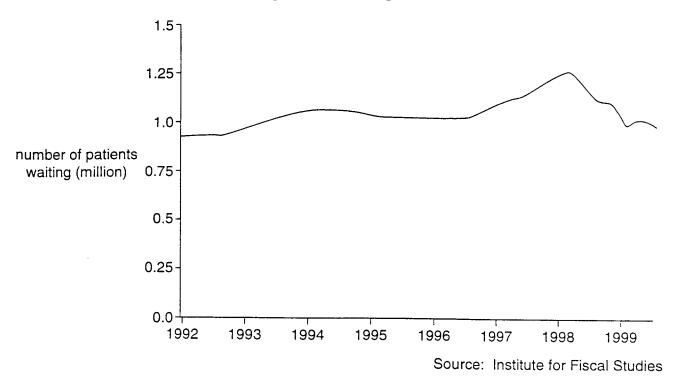
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Source: Institute for Fiscal Studies

Fig. 2: NHS waiting lists



(a) (i) Define the term 'merit good'.

[2]

(ii) Explain why health care is classified as a merit good.

- [4]
- (b) (i) State **one** reason why it may be seen as 'unfair' if all health care were to be provided by the market system.
  - (ii) Identify **one** reason from the article why the current provision of health care could be seen as 'unfair'. [2]
- (c) (i) Using Fig. 1, describe what happened to health care spending between 1990 and 2000.
  - (ii) The article states that 'medical care is free' (line 3). Consider the economic reasons why the government provides health care 'free'. [8]
- (d) (i) Using Fig. 2, describe what happened to NHS waiting lists between 1992 and 1999. [3]
  - (ii) Explain why the free provision of health care by the NHS, together with ever-increasing demand for health care, must lead to 'rationing' (line 4). [7]
- (e) (i) Explain what is meant by 'productive efficiency' and 'allocative efficiency'. [6]
  - \*(ii) The article mentions an attempt to introduce more competition into the market for health care (lines 11–12). Discuss whether greater competition is likely to increase efficiency in markets.



ECONOMICS 2882

Market Failure and Government Intervention

Tuesday 5 JUNE 2001

Afternoon

1 hour 30 minutes

Additional materials: Answer Booklet.

TIME 1 hour 30 minutes

#### **INSTRUCTIONS TO CANDIDATES**

Write your name, Centre number and candidate number in the spaces provided on the answer booklet. Answer **all** questions.

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### INFORMATION FOR CANDIDATES

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This question paper consists of 4 printed pages.

Answer all parts of this question.

# The Problem of Global Warming

The problem of global warming is caused by the emission of 'greenhouse gases', notably carbon dioxide, into the atmosphere. This process appears to be causing climatic changes and rising sea levels.

The effects of global warming can be understood through economic theory. They represent costs that are imposed on one group by the actions of another group. Economists see this as a typical example of market failure that may lead to government intervention.

The following extracts outline some of the issues surrounding global warming.

#### Extract 1

### **Prescott issues climate warning**

Deputy Prime Minister, John Prescott, has insisted that industrialised nations must take urgent action to combat greenhouse gases and climate change. This seems to reflect the views of many scientists who believe that climatic change is being caused by pollution from transport and industry, especially in more wealthy economies. Such views have gained the strong support of developing countries, especially low-lying ones vulnerable to flooding, who see the need for urgent change.

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At the World Climate Summit held in Kyoto, Japan, in 1997, many of the main developed nations agreed to cut greenhouse gas emissions by 6% by 2010. Mr Prescott said: 'Time is running out. Developed countries need to start taking action now if they are to meet their Kyoto targets.'

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BBC News 24th August 2000 [adapted]

#### Extract 2

#### New energy tax will hit Labour heartlands

Engineering industries in areas of traditional Labour support will suffer most from the Government's new energy tax<sup>1</sup> (the Climate Change Levy), an employers' group claimed yesterday. The levy means that companies are taxed on the amount of energy they use. It has been introduced by the Government to meet targets for the reduction of greenhouse gases. The Engineering Employers' Federation (EEF) has estimated that some companies stand to lose more than £400,000 a year as a result of this tax. The main burden of the tax, which starts in 2001, will fall on companies with large energy bills, particularly large manufacturing and engineering businesses.

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The Shadow Chancellor, Michael Portillo, said the cost to businesses of the new energy tax would make British industries less competitive. 'The Government is piling extra costs onto manufacturing businesses at a time when they can least afford it', said Mr. Portillo. 'The environment won't benefit if the energy tax makes British producers lose business to others overseas whose environmental standards are often lower.'

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<sup>1</sup> An energy tax is an example of what economists call a 'carbon tax' or, more broadly, a 'green tax'.

(a)	(i)	Describe what is meant by the term negative externality.	[2]
	(ii)	Using Extract 1, identify <b>one</b> negative externality that might arise as a result of gl warming. Explain your answer.	obal [4]
(b)	(i)	Define what is meant by allocative efficiency.	[2]
	(ii)	Explain why negative externalities prevent allocative efficiency being achieved.	[4]
(c)	(i)	Describe what is meant by an energy tax (Extract 2, line 2).	[2]
	(ii)	Using a diagram, explain how an energy tax can be used to overcome the problem negative externalities.	
(d)	(i)	<ul> <li>Extract 2 refers to some of the limitations of using an energy tax. Identify and expl</li> <li>two limitations of such a tax.</li> </ul>	
	(ii) Comment upon whether a world tax on energy use would be more effective		ch a

(e)\* As alternatives to the use of 'green taxes', the UK government could consider a range of other policies in order to reduce negative externalities. These alternative policies are direct government regulation, subsidies to producers and consumers, and marketable pollution permits.

tax imposed by just one country.

Discuss the likely effectiveness of **one** of these policies in reducing emissions of greenhouse gases. [10]

[5]



ECONOMICS 2882

Market Failure and Government Intervention

Friday 18 JANUARY 2002

Morning

1 hour 30 minutes

Additional materials: Answer Booklet.

TIME

1 hour 30 minutes

#### **INSTRUCTIONS TO CANDIDATES**

Write your name, Centre number and candidate number in the spaces provided on the answer booklet. Answer all questions.

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This question paper consists of 4 printed pages.

Answer all parts of this question.

## The market for higher education

All courses at universities used to be provided free in the United Kingdom. This was justified in several ways, including providing the economy with a highly skilled work force. Students were also given a grant to help pay living expenses while studying. The days of free higher education have gone. Not only has the grant been replaced by a student loan, but annual tuition fees now have to be paid. There is also talk of allowing some universities to increase their tuition fees significantly, if they wish to do so. This represents a possible move towards a free market in higher education.

The following extract and Table 1 highlight some of the issues involved.

## Charging for higher education

Many universities, desperate to increase their income, are now keen to charge higher fees, confident that students will be happy to pay extra for the best higher education. Soon, students may be paying significantly different fees depending on their university and their subject. Law at Cambridge, for example, will cost more than sociology at one of the new universities.

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Nick Barr, an economist, argues that universities should be allowed to set their own fees. He thinks the loan system is fair as loans are only repaid by graduates with above average earnings. He contrasts this with the previous system in which higher education was provided free to all, even those from well-off backgrounds.

Robert Taylor, Vice-Chancellor of Buckingham, Britain's only private university, says that if students have to pay more for their education, universities will be compelled to treat them better than at present by providing better facilities and an improved student/staff ratio. 'The best guarantee of quality is people paying for it.'

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The Guardian, 9th February 2000 [adapted]

#### Extract 1

#### Higher education and weekly earnings

Difference in average weekly earnings of those obtaining a university degree compared to those not entering university.

Men	+22.2%
Women	+42.1%

Source: 'The Returns to Higher Education in Britain: Evidence from a British Cohort', Institute for Fiscal Studies.

Table 1

(a) (i)	What is meant by the term positive externality?	[2]
(ii)	Identify and explain <b>one</b> possible positive externality that could arise education.	from higher
(b) (i)	Explain two characteristics of a public good.	[4]
(ii)	Explain one reason why higher education is not a public good.	[4]
(c) (i)	From Table 1, identify <b>two</b> effects on average weekly earnings of obtaining degree.	a university [2]

- (ii) Explain why the benefits to average earnings shown in Table 1 are private benefits. [4]
- (d) Economists suggest that services, such as higher education, that have positive externalities should be subsidised by the government.

Using a diagram, analyse how a subsidy will encourage the increased provision of such services. [10]

- (e) (i) Using supply and demand analysis, comment upon whether a free market in university education will always lead to higher charges for law at Cambridge than for sociology courses at new universities (see Extract 1, lines 3–5). [6]
  - \*(ii) University tuition in Scotland is now free for all Scottish students.

Discuss the likely costs and benefits, both to society and to individual students, if tuition fees were also abolished in the rest of the UK. [10]



ECONOMICS 2882

MARKET FAILURE AND GOVERNMENT INTERVENTION

Friday

31 MAY 2002

Morning

1 hour 30 minutes

Additional materials: Answer Booklet.

TIME 1 hour 30 minutes

#### **INSTRUCTIONS TO CANDIDATES**

Write your name, Centre number and candidate number in the spaces provided on the answer booklet. Answer **all** questions.

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(NH) S26355/2

## Answer all parts of this question.

#### Government and the environment

There are several serious concerns about our environment. These include pollution of various sorts, the effects of global warming and fears over the future of the countryside.

All environmental problems can be seen as examples of market failure. They are problems created by some individuals and groups that impact upon others who are not involved in the decision-making. As such, these problems may require government action if they are to be tackled. The following article considers the Government's recent record in tackling some of these issues.

# Promises, promises: has Blair really been a friend of the environment?

When Tony Blair made his final speech to voters before the 1997 general election, the Labour leader promised to put the environment at the 'heart of government'.

After Labour's victory, each government department was given its own 'green minister' and a Commons Select Committee was set up to provide proper scrutiny of environmental issues. How has the Government matched up to its early promises?

## Fuel prices

The Environment Minister, Michael Meacher, had said the automatic fuel escalator (which significantly raised taxes on petrol each year) was valuable both in persuading people to use public transport and in helping to reduce pollution. Unfortunately, the huge rise in the price of crude oil in 2000 left the Government vulnerable to fuel protests by lorry drivers and farmers. Ministers panicked and opted for cuts in duty on diesel for hauliers without any additional environmental safeguards.

# Climate change

Deputy Prime Minister, John Prescott, took a leading role in the agreement at the Kyoto climate summit in 1997 to reduce greenhouse gas emissions that cause global warming. However, by abandoning the fuel duty escalator and pandering to the haulage industry, greenhouse gas emissions are likely to increase.

#### Wildlife and the countryside

The Countryside and Rights of Way Act introduced the so-called 'right to roam'. This allows visitors to the countryside to walk freely on all footpaths. There has also been action to defend peatlands from the destructive actions of fertilizer companies, and tough talk (but no legislation) about excessive leaks from water company pipes.

#### Nuclear power

Tony Blair has given the nuclear industry strong support since taking office. He believes that the industry offers crucial jobs and skills in the depressed west Cumbrian region.

#### Renewable energy

It is believed that renewable energy creates less pollution as well as providing a

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sustainable energy source. The Government announced a target of 10 per cent of total energy generation from renewable sources by 2010. A subsidy of £100 million for solar, wind, wave and biomass forms of power generation has recently been announced but many experts claim wind power should be boosted with bigger capital grants.

Source: The Independent, 7th March 2001 [adapted]

(a)	(i)	Define the term 'externality'.	[2]
	(ii)	From the article, identify <b>two</b> examples of a negative externality.	[2]
	(iii)	From the article, identify <b>two</b> examples of a positive externality.	[2]
(b)	The	newspaper article talks about a large increase in fuel prices (lines 7-12).	
	(i)	Give <b>one</b> group who might suffer financial hardship due to a large rise in fuel pric Explain the reasons for your answer.	es [3]
	(ii)	Give <b>one</b> type of transport business that might benefit through a large increase in f prices. Explain the reasons for your answer.	ue [3]
(c)	(i)	State <b>two</b> characteristics of 'public goods'.	[2
	(ii)	How far does the 'right to roam' (line 17) make the countryside more like a public good?	[4]
(d)	(i)	Define the term 'subsidy'.	[2
	(ii)	Using a diagram, explain how a government subsidy paid to the renewable ene industry might increase the consumption of renewable energy.	rgy [7
	(iii)	Identify and comment on the costs and benefits of paying a large subsidy to renewable energy industry.	the [8]
(e)'		cuss the advantages and disadvantages to the government in using taxes to improve	th∈



ECONOMICS 2882

MARKET FAILURE AND GOVERNMENT INTERVENTION

Friday

**17 JANUARY 2003** 

Morning

1 hour 30 minutes

Additional materials: Answer Booklet.

TIME 1 hour 30 minutes

### **INSTRUCTIONS TO CANDIDATES**

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## Answer all parts of this question.

# Market failure, public services and government failure

When markets do not achieve economic efficiency (that is productive plus allocative efficiency), economists say that markets fail. There are several different examples of such failure, but they all arise owing to scarce resources not being used in the best possible way. Governments may respond to such failures by intervening in these markets. One possible form of intervention is for the government to provide services to the general public. These are known as 'public services'. The article below looks critically at government provision of such services in the UK and considers the ways the government might end up running them. Table 1 focuses on the government provision of one particular service – health care.

# Public Services: Time to stop prattling and start spending

The European Court of Justice has recently made a significant ruling in the field of health care. It decreed that UK patients facing 'undue delays' have a right to seek treatment elsewhere in Europe and to send their bills to Britain's health service.

The European Court's decision was reasonable and fair. It is just a shame that European judges cannot play a larger role in British government policy. When one reads of British children without qualified maths teachers, one wishes the judges could rule that such children have a right to seek education in Germany — and to send the bill to the Department of Education. And when one reads of the poverty of British pensioners, one wishes the judges could rule that British pensioners should enjoy the same pension rights as the Swedish — and send the bill to Gordon Brown, the British Chancellor.

Funding seems to be the main problem. The figures could not be more decisive. Take health care, for example. To reach the European average, Britain would have to increase spending from about 6 per cent of the country's total income to 9 per cent or more. And other public services – such as schools, universities and transport – are also chronically under-funded, but perhaps not quite to the same degree as health care.

Michael Prowse, Financial Times, 1 September, 2001

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# The relation between health spending and life expectancy

The table below shows the ranking for each country in each category listed where 1 is best (highest) and 7 is worst (lowest).

Country	Health care spending	Female life expectancy	Male life expectancy
United States	1	7	7
Germany	2	5	6
France	3	2	5
Canada	4	3	2
Italy	5	4	3
Japan	6	1	1
United Kingdom	7	6	4

Source: Institute of Fiscal Studies

Table 1

(a)	(i)	Define the term productive efficiency.	[2]
	(ii)	Identify and explain <b>one</b> reason why a monopoly, such as a local hospital, might rachieve productive efficiency.	not [3]
(b)	(i)	What evidence is there in Table 1 that the UK spends less on health care than oth similar developed economies?	ner [2]
	(ii)	Using the data in Table 1, comment on the suggestion in the article that higher spendi on health care will lead to a better service.	ng [6]
(c)	(i)	Define the term inequality of income.	[2]
	(ii)	Explain how the government provision of a pension to everyone over a certain a reduces the inequality of income in a country.	ge [4]
(d)	(i)	Define the term government failure.	[2]
	(ii)	Identify and explain one example of government failure mentioned in the article.	[4]
(e)	(i)	Explain why health care is classified as a merit good.	[4]
	(ii)	Health care is provided free in the UK. Identify and comment upon <b>one other</b> means which the government could encourage the consumption of health care.	by [6]
(f\*	The	article suggests that more money needs to be spent by the government on education.	



ECONOMICS 2882

MARKET FAILURE AND GOVERNMENT INTERVENTION

Friday 6 JUNE 2003 Morning 1 hour

Additional materials: Designated Answer Booklet [2882/AB]

TIME 1 hour

#### **INSTRUCTIONS TO CANDIDATES**

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This question paper consists of 4 printed pages.

Answer all parts of this question in the accompanying answer booklet.

### New houses in the UK

There is a problem with housing in the United Kingdom. In particular, there is a serious shortage of housing in some parts of the country. This can be seen as an example of market failure. It is judged that the market is not able to provide the desired numbers and types of housing that are needed. Thus the government intervenes to try to correct the perceived market failure. This intervention can, in turn, cause problems. The following article reports on this.

# Prescott gives the go ahead for building new homes

John Prescott, Deputy Prime Minister, yesterday approved new house building in the crowded South East, equivalent in size to the city of Southampton.

There will be an extra 43,000 homes a year over the next five years — a 10% increase on previous plans. The Deputy Prime Minister sought to calm concern about 'concreting over the countryside' by announcing a major shift in planning policies.

Mr Prescott insisted that 60% of the new homes would be on recycled land. He added that more affordable homes were needed for those on low incomes and public sector workers (such as teachers and nurses) and more provision for single people.

The initial focus of new development will be in the Thames Valley, estimated to be capable of absorbing 100,000 new homes. Studies are planned into other housing developments at Milton Keynes and Ashford, Kent, which may generate economic benefits to these areas.

Archie Norman, the Conservative environment spokesman, said it was 'a bad day'
for the South East. Kent County Council said it was prepared to challenge the
Government's right to dictate what houses should be built where.

The Daily Telegraph, 8 March 2000 (adapted)

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- (a) (i) Define the term 'externality'. [2]
  - (ii) State and explain **one** possible **negative** externality that may arise from building more houses in an area. [3]
  - (iii) State and explain **one** possible **positive** externality that may arise from building more houses in an area. [3]
- (b) (i) Economists often make use of the term 'distribution of income'. Define what is meant by this term. [2]
  - (ii) Explain why an unequal distribution of income might lead to government concern about the lack of affordable homes in certain parts of the UK. [2]
  - (iii) The government could impose a maximum price on houses in order to ensure that they are affordable. Using a diagram, explain the economic effects of such a maximum price policy.

    [10]
- (c) (i) Explain one advantage and one disadvantage of using government regulation to reduce market failure. [4]
  - (ii) Comment on the likely effectiveness of government subsidies to house builders to encourage them to build houses in areas of housing shortage. [7]
- (d)\* Discuss how the government might use a cost-benefit approach to decide upon the best sites for the development of new housing. [12]

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