Version 1.0: 0212

General Certificate of Education (A-level)
January 2012

General Studies A GENA4

(Specification 2760)

Unit 4: Science and Society (A2)

Final

Mark Scheme

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all examiners participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for standardisation each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, examiners encounter unusual answers which have not been raised they are required to refer these to the Principal Examiner.

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Unit 4 (A2 Science and Society)

INTRODUCTION

The nationally agreed assessment objectives in the QCA Subject Criteria for General Studies are:

AO1 Demonstrate relevant knowledge and understanding applied to a range of issues, using skills from different disciplines.

AO2 Marshal evidence and draw conclusions: select, interpret, evaluate and integrate information, data, concepts and opinions.

AO3 Demonstrate understanding of different types of knowledge, appreciating their strengths and limitations.

AO4 Communicate clearly and accurately in a concise, logical and relevant way.

- The mark scheme will allocate a number or distribution of marks for some, or all, of the above objectives for each question according to the nature of the question and what it is intended to test.
- In most cases mark schemes for individual questions are based on *levels* which indicate different qualities that might be anticipated in the candidates' responses. The levels take into account a candidate's knowledge, understanding, arguments, evaluation and communication skills as appropriate.
- Examiners are required to assign each of the candidates' responses to the most appropriate level according to **its overall quality**, then allocate a single mark within the level. When deciding upon a mark in a level examiners should bear in mind the relative weightings of AOs (see below). For example, in Section B more weight should be given to AOs 1 and 2 than to AOs 3 and 4.
- *Indicative content* is provided as a guide for examiners. It is not intended to be exhaustive and other valid points must be credited. Candidates do not have to cover all points mentioned to reach the highest level.
- A response which bears no relevance to the question should be awarded no marks.

Distribution of marks across the questions and assessment objectives for this unit

Question Numbers		Q1	Q2	Q3	Q4	AO marks for Sec. A	AO marks for Sec. B	AO marks for A + B
Assessment Objectives	AO1	2	2	3	3	10	8	18
	AO2	6	4	4	4	18	7	25
	AO3	1	4	2	2	9	5	14
	AO4	2	2	2	2	8	5	13
Total marks per Question		11	12	11	11	45	25	70

GENERAL MARK SCHEME FOR SECTION A

Level of response	Mark range	Criteria and descriptors for Assessment Objectives 1 – 4
LEVEL 3	10 – 11 (12)	**Good response to question** Good to comprehensive knowledge and understanding demonstrating overall grasp of the range and nature of issues (AO1). Capacity to interpret evidence and sustained ability to present relevant arguments, analysis and exemplification, focusing on the main points of the question (AO2). Some understanding of different types of knowledge, with some appreciation of their limitation in seeking to reach a reasoned and logical conclusion (AO3). Ability to communicate clearly and accurately in a fluent and organised manner (AO4).
LEVEL 2	5 – 9	**Reasonable attempt to answer question** Modest to quite good knowledge and understanding demonstrating some grasp of the nature of some key issues (AO1). Moderate range of arguments, analysis and exemplification covering some of the main points of the questions (AO2). Limited understanding of different types of knowledge but some ability to work towards a conclusion (AO3). Mostly clear and accurate communication and organisation (AO4)
LEVEL 1	1 – 4	**Limited response to question** Restricted / narrow knowledge and understanding of key issues (AO1). Simple, perhaps mostly unexplained points – or very narrow range – with limited interpretation or analysis and exemplification AO2). Lacking in understanding of different types of knowledge with little or no evidence of ability to work towards a conclusion (AO3). Variable levels of communication and organisation (AO4).
LEVEL 0	0	**No valid response or relevance to the question.**

SECTION A

01 Using the data and other information in Source A (Figures 1–7) only, examine the importance of continuing to develop genetically modified crops in the light of continuing public and international concern.

(11 marks)

- There are seven separate figures in Source A, each providing data/information which might be used to answer the question. Level 1 answers may be very brief/narrow and/or have a tendency to re-write the data/information descriptively instead of using the data/information more analytically.

  Answers that use Figure 1 only are limited to Level 1.

- Level 2 answers are likely to cover at least half of the figures in Source A, perhaps with a combination of some descriptive writing and some analytical comment in the context of considering GM crop development and attitudes towards this.
- Level 3 answers will use data/information from most of the figures in Source A with clear and relevant interpretation/analysis leading to a logically argued conclusion about GM crop development and public attitudes towards this.

Indicative content (development of GM crops)

- Nearly 20 years since first GM food (tomato) was developed commercially. Rapid development since late 1990s (Figures 1, 2). Main crops are now soybeans, maize and cotton (Figures 1, 2, 3). Millions of small-scale GM cotton producers in India and China (Figure 1). Most developments involve herbicide tolerance and/or insect resistance (Figures 1, 2, 3). Future commercial developments likely to include GM rice, eggplant, potatoes and wheat (Figure 1).
- Increases in GM crops may be one of the main strategies of the rapidly growing world population. This is predicted to rise by over 30% to 9.1 billion by 2050 (Figure 4). "At a time of rising commodity and food prices and food scarcity can we really afford GM prejudice?" (Figure 6). GM food can play "a vital role in feeding the world" (Figure 6).
- US prominent in development of biofuels (Figure 1) which may help to tackle CO_2 emissions from transport. Claim that GM crops help to reduce CO_2 thus reducing harmful emissions (Figure 1).

Indicative content (public/international attitudes)

- Countries vary in their attitudes to GM crops. Most accepted in US. Argentina, Brazil and Canada are significant producers but significant number of small-scale GM cotton producers in India and China (Figure 1).
- Attitudes to GM food in UK is divided but tends towards being opposed (Figure 5). Strong opposition from some groups and certain newspapers with reference to "Frankenstein foods" (Figure 5, Figure 7). Permission to grow GM crops in Britain has to be sought on a case-by-case basis (Figure 5).
- Peter Kendall, president of NFU, says that there is a need for "real scientific debate and not the media scaremongering that has been seen" (Figure 6).

- Terry Leahy, in 2009 Tesco's CEO, argues that attitudes to GM crops may be changing (Figure 6).
- Division in approval/opposition to GM crops said by some to be based on 'emotion v science' battle (Figures 5, 6). Debate sometimes characterised by "scaremongering and mud slinging" (Figure 6).

Candidates should be able to achieve marks in the highest level by using a selection of relevant points, not necessarily the complete range. In Question 1, only information contained in Source A should be credited. Any other valid point from source A not included in the indicative content should be credited.

02 The writer of Source B claims that 'genetic engineering is going to become a mainstream part of our lives sooner or later'. Using information from Sources B and C, and your own knowledge, explain why you would prefer it to happen sooner or to happen later.

(12 marks)

- Candidates who write in a very brief, or mainly descriptive (and/or general) fashion about genetic engineering are likely to be placed in Level 1.
- Those who demonstrate some limited analytical and critical awareness of some of the arguments to support the case of genetic engineering coming sooner or later will reach Level 2. (Those who use only one of the two sources will be limited to Level 2.)
- Those who can examine the concept of 'sooner or later' and who use sound arguments leading to a conclusion will reach Level 3.

Indicative content (Sources B & C) that might be used in the case for sooner

- Tackling diseases in people/plants/animals by studying links between genetics and hereditary. (B)
- Selection of animals and plants based on most desirable characteristics. (B)
- Increase of genetic diversity. (B)
- Genetic engineering is strictly controlled by legislation. (B)
- Potential suggested by examples in Source B/from own knowledge. (B/OK)
- Possibilities of genetic production of human organs for medical purposes. (B)
- Creating a GM mosquito that cannot transmit malaria could help to tackle a major world disease that remains a major problem especially in areas like sub-Saharan Africa. (C)
- Opportunity to increase world food production to meet population growth. (C)

Indicative content (Sources B & C) that might be used in the case for later

- Genetically modified genes may interfere with the complexities of nature. (B)
- Not enough is yet known about the consequences of GM. (B)
- GM raises complex moral issues. (B)
- Concerns surrounding the cloning of Dolly the sheep/examples from own knowledge. (B/OK)
- Possibilities of genetic production of human organs for medical purposes when more research in needed. (OK)
- Need to control activities of multi-national companies that produce GM food. (OK)
- Talk about creating a GM mosquito is premature. The technique must be proved safe and that it is sufficiently superior to drive out natural populations of mosquitoes. (C)

Candidates should be able to achieve marks in the highest level by using a selection of relevant points from Sources B and C and their own knowledge, not necessarily the complete range. Any other valid point not included in indicative content should be credited.

03 Compare and contrast the views on animal cloning and genetic modification expressed by Johnjoe McFadden and Graham Harvey in Source D.

(11 marks)

- Candidates who write in a very brief, or mainly descriptive and/or general fashion with minimal comparisons/contrasts are likely to be placed in Level 1.
- Those who demonstrate some analytical ability with some evidence of being able to compare and contrast the views of McFadden and Harvey will reach Level 2.
- Those who approach the source in a clearly analytical way, showing some critical awareness with a clear focus on comparing and contrasting the two views, leading to a conclusion, will reach Level 3.

Views of Johnjoe McFadden (in favour of cloning and GM)

- Cloning allows a measure of 'genetic tweaking' which, in the case of cows, can increase milk yields.
- Anti-cloning lobbyists may claim that cloning is unnatural but most people readily consume processed foods with 'unnatural' contents while more natural contents such as salt in our diet can be harmful.
- There is a lack of scientific arguments for GM food's harmful effects. (Might be argued that McFadden's arguments carry more weight because he is a scientist.)
- Nature does not have a plan, as anti GM supporters sometimes argue and "humans have been tampering with nature for some time".
- Potentially there might be more concerns about GM crops than GM animals.
- What most people consume is "a bag of chemicals" to which the addition of milk from a GM cow will make no difference.

Views of Graham Harvey (opposed to cloning & GM)

- Admits that the health implications of drinking the milk of cloned cows "are likely to be negligible".
- Implications of developments like GM cows and the way we run our food system are more important concerns.
- Broadens the argument to challenge the view that GM could provide a greater degree of food security when markets might be volatile or the impact of climate change offers a challenge.
- Argues that such threats are better countered by developing systems that offer greater genetic diversity, not the narrowing of this base that seems to be becoming more common with its greater reliance on pesticides and fertilisers.
- Dairy farmers also eschewing diversity concentrating on a few breeds such as Holsteins that offer higher milk yields.
- Points to potential disagreement between Defra officials and some agricultural scientists over cloning and different farming systems.

Candidates should be able to achieve marks in the highest level by using a selection of relevant points from Source D, not necessarily the complete range. Any other relevant points from Source D not included in the indicative content should be credited.

04 Using information from Sources E and F consider the implications of recent advances in genetic testing and techniques to decipher and interpret an individual's DNA.

(11 marks)

- Candidates who write in a very brief, or mainly descriptive, and/or general fashion about recent advances in genetic testing and interpreting an individual's DNA are likely to be placed in Level 1.
- Those who demonstrate more analytical ability and critical awareness relating to the views expressed in Sources E and F on genetic testing and the interpretation of an individual's DNA, and some of their implications will reach Level 2. (Those who use only one of the two sources will be limited to Level 2.)
- Those who approach the source material in an analytical way and show critical awareness in examining the implications of recent advances in genetic testing and techniques to interpret an individual's DNA, leading to a conclusion, will reach Level 3.

Source E: Indicative Content

- DNA contains a full "recipe" based on a 4 letter code for human beings which is unique to each individual. The Human Genome Project sequenced human DNA for the first time and is a significant scientific advance.
- Initially the process was prohibitively expensive but recent developments have reduced the cost to £31 000 and this is likely to fall further. Sequencing an individual's DNA will then become a viable commercial proposition.
- The reference by President Clinton to "learning the language that God created" may lead to conflict between scientists, theologians, atheists and believers in different faiths.
- Even if costs of DNA sequencing come down, use of the process will add additional costs to the NHS budget.
- But "personalised medicine" can help to match treatment to an individual's DNA make-up.
- Knowledge of an individuals DNA make-up will bring into play questions of privacy, commercial health insurance, employment etc.

Source F: Indicative Content

- Using a genetic test to predict if people have 'centenarian genes' that suggests they will live to be 100 raises moral questions about the effects of individuals being told their destiny.
- Uncertainty about how insurance firms might seek to use the information.
- Understanding how genes lengthen life might lead to the development of new drugs.
- The fact that researchers are not seeking to patent the information is an invitation to tech companies to produce "easy-to-use commercial kits".
- Research methods currently only 77% accurate. What happens if predictions turn out to be incorrect?
- Even if an individual has the right combination of genes to live to 100, most will need to consider diet, standard of living and healthcare.

Candidates should be able to achieve marks in the highest level by using a selection of relevant points from Sources E and F, not necessarily the complete range. Any other valid point from Sources E and F not included in the indicative content should be credited.

GENERAL MARK SCHEME FOR SECTION B

Each essay should be awarded a single mark out of 25. In awarding the mark examiners should bear in mind the overall assessment objectives for General Studies (see INTRODUCTION) which the essay questions are intended to test in the following proportions:

AO1 – 8 marks: AO2 – 7 marks: AO3 – 5 marks: AO4 – 5 marks.

Level of response	Mark range	Criteria and descriptors: knowledge, understanding, argument, evaluation, communication
LEVEL 4	20 – 25 (6)	**Good to very good treatment of the question:** Wide ranging and secure knowledge of the topic (AO1); good range of convincing and valid arguments and supporting illustrations, effective overall grasp and logically argued conclusion (AO2); good understanding and appreciation of material, nature of knowledge involved and related issues (AO3); coherent structure and accuracy of expression (AO4).
LEVEL 3	13 – 19 (7)	**Fair to good response to the demands of the question:** Reasonable knowledge of topic (AO1); a range of arguments with some validity, appropriate illustrations with reasonable conclusions (AO2); some understanding and appreciation of material, nature of knowledge involved and related issues (AO3); mostly coherent structure and accuracy of expression (AO4).
LEVEL 2	6 – 12 (7)	**Limited to modest response to the demands of the question:** Limited / modest knowledge of topic (AO1); restricted range of arguments and illustrations but some awareness and attempt at conclusion (AO2); little understanding and appreciation of material, nature of knowledge involved and related issues (AO3); weak structure and variable quality / accuracy of expression (AO4).
LEVEL 1	1 – 5 (5)	**Inadequate attempt to deal with the question:** Very limited knowledge of topic (AO1); little or no justification or illustration, no overall grasp or coherence (AO2); inadequate understanding and appreciation of material, nature of knowledge involved and related issues (AO3); little or no structure / inaccuracy of expression (AO4).
LEVEL 0	0	**No valid response or relevance to the question.**

Section B questions are set in two parts.

Candidates need to answer both parts of the question well to gain access to a Level 4 mark.

An unbalanced response with one part answered very well and the other answered significantly less well could only gain access to a maximum Level 3 mark.

SECTION B

05 'After the summer race riots of 2001 in northern England, the Home Office referred to deep rooted segregation within communities where different ethnic groups lead parallel lives'.

Discuss the extent to which race relations remain a challenge for some communities in Britain.

Explain why, in some parts of the country, it has proved difficult to bring about community cohesion among people of different cultural backgrounds.

Indicative content: Discuss the extent…..

Why race relations might/might not remain a challenge

- Race relations legislation has made some significant differences to relations between different ethnic groups.
- Since the MacPherson Report, following the murder of the black teenager Stephen Lawrence in the 1990s, declared the Metropolitan Police to be "institutionally racist" the police, and many other public bodies, have made strenuous effort to tackle racist behaviour in their organisations.
- Education, not least in areas like Citizenship Studies, has helped to tackle ignorance and prejudice.
- Local councils, no least in areas affected by the 2001 riots, and in Leicester (which has a highly diverse population) have taken initiatives to promote harmonious race relations.
- The media has made people more aware of the importance of good race relations but press coverage in particular has been uneven and sometimes distorted.
- What is less apparent, because of its very nature, is the existence of more covert racial practices.
- The Equality and Human Rights Commission issued its first triennial review *'How fair is Britain?'* in 2010. The report indicated that progress had been made by some groups in some areas but concluded that "the outcomes for many people are not shifting as fast as they should".
- 'Recent high profile racial conflict in professional football.'

Ultimately, in answering this question, much will depend on the experiences, perspectives and values of the person making the judgment.

Difficulties bringing about community cohesion

- Like 'multiculturalism', or 'the British way of life', 'community cohesion' is a term widely used in political circles but not always clearly defined or explained and can lead to confusion rather than clarity.
- Some might argue that community cohesion is an undesirable form of social engineering denying/restricting the choice of people from different ethnic/cultural groups.
- Community cohesion is not just a matter of bringing together people from different cultures. Other factors such as income, class, status and education might legitimately come into play, each adding a separate dimension.
- Politically, the BNP has targeted certain towns (e.g. Burnley, Stoke and Barking), focusing its resources on such areas. Two BNP MEPs have been elected to the European Parliament. The party has had some success in local government elections but did not perform well in the 2010 election.
- There is great pressure on mainstream politicians to take a 'firm stance' on any issues connected with race, immigration and asylum seekers.
- The English Defence League operates as a pressure group in some areas and has been involved in small-scale but violent clashes with self-styled 'anti-fascist' groups.
- Anti-discrimination legislation is an important part of the legal framework but nobody can be sure how effectively such laws are enforced.
- Despite the efforts of educators, attitudes are slow to change, especially if they are based on fear, ignorance or prejudice.
- A key issue in recent years has been the tendency of some to associate particular religious, cultural and ethnic groups with fundamentalists and terrorism.
- It is very difficult to make secure judgements because concepts like community cohesion, especially if associated with issues of ethnic diversity and race relations, tend to lead to subjective and emotive debate and reporting.

Candidates should be able to reach marks in the highest level with a selection of relevant points, not necessarily the complete range. Any other valid points not included in the indicative content should be credited.

06 'Technology has shown us the way and we must seize the initiative to expand the production and use of road vehicles that do not rely on petrol engines.'

Examine the alternatives to road vehicles which use only petrol.

Discuss the factors that might make large-scale use and development of such alternatives more, or less, likely in the near future.

Indicative content: Examine the alternatives to petrol…..

(a) Diesel

In July 2010 more diesel than petrol cars were sold in UK. Turbo-injection technology has helped diesel cars become faster, and better design has prevented diesel cars from shuddering if caught in stationary traffic. Diesel cars are now more fuel-efficient over longer distances than petrol driven alternatives. Much may depend on price differentials between petrol and diesel at the pumps. All diesels now contain some biofuels but diesels produces more PM10s (particular matter less than 10 microns) which have adverse effects on asthmatics.

(b) Sustainable fuels

Vehicles account for 25% of all CO_2 emissions. Of sustainable alternatives, **solar power** is very much at the developmental stage. **Alcohol** – e**thanol, methanol** (uncommon) **and butanol** are sourced from fermented plant matter, notably sugar beet; **Liquid Petroleum Gas (LPG),** commonly used to fuel camping stoves is a naturally derived heavy gas, derived from petroleum during processing and stored as a liquid; **Compressed Natural Gas (CNG)** which is similar to LPG but stored in a gas, rather than a liquid, form; **Biofuel** or **Biodiesel,** pioneered by Saab, made from oil extracts from vegetables and plants, or from recycled household vegetable oil and costs about the same as fossil diesel.

(c) Electric

Among alternative fuel cars, the plug-in electric car needs no fuel at all and is emission free. However, the emissions from conventional power plants that generate the electricity need to be taken into account even though electricity generated from the dirtiest coal would arguably still be cleaner than the cleanest petrol models. Nissan has already begun the production of electric cars at its Sunderland plant and plans to invest £200 million between 2009–2014. Mini has an electric version of the Mini E built at Oxford and Lotus has helped to develop the new Tesla electric sportscar in the US.

(d) Fuel cells

Fuel cells might use petrol, methanol, hydrogen or natural gases to produce electricity to run cars.

(e) Hydrogen

Converts chemical energy of hydrogen to mechanical energy either by combustion or electrochemical conversion in a fuel cell. Not really viable yet although Honda claims to have produced a commercially viable model. Produces no pollution as burning hydrogen results in water.

(f) Hybrid

Several hybrids are available and have a small petrol engine, an electric motor and a very large battery pack. During stop-start driving the battery is charged by the engine and regenerative braking. At higher speeds, the battery assists the engine. Toyota is seeking to develop a petrol/electric version of the Auris hatchback at its Derbyshire factory. Honda's FCX Clarity, which uses this very advanced technology, seems set to go into production.

Indicative content: Discuss the factors…..

More likely

- Concern about emissions and their effect on the environment.
- Growing support for environmental groups.
- Increased availability of alternative fuels.
- Potential cost advantages and easier maintenance.
- Concessions in some cases (lower road tax, company car tax, exemption from London Congestion Charge etc.)
- Electric is the most likely non-petrol/non-diesel development for short-haul city runs. Hybrids might be more suitable as family cars. Electric cars are still said to lack range, practicality and power.
- Political pressures leading to legislation to influence demand for non-petrol-powered cars.

Less likely

- Consumer inertia.
- LPG and CNG conversion costs.
- Use of biofuels can force up food costs (as found in Mexico and Brazil). Tropical forests have been cleared to produce palm oil.
- Inconvenience of electric charging, lack of charging stations and frequency of re-charging. Electric cars can develop only slowly without a more developed infrastructure.
- Limited providers of LPG and CNG.
- Alternative fuels may be more engine-corrosive than petrol.
- Manufacturers will need to make substantial capital investment. Less likely at a time of economic uncertainty or if they consider that there is insufficient demand for large scale and commercially viable production runs.

Candidates should be able to achieve marks in the highest band with a selection of relevant points, not necessarily the complete range. Any other valid points not included in the indicative content should be credited.

07 The effects of smoking on an individual's health are so well known that it is time for drastic action to be taken. Taxes on cigarettes should be raised significantly and doctors should refuse to treat those with smoking-related illnesses.'

Examine the likely effects of cigarette smoking on a smoker's health and quality of life.

Discuss the arguments for and against taking more drastic action to deter individuals from cigarette smoking.

Indicative content: Examine the likely effects of cigarette smoking…..

- Major health problems, most noticeably but not exclusively, the links between smoking and cancer and the effect on the heart as veins and arteries narrow and become blocked and coated with fatty deposits. A 20-a-day smoker breathes in up to a full cup (210 g) of tar in a year.
- In terms of appearance, smoking reduces the amount of oxygen to the skin so that it ages more quickly, leads to wrinkles and looks grey and dull. The toxins can also cause cellulite. Teeth may become discoloured, tobacco lingers on the breath and clothes carry the smell of smoke.
- Smoking can affect reproduction and fertility, reducing the sperm count and contributing to impotence.
- Smoking is dangerous in pregnancy. It (the foetal tobacco syndrome) may make women less fertile and increases the risk of having a miscarriage, a low birth weight baby and Sudden Infant Death Syndrome. Nicotine can be carried to a baby in breast milk.
- Despite restrictions on smoking in public places, smokers spread the health risk through the effects of passive smoking and a non-smoker who lives with a smoker will be exposed to 1% of their tobacco.
- Smoking is expensive. A 20-a-day smoker is likely to spend over £2000 a year on cigarettes. That raises the question of opportunity costs. Smokers also pay more for health insurance. There may be an increased risk of fire in the home.

Indicative content: Discuss the arguments for and against…..

In 2005, the National Institute for Health and Clinical Excellence (NICE) suggested that individuals could be refused help if 'self-inflicted causes' of a condition would make treatment ineffective. At the same time, a High Court judge ruled that tobacco smokers are 'negligent' and must take responsibility for damaging their own health.

A survey in *Doctor* magazine published in 2008 caused controversy after it reported the findings of a survey about whether heavy smokers, drinkers, the obese and even the elderly should be barred from receiving some NHS operations. Among the survey of 870 family and hospital doctors, almost 60% said the NHS could not provide full healthcare to everyone and that some individuals should pay for services. A survey of IVF clinicians found similar results.

About 10% of hospitals and some individual consultants already deny some surgery to obese patients and smokers, with restrictions most common in hospitals battling debt. Dorset GP Paul Mason said: "The issue is: how much responsibility do people take for their health?"

However, by 2008, Andrew Dillon, CEO of NICE, said that a personal lifestyle choice must not be used as a reason to deny someone treatment on the NHS. Also in 2008, the proposed NHS constitution said that patients have the right to drugs and treatments that have been recommended by Nice and if a patient's doctor believes they are appropriate.

For

- Smokers are likely to cost the NHS over £200 million a year in hospital care.
- Higher risk of complications on the operating table for unfit patients. Smoking increases cardiac and pulmonary complications, impairs tissue healing, and is associated with more infections.
- Shock advertising (e.g. on cigarette packets and in adverts) has failed to make sufficient impact on the habits of smokers.
- Individuals need to take more personal responsibility for their health.

Against

- Nicotine makes smoking an addiction. Smokers need help rather than punishment.
- Smoking is not illegal. It is a matter of individual choice.
- People pay their taxes and ought to be able to expect treatment in return if they are ill.
- The job of doctors is to treat patients and their illness rather than to pass judgment on them. Patients' Association very critical of decisions based on an individual's lifestyle.
- Decisions about patient welfare should be taken on medical not financial grounds.
- Thin end of the wedge? Should the same principles apply to sexual health? Should those guilty of serious crimes still receive treatment?

Candidates should be able to achieve marks in the highest level with a selection of relevant points, not necessarily the complete range. Any other valid points not included in the indicative content should be credited.

08 'Trade, not aid, is the key to long-term sustainable development in Less Economically Developed Countries (LEDCs).'

Examine the arguments in favour of expanding trade with LEDCs.

Using specific examples, discuss the circumstances in which direct aid to LEDCs might be essential.

Indicative content: Examine the arguments…..

- Economic crisis is worsening. Over 50% of sub-Saharan people are estimated to live on $1 a day. The benefits of globalisation have passed some parts of the world by. Improved trade, rather than handouts, could help to promote a new economic relationship between rich and poor countries.
- NGOs estimate that, unless the trading relationship between rich and poor countries improves, all benefits of debt relief and official aid may be worth little. Many MEDC governments acknowledge that entrepreneurship may be a panacea perhaps in the form of loans to small businesses.
- In the 1960s, Africa and India shared broadly the same economic figures and many thought Africa would achieve faster and higher economic growth. In fact India, like China, has forged ahead, economically, and the characteristic of many African countries is hunger, disease, conflict, corruption, poverty and lack of education. Africa accounts for about 2% of world trade and lacks negotiating strength on the world stage.
- The US and EU, as the two largest trading blocks, encourage LEDCs to move more towards free trade yet fail to do this themselves.
- As Bob Geldof has argued, OECD countries need to grant market access to all African countries with reduced/simplified tariff barriers. The world financial crisis has tended to produce more protectionism. This set back Gordon Brown's Business Call to Action which asked corporations to help to achieve the UN Millennium Development Goals by 2015.
- OECD trade subsidies should be reduced to help African producers. Rich countries can flood LEDCs with artificially cheap products.
- Democratic African governments need to be allowed greater freedom but they must also become more accountable to counter arguments of corruption. Many African governments are said to be inefficient, bureaucratic and corrupt.
- Most of Africa's trade problems are supply-based. They have too little to sell. Businesses (and agriculture in particular) in LEDCs need more chance to develop and to offer their products and services to markets which they might not otherwise reach.
- More emphasis needs to be placed on Fair Trade policies both by governments and consumers.
- The UK needs to expand links in resource-rich parts of the world such as Africa where countries like China are increasing their trade links.

Indicative content: Using specific examples, discuss the circumstances…..

- Untargeted aid may be wasted, encouraging a dependency culture and often being heavily diluted by corrupt influences in the recipient countries.
- Aid may be wasted because it is initiated on a top-down basis. It might work better if it is more demand-led based on proposals from NGOs, private companies and local civic groups.
- Aid may be necessary to build up the infra-structure of a country especially after civil war or on a 'pump priming' basis.
- Aid in the form of debt relief might be needed by countries crippled by interest payments.
- Increasingly aid may be targeted to counter the threat of terrorism.
- Humanitarian aid will be vital in sudden emergencies, often of a climatic nature such as floods or earthquakes.

Candidates should be able to achieve marks in the highest level with a selection of relevant points, not necessarily the complete range. Any other valid points not included in the indicative content should be credited.

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