# GCE Advanced Subsidiary Level
# GENERAL STUDIES A

Unit 2  AS Science and Society  (GENA2)
Mark Scheme

2760
June 2014

Version 1.1: Final

Mark schemes are prepared by the Lead Assessment Writer 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 associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts: alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Assessment Writer.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

Further copies of this Mark Scheme are available from aqa.org.uk

# Unit 2 Section A

# GENA2 AS Science and Society

*This component is an objective test for which the following list indicates the correct answers used in marking the candidates' responses.*

| | | | | |
|-----|---|---|------|---|
| 1.1 | D | | 1.16 | A |
| 1.2 | D | | 1.17 | D |
| 1.3 | A | | 1.18 | D |
| 1.4 | A | | 1.19 | B |
| 1.5 | C | | 1.20 | C |
| 1.6 | C | | 1.21 | B |
| 1.7 | B | | 1.22 | C |
| 1.8 | D | | 1.23 | A |
| 1.9 | A | | 1.24 | A |
| 1.10 | D | | 1.25 | D |
| 1.11 | B | | 1.26 | C |
| 1.12 | D | | 1.27 | B |
| 1.13 | A | | 1.28 | B |
| 1.14 | D | | 1.29 | C |
| 1.15 | B | | 1.30 | B |

# Unit 2 Section B       (AS 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.

- Mark schemes for individual questions worth more than just a few marks are usually based on **levels** (see further guidance below) 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.

- **Answers given in the mark scheme are not necessarily definitive. Other valid points must be credited, even if they do not appear in the mark scheme.**

Approximate distribution of marks across the questions and assessment objectives
for **Unit 2, Section B** (**GENA2/2**)

| Question Numbers | | Q2 & Q3 | Q4 & Q5 | Q6 & Q7 | Total marks for Section B |
|---|---|---|---|---|---|
| **Assessment Objectives** | **AO1** | 12 | 12 | 12 | 12 |
| | **AO2** | 8 | 8 | 8 | 8 |
| | **AO3** | 5 | 5 | 5 | 5 |
| | **AO4** | 10 | 10 | 10 | 10 |
| **Total marks per question** | | 35 | 35 | 35 | 35 |

**Levels of Response marking**

1. It is essential the **whole response is read** and allocated the level it **best fits**.

2. Marking should be positive, rewarding achievement rather than penalising for failure or omissions. The award of marks must be directly related to the marking criteria.

3. Levels are tied to specific skills. Examiners should **refer to the stated assessment objectives** (see above) when there is any doubt as to the relevance of a student's response. When deciding upon a mark in a level examiners should bear in mind the relative weightings of AOs (see AO grid above). For example, in Sections B and C more weight should be given to AOs 1 and 2 than to AOs 3 and 4.

4. Use your professional judgement to select the level that **best** describes a student's work; assign each of the responses to the most appropriate level according to **its overall quality**, then allocate a single mark within the level. Levels of response mark schemes enable examiners to reward valid, high-ability responses which do not conform exactly to the requirements of a particular level. Length of response should be not be confused with quality: a short answer which shows a high level of conceptual ability, for example, must be recognised and credited at that level.

5. **Credit good specialist knowledge when it is applied appropriately to the question, but be aware that the subject is General Studies and responses should be addressed to the general reader. Relevant points that are well developed and substantiated should be well rewarded, as should be arguments that are supported with examples, and not just asserted.**

6. **Answers should be assessed at the level that is appropriate to the expected knowledge and skills of a post-16 General Studies student. Avoid applying greater demands to responses on topics that are more closely related to your own specialist knowledge.**

7. Levels of response mark schemes include either examples of possible students' responses or material which students typically might use. *Indicative content* is provided only as a guide for examiners, as students will produce a wide range of responses to each question. The *indicative content* is not intended to be exhaustive and any other valid points must be credited. Equally, candidates do not have to cover all points mentioned to reach the highest level.

**Assessment of Quality of Written Communication (QWC)**

Quality of written communication will be assessed in all units where longer responses are required by means of **Assessment Objective 4**. If you are hesitating between two levels, however, QWC may help you to decide.

**Marking methods**

In fairness to students, all examiners **must** use the same marking methods.  The following advice may seem obvious, but all examiners **must** follow it as closely as possible.

1.  If you have any doubt about which mark to award, consult your Team Leader.

2.  Refer constantly to the mark scheme throughout marking.

3.  **Always** credit **accurate, relevant and appropriate** answers which are not given in the mark scheme.

4.  Do **not** credit material irrelevant to the question / stated target, however impressive it might be.

5.  If you are considering whether or not to award a mark, ask yourself 'Is this student nearer those who have given a correct answer or those who have little idea?'

6.  Read the information on the following page about levels of response mark schemes.

7.  **Use the full range of marks**.  Don't hesitate to give full marks when the answer merits them (a maximum mark does not necessarily mean the 'perfect answer') or give no marks where there is nothing creditable.

8.  No half marks or bonus marks can be given under any circumstances.

9.  The key to good and fair marking is **consistency**.  Once approved, do **not** change your standard of marking.

**Marking using CMI+**

AS General Studies A Unit 2 will be marked electronically using a software application called CMI+ (Computer Marking from Image).  Instead of paper being posted to examiners, student responses are scanned and sent electronically.  The software is easy to use, but demands a different approach.

1.  Instead of marking paper-by-paper you will mark item-by-item.  An item is a part-question.  Each time you log on you will need to choose an item to mark.

2.  Essay response questions will be *double marked.*  Examiners' standard of marking is randomly monitored via double marking, which is a peer-to-peer comparison, with Senior Examiners adjudicating where differences are out of tolerance.

3.  **You must** annotate items in the body of the response to acknowledge a creditworthy point, using the CMI+ tools, such as underlining, highlighting, inserting comments and adding icons from a drop-down menu.  Your Team Leader will tell you which types of annotation to use.

4.  As you mark each response, enter the mark you are going to award in the box at the bottom of the screen.  If you realise you have made a mistake you can go back one paper to change the mark.

5.  For the longer essay response questions, thumbnails to the right of the screen allow you to scroll through the response quickly.  Read the whole response, then, **you must**, at the end of the response, use the **'add a comment'** tool to indicate the level and write a summative comment (examples provided).  Finally, enter the mark in the box at the bottom of the screen.

**NB**.  Schools/Colleges can request scripts back post results (via Access to Scripts); it is therefore **essential** that the annotation/comments are appropriate, relevant and relate to the mark scheme.

6.  If a question has not received a response, i.e. no answer whatsoever, please use either the 'Not attempted' icon on the toolbar or enter a '–' (dash) as the mark.  **Do not** give a '0 / zero'.

7.  Enter a mark of '**0** / zero' for an attempted answer which contains no creditable response (or use the 'Award zero marks' icon on the toolbar).

8.  Your assessments will be monitored throughout the marking period.  This ensures you are marking to the same standard, regardless of how many clips you have marked or what time of day you are marking.  This approach allows senior examiners to ensure your marking remains consistent.  Your Team Leader can bring you back to the right standard should you start to drift.

9.  If your marking of a particular item is out of line, your Team Leader will contact you as soon as possible to explain where differences are occurring and how this can be addressed.

**Levels mark scheme for Questions 02 to 07**

| Level of response | Mark range | Criteria and descriptors for Assessment Objectives 1-4 |
|---|---|---|
| LEVEL 3 | 13–17 (18) | **Good response to question**<br>Good to comprehensive knowledge, understanding and approach 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). Shows some understanding of different types of knowledge, with some appreciation of their limitations 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 | 7–12 | **Reasonable attempt to answer question**<br>Modest to quite good knowledge, understanding and approach 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 question (AO2). Limited understanding of different types of knowledge but some ability to work towards or achieve a reasoned conclusion (AO3). Mostly clear and accurate communication and organisation (AO4). |
| LEVEL 1 | 1–6 | **Limited response to the question**<br>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 B

| 0 | 2 | **Explain what causes infectious diseases, how they are spread between human beings and how they can be treated.** |

**[17 marks]**

### General guidance

Candidates should be expected to give clear and accurate explanations of infections.  In explaining treatments and controls, candidates should be expected to mention the use of drugs as well as the importance of hygiene.  To get the highest marks, candidates should cover all elements of the question.

*Level 1*

**1-3 marks** – a brief, weak answer, with little or no relevant information
**4-6 marks** – a limited answer, but with a few basic points

*Level 2*

**7-9 marks** – a modest answer, with some relevant points
**10-12 marks** – a quite good answer, with a range of ideas explained

*Level 3*

**13-15 marks** – a good answer, with some development of relevant information
**16-17 marks** – a very good answer, with accurate and detailed points which are clearly explained

Examiners are reminded that there are *up to* 5 marks available for communication for this answer.

*Candidates should be able to achieve marks in the highest level with a selection of relevant points, not necessarily the complete range.*

### Indicative content:

### Infection

Infectious diseases are caused by pathogenic micro-organisms, including viruses, bacteria and fungi.  These can all invade host tissues or cells where they can rapidly multiply and colonise.

**Disease**

Their proliferation and the production of toxins and other substances can cause changes in growth or otherwise harm the functioning of the host's body and cause the symptoms of a disease. Viruses always invade living cells, where they reproduce and are released when the cell is destroyed to invade other cells in turn, whereas others (bacteria, fungi) usually attach to the surface of host cells or invade the blood.

**Spread**

Each type of pathogen has a mechanism for ensuring that it is spread to the next host (ensuring its own survival). Often this is an important part of the symptoms they produce (e.g. sneezing). This transfer may be via direct contact between individuals – touching, sexual contact, mother-to-foetus transfer across the placenta, indirect contact (sneezing, coughing, biting, touching objects, food), or by vectors such as insects (e.g. mosquitoes and malaria).

**Treatment and control**

Within the body, the immune system will attempt to combat infections. A range of different white blood cells detect foreign viruses and cells. In response, they variously produce antibodies and antitoxins or engulf and destroy pathogens. Certain individuals may have reduced immune capacity due to age (the elderly and young) or illness, which will make them more vulnerable and less able to fight infection themselves.

- **Antibodies** are specific to a disease and, once produced, remain in the body in case of future infection by the same strain of a particular pathogen. Vaccination is an artificial means of producing the same immunity in an individual and a population and, where widely used, can stop or control the incidence and spread of a particular disease. Some immunity may be genetic and there are also infections to which humans have no or limited natural resistance (HIV, SARS, bird flu).

- **Analgesics** – painkillers – can control pain and often also reduce inflammation. However, they do not kill the microbe itself.

- **Antimicrobials** are a large group of chemicals used to treat infections. They are usually harmless to the host but kill or damage the pathogen. They include antibacterials, antifungals and antiparasitics and antivirals.

- **Antibiotics** were the 'miracle cure' of the 20th century. They are toxins that kill bacteria and fungi, though are often only effective against certain microbes. Over-prescribing and insufficient hygiene is reducing their effectiveness as the microbes themselves become resistant to their effects. Examples of resistant microbes include MRSA (methicillin resistant *Staphylococcus aureus*) and *Clostridium difficile* – both extensively found in hospitals.

- **Anti-virals** are used against specific viruses. However, they usually only impede rather than kill the target virus.

- **Hygiene** is vital to reduce numbers of microbes and slow their spread. It is important as a form of treatment (sterilising wounds and keeping dressings clean etc) and as prevention.

It has been recognised as important since the 19th century, though not always rigorously applied, and is a greater problem in developing nations where anti-sepsis is harder to achieve and water not always clean.

Combined with overprescribing of antibiotics, poor hygiene has led to an increase in the incidence of hospital infections in recent decades in the UK. The CleanYourHands campaign was aimed at doctors, nurses, ancillary staff and hospital visitors, and has significantly reduced infection rates. Although the campaign was proving to be successful in establishing good practice, funding has been withdrawn by the coalition government.

*Other valid points, not included here, should be credited.*

**0 3** **To what extent should the National Health Service and government encourage disease prevention and healthier lifestyles rather than relying on drugs and medical technology to improve the nation's health?**

[18 marks]

**General guidance**

Candidates should be expected to demonstrate some understanding of issues relating to prevention and lifestyle on the one hand, and drugs and technology on the other. Examiners should be looking for a balanced discussion, leading to a reasoned conclusion.

*Level 1*

**1-3 marks** – a brief, weak answer, with little or no relevant information
**4-6 marks** – a limited answer, but with a few basic points

*Level 2*

**7-9 marks** – a modest answer, with some relevant points
**10-12 marks** – a quite good answer, with a range of ideas explained

*Level 3*

**13-15 marks** – a good answer, with some development of relevant information
**16-18 marks** – a very good answer, with accurate and detailed points which are clearly explained

Examiners are reminded that there are *up to* 5 marks available for communication for this answer.

*Candidates should be able to achieve marks in the highest level with a selection of relevant points, not necessarily the complete range.*

**Indicative content:**

**Prevention and lifestyle**

Candidates may argue that 'prevention is better than cure', as it is often cheaper and can reduce the incidence of a disease or illness, with all its costs and consequences. A highly cost-effective way of promoting better health outcomes is to put greater emphasis on healthy lifestyles and disease prevention, rather than treating diseases after they have developed. Candidates may, however, point out that this is not a simple 'either/or' situation, and that there will always be a need for both prevention and cure.

Examples of **preventative** measures might include:

- immunisation programmes, which have virtually eliminated diseases such as polio, diphtheria, whooping cough, etc;
- fluoride in drinking water;

- reducing or eliminating the unnecessary use of antibiotics;
- attention to hygiene in the home and in hospitals;
- regulation of food products to reduce high levels of saturated fats, salt and sugars;
- measures to reduce alcohol consumption, through licensing, pricing and/or controls on advertising.

Examples of improving **lifestyle** choices include:

- encouraging an active lifestyle and more exercise;
- educational programmes to discourage potentially dangerous lifestyle choices such as unprotected sexual activity, the use of tobacco, alcohol and non-medicinal drugs;
- educating and encouraging people to follow a healthy balanced diet.

**Drugs**

Arguably, the biggest impact on public health in the 20th century (producing a significant rise in life expectancy) was brought about by the discovery of antibiotics and by access to free medication via the NHS.

The number and types of drugs are vast, but the categories include painkillers, antibiotics and antiseptics. Drugs can be used to treat the cardiovascular system, the nervous system, the reproductive system (e.g. contraceptives) and the immune system (e.g. vaccines).

Many drugs are cheap, readily available and highly effective (e.g. aspirin). Some drugs are effective, but very expensive (e.g. herceptin, a treatment for some forms of cancer). Issues of the cost in relation to patient benefit are likely to arise.

The pharmaceutical industry makes vast profits through its control of patented drugs, which are often very expensive and therefore out of the reach of many individuals in private healthcare systems, and may be too expensive also for national healthcare systems such as the NHS.

One of the problems with the pharmaceutical industry is that, ironically, medication is not developed for all illnesses but principally to treat common diseases in affluent countries (i.e. where the companies will make a significant return on their investment). The industry is also accused of trying to create drugs for conditions for which better lifestyle choices are likely to be more appropriate (e.g. diet pills).

**Technology**

Medical technology refers to the range of equipment that is used to diagnose, monitor or treat diseases and medical conditions. The range of such equipment is vast, but candidates may mention such examples as:

- diagnostic equipment such as X-ray, MRI and CAT scanning machines;
- cardiovascular equipment such as defibrillators, heart pacemakers and heart by-pass machines;

- life support technology such as ventilators, anaesthetic machines and dialysis machines;
- equipment to make life easier for people with disabilities, such as wheelchairs and prostheses.

The development of medical technology is more likely to be directly related to patients' needs than some drugs produced by the pharmaceutical industry are, but issues of cost and benefit will still arise, both for individuals and healthcare organisations such as the NHS.

*Other valid points, not included here, should be credited.*

| 0 | 4 | **Explain the impact on the environment of air transport and increasing airport capacity.**

**[17 marks]**

**General guidance**

Candidates should examine the impact of the use of aircraft on the environment, and the environmental consequences of the expansion of existing airports and the development of new ones. Better answers will demonstrate good knowledge and understanding of issues including, but wider than, global warming. Candidates should focus on scientific issues in this answer – issues relating to, for example, economic benefits should be considered in response to the next question.

*Level 1*

**1-3 marks** – a brief, weak answer, with little or no relevant information
**4-6 marks** – a limited answer, but with a few basic points

*Level 2*

**7-9 marks** – a modest answer, with some relevant points
**10-12 marks** – a quite good answer, with a range of ideas explained

*Level 3*

**13-15 marks** – a good answer, with some development of relevant information
**16-17 marks** – a very good answer, with accurate and detailed points which are clearly explained

Examiners are reminded that there are *up to* 5 marks available for communication for this answer.

*Candidates should be able to achieve marks in the highest level with a selection of relevant points, not necessarily the complete range.*

**Indicative content:**

**Air transport**

- Aircraft use fossil fuels; their use contributes to the depletion of a finite resource.
- The use of fossil fuels contributes to the enhanced greenhouse effect and global warming: emissions from aircraft which are environmentally damaging include carbon dioxide, water vapour and nitrous oxides.
- The use of alternative fuels is being developed, particularly biofuels – but these also have environmental consequences, on biodiversity and on food production.
- Emissions at altitude have 2.7 times the environmental impact of those on the ground.
- Air travel produces 19 times the greenhouse gas emissions of trains; and 190 times that of a ship.

- It is claimed that aviation could contribute 15 per cent of greenhouse gases each year if unchecked.
- Separately from the use of aircraft, the production and manufacture of aircraft and aircraft fuels also directly contributes to the greenhouse effect through carbon emissions.

**Airport capacity**:

- Airports, whether new or expansions of existing facilities, require large amounts of land, either greenfield sites or by extending over existing communities and/or industrial and commercial uses.
- Airports produce significant noise pollution over large areas of land – in the case of Heathrow, most nearby land is heavily populated, and therefore this noise pollution disrupts people's lives.
- Airports also create significant amounts of light pollution nearby.
- Airports attract, and need, large amounts of related infrastructure – roads, hotels, storage areas, warehouses, etc – all of which have their own environmental consequences.
- It is argued that, where capacity is increased as a way of easing congestion, it may simply have the effect of increasing air travel until it is at maximum capacity again.
- In addition to the impact on local human populations, airports have a detrimental impact on wildlife populations – through destruction of habitat and air and noise pollution; they may have especially damaging effects on bird populations, especially if in breeding areas or migration routes (e.g. the Thames estuary).

*Other valid points, not included here, should be credited.*

| 0 | 5 | **Discuss the political and economic issues that need to be considered in any decision to expand existing airports or to build new ones.** |

**[18 marks]**

**General guidance**

Candidates should be able to identify and discuss both political and economic issues, and to consider both positive and negative arguments. Better answers will be well balanced, though they may well choose to support one or other position in their conclusion.

*Level 1*

**1-3 marks** – a brief, weak answer, with little or no relevant information
**4-6 marks** – a limited answer, but with a few basic points

*Level 2*

**7-9 marks** – a modest answer, with some relevant points
**10-12 marks** – a quite good answer, with a range of ideas explained

*Level 3*

**13-15 marks** – a good answer, with some development of relevant information
**16-18 marks** – a very good answer, with accurate and detailed points which are clearly explained

Examiners are reminded that there *up to* 5 marks available for communication for this answer.

*Candidates should be able to achieve marks in the highest level with a selection of relevant points, not necessarily the complete range.*

**Indicative content:**

**Political issues**

- Promotion by national/international businesses which will want the enhanced opportunities increased capacity could bring.
- Lobbying by airlines, which will want opportunities to expand their businesses.
- Politicians may be motivated by ideas of 'national prestige' in proposing to develop or maintain a major air traffic 'hub' in the UK.
- Links to the personal prestige and agendas of individual politicians, who would like to gain credit for a major new institution (B Johnson).
- Likely opposition from local residents, who may lose their homes or be affected by noise, light and air pollution from increased/new air traffic.
- Environmentalists are likely to oppose any new airport capacity, on the grounds of the

impact on the airport location and the wider impact of aircraft on the environment.

- Local MPs and local councillors may take an opposing stance in order to maintain support from residents for protecting their interests.

- Political calculations about benefits of a relatively quick option (Heathrow 3rd runway) or a longer term option (new airport in Thames estuary or elsewhere).

- Long-term benefits or problems may be of little interest to national politicians, who are likely to be focused primarily on the next election.

**Economic issues**

- As a major new infrastructure project, an extended or new airport would encourage economic growth.

- It would create new jobs in the construction phase, and permanent new jobs in servicing the airport and related facilities.

- It would provide new opportunities for construction, service and supply companies.

- It would enable UK businesses to further develop contacts in newly-expanding markets, such as Brazil, India and China.

- It would enhance the opportunities for the air freight business.

- However, the cost would be huge, and would be borne mostly (entirely?) by taxpayers.

- It would require additional infrastructure – new roads, warehouses, possibly housing and schools.

- It would disrupt/destroy some existing communities and businesses, with both a social and an economic cost.

- Noise and other pollution would be likely to increase, with negative effects on nearby communities, leading to lower property values.

- Investment in a new runway or new airport could be seen to be the sort of big infrastructure project which could help to kick-start growth in a time of economic recession.

- On the other hand, a new runway or new airport could be seen as a waste of money in a period of austerity, diverting resources from other, more urgent, priorities – e.g. social security, health, education, etc.

*Other valid points, not included here, should be credited.*

**0 6** **Examine how recent technological developments and the expansion of online commerce are changing the ways in which we buy and consume products and services**.

[17 marks]

**General guidance**

Candidates should demonstrate knowledge and understanding of recent technological developments and how they have impacted on retail and leisure activities. We should expect a range of appropriate examples and, perhaps, some comment on the implications for traditional commerce and for regulation.

*Level 1*

**1-3 marks** – a brief, weak answer, with little or no relevant information
**4-6 marks** – a limited answer, but with a few basic points

*Level 2*

**7-9 marks** – a modest answer, with some relevant points
**10-12 marks** – a quite good answer, with a range of ideas explained

*Level 3*

**13-15 marks** – a good answer, with some development of relevant information
**16-17 marks** – a very good answer, with accurate and detailed points which are clearly explained

Examiners are reminded that there are *up to* 5 marks available for communication for this answer.

*Candidates should be able to achieve marks in the highest level with a selection of relevant points, not necessarily the complete range.*

**Indicative content:**

Candidates should be aware of recent **technological developments** which have had an impact on online commerce. These include:

- the widespread use of smartphones and tablets, enabling instant access to commercial sites, news and social media;

- faster internet speeds now make it possible to access information that was previously too slow to be practical;

- 'cloud' computing – the remote storage of documents, photos and other information on remote servers rather than on individual devices;

- online office suites, enabling documents to be created and edited from virtually any computer with access to the internet – e.g. Google docs;

- online payment systems (e.g. PayPal).

The main forms of **online commerce** should be identified and explained:

- the rapid growth of dedicated online shopping companies, e.g. Amazon and eBay, which not only sell products themselves on a huge scale (Amazon) but act as a vast market place for small businesses to buy and sell;
- in response, most large supermarkets and large retailers now have significant online operations; those retailers who have gone out of business recently have done so, at least partly, as a result of online competition;
- some physical shops now incorporate facilities for internet shopping;
- online banking has made money management much easier for account holders;
- the coalition government's reform of the social security system (Universal Credit) includes the assumption that the majority of clients (80%+) will manage their own benefits online.

There has also been a rapid transformation of **leisure** practices as a result of technological advances:

- downloading of books, music and films to phones, tablets and other equipment;
- streaming of music and films to phones, tablets and other equipment;
- photo software, enabling manipulation of images for printing on home computers or digital display;
- social media (Twitter, Facebook, etc) are not only a means of communicating, but of sharing information and ideas;
- internet searching has become very rapid and easy – apps to find local restaurants as you walk down a street, Google Street View to inspect a hotel before you visit it, etc;
- online game playing, including interactive gaming;
- online gambling – e.g. poker and bingo sites.

In **education**:

- some texts are available as e-books which can be accessed from anywhere via secure servers;
- students increasingly have access to so-called anywhere/anytime learning;
- revision materials and past papers are available online from exam boards.

*Other valid points, not included here, should be credited.*

| 0 | 7 | **Discuss the social and economic consequences of the expansion of online commerce**.

[18 marks]

**General guidance**

Candidates should consider a range of positive and negative social and economic outcomes from the development of online commerce, in a balanced manner. Stronger candidates may also consider the difficulties in controlling online commerce. Candidates who come to a reasoned conclusion should be appropriately rewarded.

*Level 1*

**1-3 marks** – a brief, weak answer, with little or no relevant information
**4-6 marks** – a limited answer, but with a few basic points

*Level 2*

**7-9 marks** – a modest answer, with some relevant points
**10-12 marks** – a quite good answer, with a range of ideas explained

*Level 3*

**13-15 marks** – a good answer, with some development of relevant information
**16-18 marks** – a very good answer, with accurate and detailed points which are clearly explained

Examiners are reminded that there are *up to* 5 marks available for communication for this answer.

*Candidates should be able to achieve marks in the highest level with a selection of relevant points, not necessarily the complete range.*

**Indicative content:**

There are a number of broadly **positive** consequences that candidates may identify, including:

- ease of access for consumers to a wide range of products;

- increase in technology-related employment;

- new forms of business are encouraged (e.g. eBay start-ups);

- increase in jobs in distribution companies;

- businesses are not restricted in location – can be in Lake District or the Scottish Highlands, and still be able to operate online (though this may be dependent on broadband speeds);

- environmental benefits from reduced private transport use (fewer trips into towns and shopping centres).

On the other hand, candidates may identify potential **negative** consequences, including:

- some major online businesses (e.g. Amazon) exploit tax loopholes so that they pay minimal tax on extensive profits – this may be perceived as giving them an unfair advantage over businesses in the high street;

- loss of taxation revenue from online businesses increases pressures on public finances – as a result, government may have to cut public services more and/or increase the tax burden on ordinary taxpayers;

- decline of long-running 'physical' businesses as a result of competition from online businesses;

- loss of employment in retail and service enterprises;

- decline of 'traditional' high street, possible urban blight and decay;

- increased traffic from lorries which are distributing goods bought online;

- changing nature of town centres, with loss of retail provision, increase in numbers of service and charity shops;

- many disadvantaged groups, especially the elderly and those on low incomes, may have difficulty accessing online shopping and bill-paying, benefit management, etc., and thus be further disadvantaged;

- individuals may have a more sedentary lifestyle if they no longer have to travel to work and/or to shop;

- less social interaction, if individuals increasingly work, shop and play digitally.

Candidates may also consider some wider **technological** and **legal concerns** arising from the increased utilisation of the new technologies:

- data-mining via 'loyalty cards', by Google, etc;

- pirating and peer-2-peer sharing of resources;

- the security implications of sensitive or personal data held 'in the cloud';

- the sensitivity of businesses to temporary loss of access to the internet (the move towards 'thin machines' means data processing may be being carried on at a server off-site);

- more resources (music, films, computer programs) are now rented, not sold; end-users rarely read and do not understand their rights;

- pressure from US companies (music, films, porn) to impose financial penalties or limit/remove internet access from individuals accused of copying resources; this is done extra-legally, by pressure on the ISPs, without due process of law in the individual's own country.

*Other valid points, not included here, should be credited.*