

GCSE 2005
January Series



Mark Scheme

Applied Information and Communication Technology (Double Award) *(Subject Code 3851)*

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 meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting 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 the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

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Task One: Produce a presentation, with speaker's notes, that could be delivered to an audience showing how developments in ICT have affected Law and Order (52 Marks)

The presentation should be focussed on the effects of ICT on the identified types of groups and/or individuals, rather than the technologies.

Candidate describes groups and/or individuals affected by ICT systems (9 marks)

A1 Identify 3 groups (1 mark for each, up to 3 marks)

Candidates are required simply to identify any three types of groups/individuals who will be affected by developments in ICT related to Law and Order. There is no need for any details of the groups; simply naming the group is sufficient to achieve the marks.

Candidates may identify either groups or individuals, but these must be specific types – for example 'adults' is too vague, but 'disabled adults' would be acceptable. It is likely that candidates will have identified groups related to the topic, so 'Police', 'Forensic Scientists', 'Criminals', 'Speeding Motorists' are likely to be common.

1 mark is awarded for each of three acceptable types of group/individual identified.

A2 Description of 3 groups (1 mark for each, up to 3 marks)

Candidates are required to describe the groups/individuals they have identified above – for example, what are the particular needs of the members of the group. This might include details of their involvement in law and order, relationships to other members of the groups, etc.

A3 Relate groups to ICT use (1 mark for each, up to 3 marks)

This is an extension of the description above which refers specifically to the ICT needs of the groups/individuals identified.

Candidate considers consequences of lack of access to ICT and benefits available through use of ICT
(10 marks)

B1 Consequences of lack of access to ICT (1 mark for each, up to 5 marks)

Candidates should identify the consequences to their identified groups or individuals of not having any access to ICT. It is important that responses relate to the lack of ICT, rather than disadvantages of having ICT. Answers are likely to relate to issues about tracing the perpetrators of crime, detection of crime, databases of information, and the difficulty in managing these without the use of ICT.

Candidates should demonstrate their awareness of the fact that large numbers of people do not have any access to ICT at all.

1 mark may be awarded for identification of a consequence with very brief detail, or up to 3 marks for a very detailed and reasoned discussion of one consequence. It is likely that the third mark will only be awarded for an exceptionally detailed and considered response. Candidates may be awarded 5 marks for brief details of five consequences.

B2 Benefits of use of ICT (1 mark for each, up to 5 marks)

Candidates should identify benefits of the use of ICT by the groups or individuals identified. Responses must relate to the use of ICT in connection with law and order.

1 mark may be awarded for identification of a benefit with very brief detail, or up to 3 marks for a very detailed and reasoned discussion of one benefit. It is likely that the third mark will only be awarded for an exceptionally detailed and considered response. Candidates may be awarded 5 marks for brief details of five benefits.

Candidate's work is effective and appropriate to needs of audience, and is produced using fully the software features available **(6 marks)**

C1 Identify audience (1 mark)

1 mark may be awarded if the candidate has explicitly identified an audience for the presentation. The audience may be identified either in the speaker's notes or on one of the slides. The audience should be specific, so 'adults' is not acceptable, but 'those attending a meeting of a professional association' would be acceptable. Many candidates will have produced a presentation for their peer group, which is acceptable.

C2 Format appropriate for audience (1 mark)

1 mark may be awarded if the content, format and appearance of the slides are considered appropriate for the identified audience. Examiners should consider backgrounds and fonts used, animations, and tone and language of text.

C3 Use of software features (1 mark for each, up to 4 marks)

Candidates should be awarded 1 mark for use of each software feature. These include

- text
- a background
- inserting clip-art/photograph/graph
- use of animation
- flowchart or similar diagram

but other features are acceptable.

Use of these features should be appropriate to the context. Marks are not awarded for aesthetics.

Candidate work includes evidence of use of ICT to search for and organise information **(6 marks)**

D1 Use of ICT to search for information (up to 3 marks)

Candidates should demonstrate that they have used ICT as a tool for researching information. This is likely to be done through a screen print of an Internet search engine or similar search feature on a CD-ROM or other software. Marks should be awarded as follows:

- 1 mark for evidence, such as a screen print, of the use of a search feature
- 1 mark for appropriate search criteria, which must have been entered into the correct field and must be related to the content of the presentation
- 1 mark for evidence of the use of some information generated from the search or one of its hyperlinks.

D2 Use of ICT to organise information (up to 3 marks)

Candidates should demonstrate that they have on three occasions organised information within their presentation or their speakers' notes using an ICT tool. This may be:

- a pie chart or graph
- an organisation chart
- a flow chart
- an ICT-generated diagram
- a table
- bullet points

but other types of organisation are acceptable.

The information organised must relate both to the identified groups or individuals and the context of law and order.

Candidate demonstrates depth of knowledge of effects of ICT developments on the chosen groups and/or individuals **(5 marks)**

E1 Depth of knowledge (up to 5 marks)

Candidate demonstrates that they have detailed knowledge of the **effects** of ICT developments related to law and order on their identified groups/individuals. This may either be by providing detailed information on two or three areas, or additional information on a larger number of aspects.

It is unlikely that any one piece of information will be awarded more than 2 marks.

Candidate makes informed suggestions how ICT developments will affect chosen groups and/or individuals, based on knowledge of effects of ICT developments **(7 marks)**

F1 Basic details of future effects on each of the 3 groups (1 mark per group, up to 3 marks)

Candidate considers current use of ICT by the identified groups in relation to law and order, and predicts what is likely to happen in the future. Suggestions should be realistic, and based on current situation as described in the presentation. Only basic descriptions are required at this level. 1 mark for comments on each group.

F2 Detailed/contextualised/justified details of future effects (up to 4 marks)

Candidate produces extended/more detailed descriptions on the future. Up to 2 marks per group available for more details, or well thought-out comments specifically contextualised to a particular identified group.

Candidate evaluates own work and details validated sources of information. Candidate recognises and explores ethical and moral implications of access to ICT **(9 marks)**

G1 Evaluation of work (3 marks)

3 marks for a detailed evaluation of the presentation. Comments made should not be trivial or simplistic. Comments must be evaluative rather than simply descriptive. Comments must relate to the purposes of the presentation and its relation to its specified audience.

Marks are likely to be awarded as follows:

- 1 mark for strengths
- 1 mark for weaknesses
- 1 mark for suggested improvements

However, any of these may be awarded up to 2 marks for a very detailed and well thought-out response, up to a maximum of 3.

G2 Sources of information (2 marks)

1 mark for each type of appropriate source of information used.

Sources are likely to be:

- web sites
- CD-ROMS
- books
- magazines/periodicals
- television documentaries/video
- interviews/visits/questionnaires

but others are acceptable.

G3 One source validated (1 mark)

1 mark if one the sources listed has been validated appropriately.

G4 Ethical and moral implications (3 marks)

Candidate discusses ethical and moral implications of the use of ICT related to law and order. Issues raised may include

- lack of privacy
- data protection-type issues
- 'human rights'-type issues – e.g. compulsory DNA testing, CCTV

but other ideas are acceptable.

Responses must relate to law and order.

Task Two: Produce a report on technologies relating to Businesses and Organisations (30 Marks)

The report should focus primarily on the technologies available which relate to, or are used by, businesses and organisations. Candidates should identify three technologies at the start of the report, and then base the rest of the report on those technologies. It is a requirement that the report relates specifically to businesses and organisations.

Candidate produces a basic description of three technologies available to access and exchange information and carry out transactions **(8 marks)**

H1 Identify 3 technologies (1 mark for each, up to 3 marks)

1 mark for each of three technologies listed which relate to working businesses and organisations. Technologies may include:

- Mobile phones
- Internet
- Video conferencing
- PDAs
- Security systems
- MIS systems
- EPOS
- ATM
- E-mail

but any other appropriate technology is acceptable.

The requirement for this mark is simply a list of 3 technologies – no detail is needed.

H2 Basic description of 3 technologies (1 mark for each, up to 3 marks)

Response must relate to the 3 technologies identified above. 1 mark for each of 3 descriptions describing what technology is/does.

H3 More details on 1 or more of the technologies (1 mark for each, up to 2 marks)

Responses must relate to up to the technologies listed above. 1 mark for each more detailed description which extends the description above with more contextualisation and detail.

More detailed description, including main purposes of technologies available, giving advantages and disadvantages, using ICT to search, select and organise information **(8 marks)**

I1 Purposes of 2 technologies (1 mark for each, up to 2 marks)

1 mark for each description of how up to 2 of the technologies listed above relate to, or are used by, businesses and organisations.

I2 Advantages of 2 technologies (1 mark for each, up to 2 marks)

Responses must relate to the technologies listed above. 1 mark for each specific identified advantage which identifies how the technology is an advantage to businesses and organisations.

I3 Disadvantages of 2 technologies (1 mark for each, up to 2 marks)

Responses must relate to the technologies listed above. 1 mark for each specific identified disadvantage which identifies how the technology creates a disadvantage to businesses and organisations.

I4 Use of ICT to search or select information (1 mark)

Candidates should demonstrate that they have used ICT as a tool for researching information. This is likely to be done through a screen print of an Internet search engine or similar search feature on a CD-ROM or other software. Marks should be awarded for a screen print which demonstrates that a search engine has been used with appropriate search criteria.

I5 Use of ICT to organise information (1 mark)

Candidates should demonstrate that they have organised information within their report using an ICT tool. This may be:

- a pie chart or graph
- an organisation chart
- a flow chart
- an ICT-generated diagram
- a table

but other types of organisation are acceptable.

The information organised must relate both to the identified groups or individuals and the context of personal communications.

Candidate identifies trends over time based on detailed descriptions of purposes, advantages and disadvantages **(6 marks)**

J1 Identify 3 trends (1 mark for each, up to 3 marks)

Candidate identifies simplistically three trends over time related to the use of their identified technologies by businesses and organisations. 1 mark for each trend identified, no significant detail needed.

J2 More detail of trends (1 mark for each, up to 3 marks)

Candidate provides more detailed or contextualised descriptions to the trends they have identified above. 1 mark for each trend.

Candidate produces well-structured description, including List of Sources of information, with each source evaluated and validated **(8 marks)**

K1 Well-structured report (up to 3 marks)

Candidate's report must be well-structured to accepted conventions. Marks may be awarded for:

- introduction/conclusion paragraphs which relate the content to the context
- appropriate use of paragraph/section headings
- appropriate use of bullets/numbering

K2 List of range of sources (up to 2 marks)

1 mark for each type of appropriate source of information used.

Sources are likely to be:

- web sites
- CD-ROMs
- books
- magazines/periodicals
- interviews/visits/questionnaires

but others are acceptable.

K3 Sources specifically related to content of report (1 mark)

1 mark if candidate has identified which specific piece of information was obtained from which source. Source and information must be related to businesses and organisations.

K4 Validation of one source (1 mark)

1 mark if one of the sources listed has been validated appropriately.

K5 Evaluation of at least one source (1 mark)

1 mark if candidate has commented on the usefulness or effectiveness of one of the sources, in terms of its contribution to the report content.

Task Three: Produce a newsletter or brochure on the purposes of ICT legislation (18 Marks)

Candidates are required to produce a document which could be given to employees of a large organisation. The document should 'look' like a newsletter or brochure, rather than a word processed essay. The bulk of the marks, however, are for content rather than appearance.

Candidate produces a description of the main purposes of legislation covering working with, and using, ICT (4 marks)

L1 Simple descriptions of main purposes of four pieces of legislation (1 mark for each, up to 4 marks)

1 mark for each description the purpose of **four** pieces of legislation related to the use of ICT. These might include

- Data Protection Act
- Computer Misuse Act
- Regulation of Investigatory Powers Act
- Copyright Designs and Patents Act
- Health and Safety Act

but other appropriate legislation is acceptable.

Descriptions may be very simplistic for this mark.

If candidate has included more than five pieces of legislation, the best (ie worthy of most marks) five should be marked.

Candidate produces a more detailed description, which includes an explanation of implications for users of implementing the legislation (7 marks)

M1 More detailed descriptions of main purposes of the legislation (1 mark each, up to 4 marks)

1 additional mark for each of the four pieces of legislation for the inclusion of more detail in the description.

M2 Implications for users explained (1 mark for each, up to 3 marks)

1 mark for each of **three** statements relating the legislations to an effect on a specified user, whether an end-user, manager or technician.

Candidate produces a detailed and well-structured description which includes details of the sources of information, and validates those as part of a detailed evaluation of the work **(7 marks)**

N1 Well-structured description (up to 2 marks)

1 mark to be awarded if the document 'looks like' a brochure or newsletter, rather than simply word processed text. It should be fit for the identified purpose for which it is intended.

1 mark for any of the following:

- use of appropriate side headings, or section headings
- appropriate use of bullets and/or numbering for ease of reading
- appropriate introduction and conclusion paragraphs

N2 Details of sources (1 mark)

1 mark for identification of at least two sources which have been used in the preparation of the document.

N3 One source validated (1 mark)

1 mark if one the sources listed has been validated appropriately.

N4 Detailed evaluation of work (3 marks)

3 marks for a detailed evaluation of the newsletter or brochure. Comments made should not be trivial or simplistic. Comments must be evaluative rather than simply descriptive.

Marks are likely to be awarded as follows:

- 1 mark for strengths
- 1 mark for weaknesses
- 1 marks for suggested improvements

However, any of these may be awarded up to 2 marks for a very detailed and well thought-out response, up to a maximum of 3.