



GCSE EXAMINERS' REPORTS

INFORMATION AND COMMUNICATION TECHNOLOGY

SUMMER 2009

Statistical Information

The Examiners' Report may refer in general terms to statistical outcomes. Statistical information on candidates' performances in all examination components (whether internally or externally assessed) is provided when results are issued. As well as the marks achieved by individual candidates, the following information can be obtained from these printouts:

For each component: the maximum mark, aggregation factor, mean mark and standard deviation of marks obtained by *all* candidates entered for the examination.

For the subject or option: the total entry and the lowest mark needed for the award of each grade.

Annual Statistical Report

Other information on a centre basis is provided when results are issued. The annual *Statistical Report* (issued in the second half of the Autumn Term) gives overall outcomes of all examinations administered by WJEC.

INFORMATION & COMMUNICATION TECHNOLOGY

General Certificate of Secondary Education 2009

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Statistical Information

As noted on the previous page, details of statistical outcomes for this year's examinations may be found in other documents provided for centres, but for convenience the lowest mark for each grade at *component* level is presented below.

Component Grade Points

Grade	Portfolio	Project	Paper 1 Foundation	Paper 1 Higher	Paper 2 Foundation	Paper 2 Higher
A*	59	56		72		91
A	52	50		64		82
B	45	44		56		73
C	39	38	48	48	49	65
D	33	32	41	35	43	50
E	27	26	34	28	38	42
F	21	21	27		33	
G	15	16	20		28	
Max. Mark	63	63	60	80	60	100

PAPER 1

Foundation Tier

General comment

Most candidates attempted to answer all the questions set. Most candidates were entered into the correct level and the paper seemed very accessible to most candidates. Skills questions were quite well answered but questions which required recall and evaluation were not.

- Q.1** (a)+(b) Many candidates were very confused and got these mixed up.
- Q.2** (a) Well answered.
(b) Well answered.
- Q.3** Most candidates guessed the answered but very few were correct.
- Q.4** (a) Well answered
(b) Well answered
(c) The circle approach meant that most candidates scored 3 or more marks and avoided them making examination errors.
(d) As always, when candidates are asked to write, the questions are usually very badly answered. Most could not give a use of the database. We extended the mark scheme to also include sports centre answers but only the better candidates gained a mark. Candidates did not know what presentation software was or gave very vague answers.
- Q.5** (a) Quite well answered but it is surprising how many do not know the difference between input and output devices.
(b) Some gave the media e.g. 'barcode' rather than a device or the usual wrong answers e.g. 'till'
(c) Some of the better candidates gained two marks but most gave the usual 'price' and 'manufacturer's name'.
(d) Quite well answered but some candidates lost marks by saying 'enter it' or similar vague answers.
(e) This question used to be well answered but now candidates are giving answers such as 'help with packing' and many are getting very confused between PoS and ATMs.
(f) Candidates had a good go at this question and most gained marks except were answers were very vague. The commonest wrong answers 'Do it from home', 'Don't have to leave home', which are too vague.
(g) Many candidates on this tier found this question difficult and could only think of sales.

- Q.6** (a) Very well done.
- (b) (i) Again well done candidates recognized the mistake.
(ii) Candidates did not state how it could be prevented but gave terms such as 'validation' by itself. More detail was required in this differentiator.
- (c) Given that candidates score highly in the information handling coursework and do many searches and sorts, they fail to understand the principles behind a search and this was very badly answered. Many completely failed to identify the correct field and many made the obvious mistake of writing 'musicians'.
- (d) Well answered. They seem to have a better understanding of the sort process.
- Q.7** (a) Well answered.
(b) Well answered.
(c) Well answered.
(d) Well answered.
(e) Quite well answered when the answers are given to them in a table.
(f) Again when required to write on this tier they give very vague and poor answers.
- Q.8** (a) Well answered, but a common mistake was bad back / take regular breaks. Centres are advised to look at the published mark scheme for acceptable answers.
(b) Quite well answered.
(c) Again '*talk to strangers*' was a common wrong answer. There must be a sense of danger in the answer, not vagueness. In general candidates gained 2 marks at least.
- Q.9** (a) Well answered but no brand names are acceptable.
(b) Candidates are better at giving a process and only the weaker ones did not.
- Q.10** (a) Most candidates had no idea what teleworking was. Common wrong answers were '*tele sales*', '*television presenter*', '*call centre workers*', or vague answers such as '*work from home*'.
(b) Most candidates gained at least one mark and many gained two.
(c) Very badly answered with the better candidates getting the idea of '*lost manual jobs*'.
- Q.11** Most candidates gained one mark only.

PAPER 1

Higher Tier

General Comments

Good portfolio performances encouraged centres to put marginal candidates into the higher tier

Most candidates were entered into the correct level but some would have been more suited to the Foundation tier. The paper seemed very accessible to most candidates. There were some very good performances from some centres.

Q.1 Generally well done.

Q.1 (a)+(b) More candidates gained these marks than on the Foundation tier.

Q.3 (a) Very well done.

(b) Very well done

(c) Very well done.

(d) Not well done. This was where many higher tier candidates became unstuck. Most gained the database mark. Very few gained the control mark. Spreadsheets were slightly better but most mistook Presentation software for DTP. As in the Foundation tier the range of acceptable answers was widened to include sport centre type answers.

Q.4 (a) Very well done.

(b) Very badly done. I repeat what I said in the Foundation Tier. Given that candidates score highly in the information handling coursework and do many searches they fail to understand the principles behind a search.

(c) Although many candidates do validation in their coursework they could not apply what they learnt in practical work to this question. Most candidates gained one mark for identifying the error.

(d) Not well answered. Only the better candidates gained this mark.

(e) Again not well answered except by better candidates. Most went off into general advantages of a computer.

Q.5 (a)+(b)+(c) Were all very well answered as was the pattern in previous years.

(d) This new form of question benefits candidates and most scored at least one mark with many gaining two marks in a previously difficult question.

- Q.6** (a)+(b) It is surprising how many candidates did not know the difference between input and output devices and most only scored half the marks on these two questions.
- (c) Quite well done.
 - (d) Even on this tier candidates are getting confused with ATMs and help with packing bags.
 - (e) Quite well answered.
 - (f) Some candidates still gave vague answers such as '*do it from home*' but more explained the advantages.
 - (g) Candidates could think of more extensive uses of the web site at this level.
- Q.7** (a)+(b) Well answered.
- Q.8** (a) Most candidates had no idea what teleworking was and either gave the same type of '*tele sales*' answer as foundation candidates or left it blank.
- (b) Very badly answered. Answers were vague or again left blank.
- Q.9** Most could give one but candidates even on the Higher tier do not score well on GUI questions.
- Q.10** (a) Well answered.
- (b) Most candidates got very confused here. It links in with the earlier question on control software and illustrated that candidates generally had little understanding of control.
 - (c) Badly answered by all but the better candidates who realised a digital and pressure sensor was required.
- Q.11** Very well answered but centres are advised to look at the published mark scheme and avoid repeated answers.
- Q.12** (a) Most candidates scored one mark in each section but only the better candidates could extend their answers.
- (b) Well answered.
 - (c) Most candidates could give one clear benefit but not two.
 - (d) (i) Most candidates scored 1 mark on hacking but surprisingly could not extend their answers. Most gave extended answers on the spreading of a virus.
 - (ii) Very well answered but some candidates repeated the prevention they had given earlier and so lost a mark.

Portfolio

General Comments

- Most centres showed a clear understanding of the marking criteria.
- The level of annotation by candidates and centres proved very helpful in the moderation process.

Many more centres who are attempting work in the advanced sections particularly with respect to validation techniques, recording macros and graphics enhancement and processing before electronic combination with DTP.

However there are still some centres that are awarding marks especially for advanced work and design when there is no obvious supporting evidence.

- Some centres did not realize they had to download the official WJEC forms from the web site and did not provide the appropriate documentation.

General points regarding the mark scheme

Directory structures

This has improved but it is still worth noting that a screenshot of all the files in a directory does not show understanding of directory structures. A candidate may lose 3 marks here for each task which brings the centre close to being out of tolerance.

Accuracy and plausibility marks were generally accurate.

Information Handling

Enter data

Candidates should have entered the data to get these marks. There must be a keyfield for 1 mark in 'enter data' and the other 2 marks are for variety of data (*at least 3 other data types*).

Data capture forms.

There must be some evidence of design. A screenshot of table view in Access is not a data capture form neither is an empty grid.

Data Structure forms

The data structure form should be close to the database design unless it is created as a separate design activity and in the case of the latter there should be a report giving the purpose of the data structure form. It is confusing for the moderator if there are several databases which show different features but the centre has not indicated where they have awarded the marks. This could lead to misunderstandings. A screenshot of an Access table in design view **is not acceptable as a data structure form** because it does not explain the formats used for all data types.

Reasons for searches, graphs and sorts

Although this has improved over the years it is still the major area of disagreement. The specification states that there must be reasons for sorts, graphs and searches and some centres need to check that teacher led tasks contain reasons and not just instructions on what to search or sort. Centres give marks for reasons which simply describe the process not why they required that data. A common mistake was as follows:

Test	Purpose	Criteria	Reason
Simple search	To search for all the vegetarians	Vegetarian= Yes	I wanted to know how many vegetarians there are Or To pick out all the vegetarians. WHY? they wanted this information is the reason that should be explained.

Without reasons marks cannot be awarded as this does not meet the criteria as set out in the specification.

Advanced processes

Many centres are now attempting to use advanced formatting and automated features in the coursework. In order to gain the testing validation mark there must be clear evidence of a test. The teacher stating they witnessed it is not sufficient. Although most interpreted this well it would be useful to clarify the marking on this. One mark can be given for design of a validation routine e.g. range check, input mask, selection from a drop down list, design of format for date entry, were the commonest ones. One mark could be awarded for the creation and testing of this validation routine but there must be evidence in the form of a screen shot. It is not acceptable for the teacher to say I saw this work because evidence can be provided in this case. A third mark can be awarded under the advanced processing **if this validation routine was original and not a wizard i.e. NOT a short date or drop down list or input mask wizard**. If candidates successfully designed and implemented a range check, presence check, own validation rule or an input mask, for example, they could be given an extra mark under advanced processing. There must be clear indication of why marks were awarded for advanced features.

Spreadsheet Modeling

Many more centres are using advanced techniques e.g. validation, data entry forms, macros, Vlookups and goal seek. Most centres were accurate in their assessment of their work but there are still some areas of confusion.

Use of a formula

There must be evidence a formula was used e.g. printout in formula view.

What if? investigations

A 'what if' type investigation investigates the potential outcome if data or formulas **are changed**. They are not construction. Some centres still do things such as what if I add a Sum to total up the cells – result it gives me the total. The latter is construction not investigation.
or

What if I add an extra row but no **predictive or investigative purpose** is given.

There must be an investigative purpose for a 'what if' type of investigation. This must be clearly stated in a test plan or in a report. There must be some form of annotation on the printouts to say what the printout is showing. If the 'what if' involves a change of formula then there must be **before and after** evidence of the spreadsheet in formula view to show the change in formulas.

Graph

As indicated in the specification, all graphs must be supported by reasons for, or a purpose for the graph.

Design of a spreadsheet

Design cannot be inherent. There must be evidence of individual design for at least 3 of the 4 design marks. The candidates must produce the individual, original design of their own spreadsheet. There are still some centres who set the standard 'Disco Cost' exercise but still awarded candidates full design marks when the candidate had clearly contributed nothing to the design. It is worth re-stating the marking scheme for this section.

In the design section **1 mark only** is given for formatting the spreadsheet e.g. putting on a grid shading, bold, etc.

The other three marks can only be awarded for original designs done by candidates.

- A second mark is for the candidate's initial design on a grid showing **label and data**. Usually this is hand drawn.
- A third mark is for including the design of **formulas**
- The fourth mark is for an **explanation of the purpose of the formulas** in their original design.

Communicating Information

Candidates are producing some very good work.

The areas of concern in previous reports are still the same.

- Some centres included documents that had no stated purpose. Centres should ensure candidates state the purpose of the documents or presentations as required by the specification.
- Centres should clearly indicate where they have awarded marks for advanced features.
- Again it was in the design section that centres tended to be generous. There must be evidence of design either on paper or a detailed report or a combination of both, it cannot be inherent. To get 3 marks there must be detailed annotation that included details of font styles and sizes, margins, origin of picture files, etc. Details of sound and/or animation effects should be included if used.

PAPER 2

Foundation Tier

General Comments

This year many of the candidates found the examination accessible. Some candidates could not define RAM, ROM, LAN and WAN which was very disappointing. A few candidates demonstrated good examination technique and gained high marks.

- Q.1** Well answered, although some candidates indicated that a plotter was an input device.
- Q.2** (a) (i) Many candidates could not answer correctly what the letters RAM stood for.
(ii) Many candidates could not answer correctly what the letters ROM stood for.
(b) Generally well answered.
(c) Well answered.
(d) Most candidates could give two different types of backing storage.
- Q.3** Many candidates confused the applications for OMR and OCR.
- Q.4** Poorly answered considering it appears in one form or another in previous examination papers.
- Q.5** (a) Poorly answered by many candidates.
(b) Quite well answered.
(c) Most candidates suggested passwords as a way of preventing unauthorised access to a network.
- Q.6** (a) Many candidates knew that an operating system was software.
(b) Well answered.
(c) Many candidates found difficulty defining an icon, but gained marks by providing three features of a GUI.
- Q.7** (a)&(b) Poorly answered on the whole, obviously not studied by candidates in certain centres.
(c) Well answered.
- Q.8** (a) This question proved too difficult for the majority of candidates.
(b) This question proved too difficult for the majority of candidates.
- Q.9** (a) The majority of candidates found this question difficult.
(b) Quite well answered.
(c) Well answered.

PAPER 2

Higher Tier

General Comments

There was evidence this year that candidates had been incorrectly entered for this tier. Many candidates found the paper demanding, resulting in a few questions not being attempted.

- Q.1** (a) Well answered.
- (b) It was obvious from the answers seen that some centres had not covered this topic.
- (c) Poorly answered.
- Q.2** (a) Many candidates lost marks by not providing detailed answers. One word answers were common.
- (b) The most popular answer was 'power cuts'. Some candidates misread the question and centred their answer around a non-manufacturing industry.
- (c) Car manufacturing was a popular answer.
- Q.3** (a) Many candidates gained full marks for this question.
- (b) Not many candidates could define '*disk cache*'.
- Q.4** (a) Poorly answered on the whole, many candidates confused it with the computer misuse act.
- (b) Surprisingly well answered.
- (c) Well answered.
- Q.5** (a) Most candidates gained at least two marks.
- (b) Some candidates knew that it was heavy on memory.
- (c) Quite well answered. Command driven, menu driven and voice were common answers.
- Q.6** (a) Most candidates gained at least one for this question by mentioning software.
- (b) Most candidates found this question difficult.
- Q.7** (a) Much better answers than in previous years.
- (b) Most candidates gained at least one mark.

- Q.8** (a) Many candidates gained marks for describing '*batch processing*'.
- (b) Poorly answered considering the time taken at INSET to cover the topic.
- (c) Not many candidates gained full marks. Either they gave a completely wrong answer or did not include 'to date' in their answer.
- (d)&(e) At least one mark for each section was gained by most candidates.
- Q.9** Well answered by many candidates.
- Q.10** (a) Very poorly answered. Many candidates simply answered '*designing hardware and software*'. Rarely did valid answers appear.
- (c) Parallel and Direct changeover were common answers.
- Q.11** Very well answered.
- Q.12** Very well answered.
- Q.13** Some outstanding answers seen here. Some answers covered three pages of text showing in-depth knowledge of the subject and in some cases well above GCSE standard. Many answers included hacking, virus spreading and fraud.

PROJECTS

General Comments

Apart from a few centres that had genuine reasons for late submission, coursework arrived on time and included the required documentation. Please note that samples submitted for moderation must be accompanied by a complete list of candidates sorted on the total combined mark for portfolio and project. Centres who encounter any difficulties (e.g. network failure) should inform WJEC as soon as possible if the deadline cannot be met. It is important that the supervisors annotate the marksheets explaining where the candidates are awarded the mark, as this makes the moderation process easier. Standardisation between supervisors **within centres** was much better this year resulting in fewer encountered problems during the moderation process. Most centres complied with WJEC guidelines by writing the centre number, together with short or full course clearly on the outside of the packaging containing the coursework samples.

Marksheets

Marksheets supplied by WJEC are the only ones to be used. Forms created by centres are not to be used.

The standard of projects submitted for moderation was on the whole very good. Candidates within centres attempted a number of different topics. This should be encouraged, as it goes a long way to ensure the individuality of the coursework (it should not be teacher led). There were many interesting projects that had been well researched, the better examples having considered the different types of data needed to be collected. As pointed out in previous reports, there is no need to include more than ten completed data capture forms. **Centres should take into account how demanding the problem is when awarding marks for Section A.**

Candidates should be reminded to include all sections outlined in WJEC's specification. Marks can easily be lost or gained depending on whether a section is included or not.

Areas of projects which give cause for concern

Section A

Background

This sets the scene, who, what, where, why, etc., the most useful information came from candidates with a personal interest in the topic chosen.

Analysis

Again this year interviews and questionnaires were used but did not always provide useful information. Many looked at standard problems and listed the general problems of a manual system such as storage, lost documents, etc., without looking at the specific requirements of the system studied. Supervisors commented on a thorough analysis being carried out but there was little evidence within the project to support it.

Section B

Data Flow

Many different approaches to this were evident. What is required is a free hand sketch of the **mail merge**.

Section C

Some centres did not include test plans or the implementation of the test plans, yet were awarded full marks for this section. Proof of testing must be clearly shown to be awarded marks. Realistic reasons for the searches and sorts must be provided to gain the marks.

Section D

Only a few projects did not include some form of evaluation. The standard again varied from centre to centre. Candidates were very reluctant to discuss future developments.



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