GCSE EXAMINERS' REPORTS

INFORMATION AND COMMUNICATION TECHNOLOGY

SUMMER 2017

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Annual Statistical Report

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INFORMATION AND COMMUNICATION TECHNOLOGY

GCSE

Summer 2017

UNIT 1 / 4331 - UNDERSTANDING ICT

Comments on individual questions

Q1.   This question was accessible to almost all candidates due to the tick box format. The question was well answered by the majority of candidates and many achieved the full five marks available. Most candidates showed good knowledge of the topic and were able to identify which Bluetooth statements were true or false

Q2.   This question was fairly well answered by most candidates with many candidates gaining at least one of the two marks available. The question had a slightly different format and candidates were given the knowledge example and were required to insert an example of data and information. Most candidates were able to give the data answer correctly.

Q3.   (a)   Well answered by most candidates with many candidates achieving at least one of the available two marks.

       (b)   Fairly well answered by most candidates.

       (c)   Very well answered by most candidates.

       (d)(i)   Very well answered and accessible to all due to the tick box format.

       (d)(ii)   Well answered and most candidates could identify at least one suspicious aspect of the phishing email.

       (d)(iii)   Most candidates were able to advise how to prevent misuse caused by a phishing email. Popular answers included blocking the email address, not clicking on the link and reporting the email.

Q4.   (a)   Most candidates found this question accessible however many candidates did not answer the question correctly and did not correctly identify how many fields had a Boolean data type.

       (b)   This question was very well answered with most candidates achieving full marks for identifying that Owner ID was the key field and explaining that it uniquely identifies each record.

       (c)   This question was fairly well answered.

       (d)   Accessible to all and well answered by most candidates.

(e) Candidates mostly answered this question correctly. Search criteria was spelt correctly and many candidates achieved the full two marks available.

(f) Very poorly answered by most candidates. This was a new question and the majority of candidates were unable to give the simple calculation for the calculated field. As the question was new, the syntax was not required this time.

Q5. (a) Very well answered by most candidates – many candidates gave the correct formula.

(b) Well answered by most candidates.

(c) Well answered by most candidates.

(d) Unfortunately this question was extremely poorly answered by most candidates and many candidates were unable to give the correct formula to calculate the 15% discount. It was also not attempted by many candidates.

(e) The IF statement question was fairly well answered by most candidates this year which was great to see.

(f) Many candidates were able to give correct benefits of using a spreadsheet.

Q6. Well answered by all candidates. Candidates were able to describe at least one electronic registration method. Where candidates lost marks was by giving an answer related to biometric registration systems such as fingerprint scanning and this answer was precluded as it was in the question.

Q7. (a) Very well answered by most candidates. Many candidates were able to give at least two out of three sensors used to collect weather data. Some candidates lost marks by not giving the full answer for wind speed or wind direction.

(b) This question was quite poorly answered, even though it was accessible to all candidates due to the tick box format.

(c) This question was quite well answered by many candidates and most candidates seemed knowledgeable on the advantages and disadvantages of ICT based weather forecasting systems.

Q8. This question was answered fairly well my many candidates.

Q9. This question was fairly well answered with candidates being able to state some health hazards caused by using a computer. Preventions were also given, although marks were lost due to repeated preventions being given. The major downfall on this question was candidates simply stating the health hazards and not describing how the hazards would be caused.

Q10. (a) This question was well answered by most candidates.

(b) Most candidates were able to gain at least one mark out of three on this question.

(c) This question was well answered with the most popular answer being "Viruses can be introduced".

Q11. This question was attempted by most candidates. The question was fairly well answered, however many marks were lost due to candidates mixing up the uses and advantages of social networking. Many candidates gave uses as advantages and unfortunately these marks were lost. The disadvantages were well described and most marks were gained for this part of their answer.

Q12. The question was well answered by many candidates. A similar question had been asked previously and it was pleasing to see that the majority of candidates had very good knowledge of software types and how they can be used to help organise an event.

Popular answers included using database software to keep a record of all students going on the trip and their medical information. Candidates also described how spreadsheet software could be used to calculate the profit and loss for the trip and to calculate the payments that students had made towards the trip so far.

The main reasons marks were lost on this question was due to candidates using brand names for the software, which is not accepted. Also many candidates unfortunately did not read the question correctly and realise that two different examples of how the software could be used to organise the trip were required to achieve full marks.

The correct terminology was used by almost all candidates who attempted this question and there were very few spelling, grammar and punctuation errors. The majority of candidates attempted this question. Some excellent answers were seen on this extended writing question and in some cases were extremely impressive and well above the GCSE required standard.

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UNIT 2 / 4332 – SOLVING PROBLEMS WITH ICT

GENERAL COMMENTS

Most centres have a good understanding of the requirements of the controlled test and most assessed accurately.

Please ensure that moderator reports are seen by the IT department as some centres are making the same mistakes as in previous years despite detailed reports.

Please note that requirements of the test change e.g. sometimes they are only required to add 2 fields in Information Handling and hence can only get a maximum of 1 mark. If they are required to do a sort in Modelling, then the marks they can get are sort + 3 other advanced features.

Many more centres now submit their work electronically. Folders should be well organised and the candidates must ensure they are coherent and evidence is easy to follow and find.

If submitting electronically the evidence report should be one file and not scattered around several folders and subfolders.

Those centres that used the one sheet marking grid or their own version of the grid were generally more accurate and moderators could clearly see where marks had been awarded. The grid is downloadable from the WJEC website.

The main problems found by moderators were not new and were the same as previous years.

FILE HANDLING

Most centres provided good evidence but some areas need highlighting.

- Evidence of backup folders on an external device. Screenshots should show the end process not just the copying. The screenshot must show the root folder not just one file saved on a USB or external device / different network drive.

- Demonstrate careful version management: this applies to all the files, **not including** the draft and final DTP / presentation documents, which they are already required to do.

- There should be evidence of t**wo** different folder operations e.g. copy, move

RESEARCH AND DATA COLLECTION

- Source logs should have more than 2 different types of links. Candidates should be encouraged to show about 4 links at least with a variety of types e.g. some links to websites and some to pictures.
- For full marks in searching the internet, a minimum of <u>three</u> screenshots are required of searches and their results

1. One key word search using a search engine.
2. A second keyword search for a different purpose using a search engine.
3. One URL search **showing the keyword search box empty** and typing the URL address directly into the address bar. This is generally misunderstood with screen shots of pages of links. There should be <u>no produced links</u> on this screenshot.

- Questionnaires must be filled in to show they had acquired information. Blank questionnaires should not be awarded marks by the centre.

- The same goes for email. Emails should be to some <u>external</u> source and not the peer group as in the later section. They should also have received a reply with some information in before they can be awarded a mark.

EMAIL

Some of the screenshots were so small as to make them hard to understand.

The email must in line with the requirements of the controlled task. It is not a task about emailing. It is a task about using a variety of email facilities to gather opinions on their first drafts.

Some centres show screenshots of candidates doing email activities which have no content or no content which has any bearing on the <u>stated task in the examination controlled test paper</u>. Therefore they should not be awarded any marks by the centre.

The mark for using a contacts list is not for selecting a contact. It is for using a contacts list to add and amend and delete entries. All three must be evidenced.

As in previous years the quality of the formative evaluations are so poor as to hardly warrant a mark, and do nothing to improve the standard of the individuals work.

They tended to be of a general nature and would do little to help the candidate show they had responded to those comments in improving their individual work.

Formative evaluation: (8 marks)

Own comment on document to improve it	2
Comments from others on document to improve it	1
Evidence of responding to comments in document	1
Own comment on web or presentation to improve it	2
Comments from others on web or presentation to improve it	1
Evidence of responding to comments in document	1

Comments from others and own comments to improve the work.

Comments were again <u>very</u> weak and general e.g.*' Change the font/add more text/add more pictures.'*
Such general comments were not worthy of a mark.
This is an area which needs to be improved with more in-depth comments and suggestions for improvements.

Drafts and final documents

Most candidates produced drafts and final documents although sometimes it was difficult to know which was which; there seemed to be very little difference between them.
Again centres should note that only features which appear on the final document or presentation can be credited.
Evidence could be strengthened for the following:
- Insert, crop or resize and position an image fit for purpose needs a before and after screenshot and it would be helpful if these could be annotated by the candidate.
- On a web page or in a presentation, sequence a set of events needs a screenshot showing the selected custom animation if submitted on paper.
- Using a **second,** different source for data. Some centres used original animations or sound but evidence of these was needed.
- Automatic headers or footers must appear on the final document **on more than one page or slide.**
- Automatic page numbering **on more than one page or slide** must appear on the final document or slide.

MODELLING

There were examples of very good spreadsheets but centres should ensure candidates do not clone approaches to the set task. Candidates should be encouraged to produce more original solutions.
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Although improved it is probably still worth noting that the marking of '*Explanation of formulas/function/ feature' tended* to be generous.
Please use the following for guidance.
- **Sum is used to add up the range of numbers = 0 mark band**
- **Sum(B2:D2) is used to give the total points gained = 1 mark band**
- **Sum(B2:D2) is used to give the total points gained by adding up the points given for goals, assists and appearance = 2 mark band**

All formulas used should be included in the *explanation* and should not take the form of just annotation saying "I did a SUM here".

What-if investigations are still a problem area.

What-if investigations need **to have a reason** for undertaking them **and a conclusion**. Candidates should not change data or formulae without a purpose and they must discuss the knock on effect of the changes they have made, not just say "everything changed/totals changed". What was the total before, and what was it after the investigation.
Investigations are not adding additional elements to the design of their spreadsheet.

DATA HANDLING

Basic features
This was generally accurately marked

Produce lists

Please note that <u>only</u> the **database, the searches and the sorts required by the controlled task** should be given any credit.

Advanced features

The following should **have reasons why the data produced** as a result of these operations is needed. If there are no stated reasons for the search or sort no marks should be given.

- use logical operators and at least one wild card/parameter search
- sort on multiple fields

Calculations must be shown in Design view so the formula can be seen.

EVALUATION

The marks for the formative evaluation earlier (8 marks) are added to the seven marks for the summative evaluation on the banded IT2 form.

Summative evaluation (7 marks)
The marking of this section has improved but some centres still give marks for what is effectively a list of what they have done, rather than a critical evaluation.
Candidates are expected to write a critical evaluation on each of the following not just make one brief comment on each.

The summative evaluation should cover all of the following;
- analysis of data and information used in modelling (*Data/formulas graphs*)
- analysis of data and information used in data handling *(Keyfield. extra fields+ data validation)*
- Concrete suggestions for improvements *(modelling and data handling)*
- Evaluation of other tools + techniques *(all tasks: Final choice of DTP features/ investigations/ sorts/ searches / etc.)*
- review of feedback *(Just a statement saying they considered improvement)*
- analysis of research methods/ data collected/data used (Internet/ paper sources/email)
- Evaluation of working practice *(data protection/security/health and safety).*

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UNIT 3 / 4333 – ICT IN ORGANISATIONS

1	This question was well answered. Most candidates were able to list 4 IT devices and state whether they were input or output. Some candidates lost marks for listing a device that was both input and output.
2ai	Answered well by the majority of candidates. Some candidates lost marks for not showing a hub in the centre of the star diagram.
2aii	Well answered.
2aiii	Almost all candidates that attempted this question went for a Bus topology. It was well attempted. Some candidates lost marks for putting the computer in the backbone instead of running on a cable that's connected to the backbone.
2b	Well answered.
2ci	Most candidates gained some marks on this question. Some candidates repeated the same advantage with a different example and lost marks.
2cii	Generally answered well. Some candidates gave one word answers and lost marks.
2d	Most candidates gained one form the three marks. Candidates generally lacked the understanding of the full process of how data is broken down at the source machine, sent using switches over a network and re-assembled and the destination machine.
3a	Generally well answered.
3b	A high number of candidates struggled to answer this question and often repeated elements that were included in part 3a.
3c	Some candidates lost marks for giving disadvantages of using presentation software rather than disadvantages of using multimedia components in a presentation.
4a	Generally answered well. Many candidates were able to identify the use of key frames and that the process of tweening happened automatically between the key frames by the software.
4b	Answered well by most. Where candidates lost marks they were repeating the question or using synonyms for "increase" or "decrease".
4c	Only correctly answered by a minority. "Persistence of vision" or "afterimage" were both accepted.
5a	Well answered.
5b	Well answered.
5c	This was poorly answered. Few pupils were able to describe the full process from input, process and output.
5d	Only a few candidates were able to give a coherent answer explaining that a feedback system has an output affects the input.

6	Well answered.
7	Well answered. Most candidates were able to gain some marks in each part of the question.
8a	Well answered. Some candidates lost marks for repeating the same advantages.
8b	Well answered. Some candidates lost marks for repeating the same advantages.
9	The majority of candidates showed a good understanding and attained the majority of the marks.
10	Generally answered well. Where candidates lost marks they were giving the advantages for the employee and not the company.
11	Generally poorly answered. Some candidates were able to use the list of points provided in the question to gain full marks but the majority of candidates demonstrated little understanding of any payroll application.

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UNIT 4 / 4334 – DEVELOPING MULTIMEDIA ICT SOLUTIONS

Centres continued to make the same mistakes, despite detailed comments from moderators about where individual centres were going wrong.

General Points

- Centres are reminded that samples of work should be submitted **electronically** not in printed form.

- Centres should test the sample away from the network and run the candidates work from the USB or DVD. Centres should remember to label their media with their centre number.

- Centres should check that all of the links work and that animations and movies still run after they have been copied to the media. **Marks cannot be awarded for any feature which does not appear in the final presentation or website on the media.**

- As stated last year centres should publish the final websites so they are in a finished and readable form. Moderators will not be expected to download software and go through the original work files to find evidence of features.

- Candidates should submit a single evidence report of their work to support the skills they are trying to display. The report containing screenshots of features was invaluable. These need not be a complete record of every little step a candidate took but might provide sufficient evidence of features used. It is very time consuming for moderators to track bits of evidence stored in many folders and subfolders and shows a lack of organisation on the part of the centre.

- Centres need to consider how they are going to publish the websites for the moderator to assess. Of the many websites and presentations seen very few ran as completely as they should. Videos and animations in websites and even in PowerPoint presentations sometimes did not play. Therefore the evidence reports became crucial in supporting centre marks.

Many of the comments from last year are applicable to this year as new centres had similar misinterpretations.

ORGANISATION OF FOLDERS AND FILES

Evidence of backup folders on an external device: Screenshots should show the end process not just the copying. The screenshot must show the root folder not just one file saved on a USB or external device/different network drive.

Demonstrate careful version management: this applies to all the files not just one file.

Sources log; this came in many forms and was generally fine. Note candidates should be encouraged to have at least 4 different links and not just all picture links. There must be some website links as well.

RESEARCH AND DESIGN

Analysis of websites

Describe the target audience of each.
Again this was generally well done Candidates should be encouraged to be more specific. General phrases like customers / people are too vague. They need to say what age group/ specific group of people etc.

Compare and contrast multimedia or web features.
As last year this proved to be a problem area. There are still some Centres who give marks when candidates have not labelled the features on the websites but only listed them.

- Candidates do ***not need to identify data/ pictures/logos for this section***. They should identify multimedia e.g. flash animation/movies/podcasts etc. or web features hyperlinks/hotspots/shopping trolleys etc.

- Clearly identify them on the website **by drawing an arrow to them** not just listing them as a set of bullet points. Some centres set up a table and had pupils copy and paste a screenshot of the feature into the table and label it. This was quite a useful way of doing the analysis.

- Having identified the features, for maximum marks, they had to compare four similarities and four differences between the features on the websites. **Please note the following as this can be a major issue for centres who are out of tolerance.**
  If they had not labelled the multimedia or navigation features in the ways outlined above then they should not be awarded any marks in this section.

Identify file type and file size of two different features on the websites.
Again this section was not well done. The features could be on one web site they do not need two on each site.

- These could include images or multimedia/web features. They must be **different types - not 2 jpegs**

- They must also **identify or indicate the size of the file as well as the type.**

<u>Research individual presentation or web page</u>

This is a design phase and there must be evidence of planning and design. No design marks can be given for an implemented system i.e. it cannot be already existing.

Candidates were expected to write a paragraph about the purpose of their web page or presentation. This should include purpose and target audience

Candidates are expected to explain how or why their solution is fit for purpose and audience. They should describe the content of each slide or web page.

Candidates were expected to hand draw the design of a master page and scan it in or use a paint type package **or** use DTP features to design their master page in outline.

<u>Collection and design of mood colours/mood board</u>
Some Centres gave marks where only imagery was identified.

Mood boards must consist of at least 2 out of the three of the following
- Images
- Colour schemes
- Fonts

Colours or images alone should not be awarded a mark

IMPLEMENTATION
Please note the comments made under general points about publishing the website or presentation. Only features present on the webpages or presentation should be awarded marks.

Again it was a similar picture to last year but a few centres still do not understand the basic requirements of the specification.

Some candidates only produce one image built up from a simple one. This is still one image and therefore should not be awarded two marks.
The same goes for the animation. An animation which is a banner cannot be counted both as an animated banner and an original animation.

Two separate animations and two separate images are required.

In outline they should;

- Create an <u>original</u> master page or master slide with navigation features.

- Enter <u>text fit for purpose</u> on each slide or web page (to a max of 6)
  Some centres gave marks when there was no suitable text on the page only pictures.

- Create **two discrete** <u>original</u> images, one simple and the other using at least three layers. The simple image **cannot** form part of the complex one. Provide evidence of features used to create them. Consider compression choices for both.

- Create a detailed storyboard for a first original animation with timings.

- Create **the first** original animation and provide evidence of features used to create it. Consider timings and frame rate.

- Create **a second <u>different</u>** animated banner.

- Use and manipulate sound files.

- Use other advanced features can be used to enhance the basic requirements outlined above.

- Evaluate their work

Most of this is well done but a few centres incorrectly double-counted one feature especially with regard to images and animation. The following advice is repeated from last year's report.

IMAGES
Generally well done but evidence of the use of at least 3 frames should be included for complex image.

Create two original images such as a logo or web icon or other image and optimise it, save it in appropriate format. Most candidates created 2 clearly different images but many did not show any evidence of consideration of compression formats used. They should not be given the second mark for each image if they have no screenshot evidence and have not discussed this process.

Illustrate the techniques used to create each range of software tools.
Sometimes it was clear what tools they used (shapes/fill/text) but other times moderators could not support the centre marks. It would be useful if pupils annotated their images to say what they used they should provide construction evidence e.g. lighting effects, removal of backgrounds etc.

ANIMATIONS OR ANIMATED MOVIE
In general these were very well done and candidates produced some very original animations.

An animated movie is not using still photographs to make a movie.
It is using movie making software to make an animation, perhaps with images one has drawn in an animation package, but is a working animation put into a movie package to get the title and effect marks.

Create a storyboard **for the main animation** and not the banner

Some centres interpreted this as a storyboard for a movie, this was acceptable if the movie software was used to make an animation.
The second mark was for planning the frame rate and/ or timings involved in each frame group. Where this was attempted it was well done but some centres gave two marks when frame rates/timing were not planned.

Two different animations are required.

Some centres created an animated banner combining graphics and text and counted this as both their main animation and their banner. **This is not acceptable**. Animations need clear evidence of features used and this is up to the candidate to provide. Many moderators struggled to see use of features for which the centre had awarded marks.

Advanced features
Complex animations require complex movement not just a cars moving straight across six frames.
Many centres misunderstood the background mark in basic features to that in advanced features.
- In the basic features there is a background which does not move.
- In the advanced features the **background moves as well as the animation** in front of it.

- Complex layering means there are animations on top of animations.

- Complex looping mean individual items in an animation have a different looping cycle and not just the basic looping of replaying the whole animation in a loop.

Very few candidates <u>explained</u> their timing and/or frame rate which they went on to use but centres still awarded the mark.

SOUND
Create and manipulate sound or music
Centres approached this in a variety of different ways. Candidates could gain the three basic marks in one of three ways.

Use a sound file from a library / background to a movie. = **1 mark**

The other **two** basic marks could come from **two** of the following;
- One simple edit on sound e.g. crop
- Second simple edit on sound e.g. change volume
- Discussion of compression used / or of movie compression if sound is in movie
- Extended discussion and justification of compression used and evidence of experimenting with different file compression types.

Advanced features
Use of advanced features in sound seemed more popular this year with widespread use of sound editing programs such as Audacity.

Most of the evidence for advanced features was generally provided in the report. However some centres appeared to award marks for advanced features when little or no evidence was provided and their marks could not be supported especially as the sound files did not play in the website or presentation.

EVALUATION

Centres are becoming more demanding before awarding marks hence evaluation marks were better assessed.

Teacher comments would be useful in describing where they awarded the marks.

Evaluations should not be a description or log of what they did but should evaluate the good points and be critical of the weak points in their solutions. They should suggest concrete future developments, not just say add more pictures, add a video, add another animation etc.

However, some candidates were given full marks when some of the main sections were not covered e.g. how to publish/host their presentation or website to the web. They tend to talk only about compression.

For full marks, **all** of the following sections have to be covered.

Evaluation of solution (website or presentation/ images/ sound /animations movies data)
- **Description** of the suitability and effectiveness of the features analysed
- **Evaluation** of tools and techniques used
- **Justification** of choice of image, movies, sound and animation optimisation.

Critical analysis and problem solving
- Suggestions for **improvement**
- Review of feedback given and received
- Comments on modifications made

Publication
- **Consideration of download / upload times and file size** (compression / optimisation)
- **Consideration of <u>output to the web (hosting)</u>**

Summary evaluation
- **Evaluation of effectiveness** of final solution (is it fit for purpose?)
- **Evaluation of working practice** (research/ organisation /safe working)

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