



GCE EXAMINERS' REPORTS

**GCE
APPLIED ICT
AS/Advanced**

SUMMER 2019

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Annual Statistical Report

The annual Statistical Report (issued in the second half of the Autumn Term) gives overall outcomes of all examinations administered by WJEC.

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APPLIED ICT
General Certificate of Education
Summer 2019
Advanced Subsidiary/Advanced
AICT 1 E BUSINESS

General Comments

The AICT 1 paper is divided into two parts; Part A comprising a one hour written examination paper and Part B, a series of tasks to be carried out in a practical two-hour examination.

The paper for Part A was provided to centres in an on-screen format that requires candidates to enter their responses into text boxes with one screen per question. Where centres were not able to access the on-screen examination, traditional paper-based examination papers were used. These papers required candidates to write their responses in the spaces on the paper. Neither examination format appeared to cause problems from the candidate's perspective nor did the format appear to influence candidate outcomes.

In many cases candidates provided brief responses to questions that carried a significant number of marks. Candidates should note the wording of the questions, which is designed to suggest the level of the detail required in candidates' responses by the use of words or phrases such as 'state', 'describe briefly', 'explain' or 'describe in detail'.

Centres and candidates are reminded of the value of giving examples to clarify an answer and in some cases to provide additional evidence of a candidate's understanding of the topic of the question. A good example, even if not specifically requested, can often help to secure a mark when a description is lacking clarity or detail.

Some candidates lost marks by not relating their responses to the context of the question or the given scenario. Candidates should be aware that this is an applied qualification and the examination is designed to test their ability to put their knowledge of ICT into the given situations. If a question describes a specific context, and invites the candidates to refer to the context, then marks will be lost if this is not done.

The standard of language used was generally good, though some weaker candidates lost marks through the apparent inability to express themselves clearly.

In Part B of the examination, candidates were required to carry out a series of on-screen practical tasks set in the same context as Part A of the examination. Many candidates were able to demonstrate good practical skills in the use of word processing, spreadsheet and database packages. However the ability of a significant minority of candidates to use the software was concerning as their use would have been required to carry out the coursework tasks for AICT 2 as part of their AS studies. Many candidates appeared to be unfamiliar with the layout for standard business documents.

Comments on individual questions/sections

Part A – written paper (40 marks)

- Q.1** *Describe two benefits of extending an existing network for additional users rather than installing a second network.*

This question was not well answered by the majority of the candidates. Many candidates simply responded with answers such as 'cheaper' rather than describing any technical benefits related to data and resource sharing.

- Q.2** *Complete the diagram to show the room letting process.*

This question required the candidates to complete the given information flow diagram. Most candidates were able to score marks by labelling boxes correctly although many failed to identify where copies rather than original documents were sent from department to department.

- Q.3** *Describe two advantages of using a relational database to store information about the students and houses of multiple occupation.*

Many candidates provided responses that would have been applicable to a flat file data structure rather than the additional features provided by a well-structured relational database.

- Q.4** *Business data is valuable and should be kept secure. Describe the purpose of cryptography.*

This new topic also seemed to cause candidates difficulty with many simply stating that data would be encrypted rather than why data is encrypted and the implications of the encryption on the safety of data when being transmitted over the Internet.

Describe what is meant by biometric security.

Many candidates provided good responses to this question and were able to describe the use of systems based on fingerprint or retina recognition technology.

- Q.5** *Explain the advantages of using an 'Off-the-shelf' specialised accounting package rather than developing a spreadsheet in-house.*

In general, this question was poorly answered well with many candidates failing to gain marks here. Candidates tended to concentrate on employees not having the required skills rather than issues such as time scales, well tested robust packages and the availability of technical support.

- Q.6** *Describe what is meant by the term 'big data'. Explain what is meant by data mining.*

Many candidates struggled to identify the huge volume of data involved in the creation of data warehouses. Most responses referred to activities more relevant to the use of a relational database and mistakenly identified schemes such as loyalty cards for individually identified consumers.

Q.7 Describe how the facilities of an email package can be used to contact the students effectively.

As usual, this question was well answered by most candidates who were able to identify facilities such as group emails, carbon and blind carbon copies of emails and the use of attachments.

Q.8 Explain the role and structure of a uniform resource locator (URL) using 'http://prospect-lettings.co.uk/rooms'.

It had been thought that this would be an accessible question for all candidates. However, many appeared unable to identify the components of an URL. Very few candidates were able to explain the structure of a URL in terms of protocol, domain name and extension.

Q.9 Web browser software is used to display websites from the World Wide Web. Describe the purpose and function of a web browser.

This question was very poorly answered. Most candidates ignored the role and facilities of web browser software discussing the use of search engines to find and locate websites as the result of carrying out searches.

The question required candidates to discuss how browsers allow users to view text, images and interactive content delivered via the Internet.

Part B – Practical tasks (60 marks)

Many candidates were able to access marks for the two practical tasks. However, a significant minority of the candidates appeared to have difficulties in carrying out even the most basic tasks.

Task 1 – Finance

Open the 'Finance file', look at the two worksheets and familiarise yourself with their contents.

Most candidates were able to create the additional worksheet and import the given data.

Many candidates were not able to merge the required cells on the first worksheet. The use of lookup formulae was well done by a minority of candidates with others failing to identify the need to include the use of FALSE in the formula.

The use of some of the content of the reformed specification such as COUNTIF and SUMIF was not well done. It is essential that candidates are familiar with all content of the specification.

Task 2 – Administration

(a) *The property management coordinator has details of **properties** and **rooms** that PSL currently manages. These details now need to be organised.*

Many candidates were able to recognise the need to split the data into a **properties** table and a **rooms** table as indicated by the emboldened text in the stem of the task. It was pleasing to see many candidates used action queries to achieve this, gaining additional credit for their work.

However, a significant minority of candidates chose to ignore the advice and attempted to split their data differently. This resulted in an incorrect relationship between the tables.

Most candidates attempted to create relationships between their tables. Some candidates failed to recognise the need for the use of primary keys for both tables. A minority of candidates attempted to add additional fields to create relationships. Candidates should ensure that they remove any duplicated data.

Few candidates gained all marks available for the use of appropriate application of validation rules.

- (b) *The property management coordinator requires an input form to view property details and enter room information.*

Where candidates had failed to create the correct relationship between the two tables they were not able to create a form with the correct sub-form. In many cases candidates only gained the mark for inserting the given logo onto the form.

- (c) *PSL sends details and initial cost of rooms that are available to prospective tenants.*

This task was not well done. Candidates struggled to create the query required to populate the report to include the details and initial calculated costs of rooms to the students. Although it is appreciated that candidates are working under examination conditions it is surprising that they experienced such difficulties in light of the work they have carried out for AICT 2 during the academic year.

In general reports were poorly formatted and lacked the required calculated content. It was pleasing to see the minority of candidates who produced well formatted reports that included all required content.

Evaluation

Describe two ways in which the database could be extended to help manage the business.

Extremely few candidates were able to gain full marks for this section of the work. It is hard to understand how candidates who are gaining good marks for AICT2 are not able to explain the underlying purposes and structure of relational databases.

Summary of key points

- Many candidates struggled with all questions on part A, with the exception of question 2. Questions 6 and 9 were the least well answered questions on part A. Generally speaking, the part B tasks were well answered, the evaluation, however, was the least well answered question on the whole paper. It is suggested that teachers focus on delivering the theoretical aspects of part A and encourage candidates to provide full answers which address the specific requirements of the questions.

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AICT 2 E SKILLS

General Comments

Many good projects were seen during the moderation process, with a large number of centres marking to the appropriate standard.

Most centres completed the required paperwork correctly. In future, it would be helpful if the centres' assessors could complete the comment/justification sections of the cover sheet to explain their marking decisions. Centres must note separately the marks awarded for the spreadsheet and database elements of the design and implementation of each.

Comments on individual questions/sections

SPECIFICATION

Many candidates were able to analyse the scenario and produce a working specification summarising the intended outcomes of the coursework. However, in some instances, it appeared that the candidates did not have the necessary prior knowledge, understanding and skills in the use of database and spreadsheet software to be able to give sufficiently technical justifications of the methods to be used in the solution.

SYSTEM DESIGN

This section was completed to a good standard by the majority of candidates, however those candidates that did not have the necessary prior skills were unable to design the processing requirements of the systems.

In some instances the design matched the completed system and seemed to have been completed retrospectively. It is essential that the design is completed before the implementation and should not be changed to match the completed system. Candidates would benefit from researching standard documentation in order to design effective outputs.

IMPLEMENTATION

Most candidates produced good database systems, including a series of related tables, effective data entry forms and the required outputs. Many implementations included automated facilities such as update queries and macros which improved the HCI.

A significant minority of candidates produced database systems that were too simplistic and failed to address the requirement to "keep information relating to the issuing of vouchers and deduct the number of points accordingly."

Most candidates produced a spreadsheet solution that met the requirements of the scenario. A significant minority of candidates limited their marks as implementations restricted the number of staff that could be added to the payroll system and presented summaries listing all employees' pay details rather than the individual documents that would be required in real life.

TESTING

Most candidates achieved some marks in this section of the work. Many candidates failed to test the accuracy of their calculations appropriately. Thorough testing of the logic and the outputs from the systems would lead to candidates scoring higher marks in this section. A significant minority did not test the layout and formatting of the outputs.

DOCUMENTATION

Most candidates produced good screen-based instructions for the use of both the database and spreadsheet solutions. However, many candidates failed to produce technical documentation that provided sufficient detail to allow a competent third party to carry out maintenance of the systems.

REVIEW

Candidates who had produced a specification that included measurable objectives completed this section to a good standard. A significant minority of candidates did not comment on their own performance and changes of approach effectively and would benefit from keeping a record of their progress whilst completing the design and implementation sections.

PORTFOLIO

The majority of candidates produce good portfolios to showcase their work. A significant minority of candidates failed to provide a context for the solutions and supporting evidence resulting and/or the links to products and supporting evidence did not function correctly.

Summary of key points

- Some candidates did not have the basic database and spreadsheet skills to perform well in this unit. A significant focus should be placed on developing these basic skills. Candidates should also be encouraged to adopt a 'real world approach' to their work and consider whether decisions they are making would be acceptable in practice.

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AICT 3 E PROJECT

General Comments

This was the first time this unit assessment had been set for the strengthened specification.

Comments on individual questions/sections

Problem Definition

Most candidates were able to reassess the Problem Definition in light of the Revised Client Requirements and update the document accordingly. Many centres encouraged their candidates to show all changes that occurred in the controlled time in a different colour to aid both the Centre marking and the moderation process.

In the best examples, candidates were able to assess the impact of the Revised Client Requirements on the whole solution and updated the whole document accordingly. This is something that Centres should encourage. In other cases, candidates simply reworded the Revised Client Requirements and bolted this onto the end of their document.

Project Organisation

In most cases, there was good use of the project management software used by Centres. In a small number of cases, candidates used this software as a means of recording what they had done, rather than a forward planning tool. In other words, they were using the software more as a diary rather than a project management tool and this needs to be strongly discouraged.

Candidates are expected to use the project management software to plan how they expect to use the fifteen hours' controlled time and this serves as the baseline plan. In this plan, they should consider the main tasks, sub-tasks, critical path including predecessors and any resources that may be needed, along with any checkpoints and contingencies that may be appropriate.

As the baseline plan changes as the Revised Client Requirements are introduced, candidates must update their plan accordingly. Similarly, as candidates progress through the controlled time, they will need to update their plan as some sub-tasks take less time than expected and some will take more. Candidates must also communicate their progress, preferably by using the 'notes' section of the project management software. This should not simply be an account of what they have done, but should consider the consequences of, for example, a sub-task taking longer than expected and explain how they will make up this time.

As this is a project management unit, it is expected that candidates use proper project management software. Centres typically use Microsoft Project as a paid solution, or Gantt Project as a free solution. Candidates must not use generic software (e.g. Microsoft Excel) to create Gantt charts as this is not considered effective project management and nor does it give candidates opportunities to use some of the features outlined above.

The Project

There were some excellent, imaginative and creative solutions to the Revised Client Requirements. There were also some superficial solutions, but many candidates were able to produce solutions which embedded the requirements for membership introductions discounting into their original models.

Review

In some cases, the review was more of a reflective 'diary' of what happened during the fifteen-hour controlled conditions rather than a focussed review using proper evaluative writing at the standard required at A2 level. Most Centres ensured that candidates covered all of the headings from the Specification which is encouraging, but moving forward need to work with candidates on a more evaluative style of writing.

Presentation

Centres are asked to take care in ensuring that the links within the ePortfolio are not pointing to networked drives and that the ePortfolio works as expected after burning it to the disk. In some cases, this problem resulted in centres awarding five marks for ePortfolios which worked whilst the work was on the network but that failed to function properly after transferring the work to disk.

A small number of Centres did not use the given template for the ePortfolio and preferred to have candidates create unnecessarily complex html ePortfolios. This was a distraction for the candidates and often resulted in broken links. Furthermore, candidates would be better employed focussing their efforts on work that will directly yield higher marks.

Candidates must be discouraged from password-protecting documents that are linked from their ePortfolios.

Summary of key points

- This unit assessment was generally well done with some excellent work being produced. Centres are advised to reinforce the fact that the unit is about project management and this needs emphasis both in terms of the time allocation and provision of suitable software.

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AICT 4 E STUDIO

General Comments

This was the more popular of the A2 project units and many very good eportfolios of work were seen. Centres had generally ensured that their candidates had access to a range of suitable software and the skills to produce effective graphic and multimedia products.

Comments on individual questions/sections

The unit requires candidates to produce both graphic and multimedia products and, for this series, was based on the 'mediAndmore' scenario. The requirements of the scenario were presented under the following headings;

Requirements Specification

Most candidates scored well in this section, producing an accurate summary describing the purpose of the campaign and listing a series of success criteria based on the given campaign objectives. As in previous years identifying success criteria that were both realistic and measurable proved to be a difficulty and candidates were not penalised at moderation if this was not fully achieved.

Most candidates produced test plans that provided for objective testing, where this was possible e.g. length of video, navigation of website etc.

Graphic Design

Most candidates addressed the requirements to include details of elements for further development and demonstrated their knowledge of the available software by identifying the tools and techniques they intended to use in the development of their work.

Multimedia Design

Storyboards and timelines for the design of multimedia products were generally reasonably well done, although details of camera positions, pans and zooms were rarely seen. Many candidates identified the tools and techniques they intended to use in the development of their video advert and animation.

Graphic Products

Most candidates provided screen shots that confirmed the software used and some extensive reports, comprising step-by-step screen shots of the production process were seen. The most successful candidates were more selective and presented screen shots to demonstrate significant developments and the use of software tools that they had found to be particularly effective.

The set of graphic products for the mediAndmore campaign comprised;

Vector-based drawing of an original design for a mediAndmore logo.

Successful candidates produced designs that were clearly related to the scenario and included graphic features that set a theme for the campaign products.

Design for a backdrop to be used for a scene in a period drama, comprising

- *Vector-based 2D line drawing of an internal wall in a 'period grand house'*
- *Version of the 2D drawing with added colours, shadows and lighting effects*
- *Representation showing the backdrop in use.*

Some very detailed 2D line drawings were seen which presented suitable and well-chosen room features. The addition of shadows and lighting effects did not often produce the intended effect of adding depth to the drawings, and some candidates demonstrated a poor sense of scale when producing the representation of their designs in use, with foreground elements not matching other elements added to provide context.

Paper-based products combining text and image. A set of three wall posters:

- *A mediAndmore poster advertising a light painting workshop*
- *A mediAndmore poster advertising a workshop on stop frame animation*
- *A mediAndmore poster advertising a workshop about making documentaries.*

The posters were often the most successful of the graphic products, with several effective combinations of text and image over suitable backgrounds and with some candidates making good use of distortion to shape images of their graphics and create realistic representations of the products in use and several examples where layering had been used to provide foreground features, thereby further enhancing the final representations.

Less successful candidates did not produce a linked set of posters, based on a template, as suggested and some weak representations were seen where images of the posters had been distorted to fit a selected background.

Designs for three promotional accessories to be presented to students attending a workshop:

- *mediAndmore 'directors' tee-shirt*
- *mediAndmore 'star' sunglasses*
- *mediAndmore 'extras' shoulder bag.*

For this scenario the representations of the promotional accessories in use provided opportunities to demonstrate techniques such as control of transparency and shadow, and features such as texture and reflections. Many effective and well-presented designs were seen.

Less successful candidates presented simple designs for the accessories and demonstrated limited software skills by superimposing their logos onto images of products created by others, with little additional editing.

Multimedia products

The set of multimedia products for the mediAndmore campaign comprised;

20 - 25 second timeline animation illustrating an opening sequence for a sci-fi cartoon.

Most candidates produced tween based animations as required, although, as in previous series several short animations that relied on motion paths and did not feature purpose made assets with moving parts were presented.

45 - 60 second promo movie showing stills/clips from a music video workshop and including feedback from students who have taken part.

A wide range of approaches to the authoring of the promotional movie were presented. Many successful examples were seen that involved both original and secondary video sequences, with well-timed transitions and synchronised music, and some with voice over for at least some of the content.

mediAndmore website, with external CSS, to comprise:

- *Home page featuring the logo, introductory text and the promo movie.*
- *Workshops page, including roll-over images of the three wall posters and a scrolling gallery of the images of the three promotional accessories in use and the representation of the period drama backdrop.*
- *Animation page featuring the sci-fi animation and information on animation techniques*
- *Careers page, with a description of the diverse career opportunities available in multimedia, three typical job vacancy adverts and a validated form to enable the user to request further details.*

The hints and tips section of the assignment brief state that the scrolling image gallery on the Workshops page and the validation of the form on the Careers page should be coded using JavaScript. The form should provide text boxes for name, e-mail address and a message and include a submit button to run the validation code.

Most candidates produced a suitable website of 4 pages, as required, although some missed the stated requirement to base their site on an external style sheet and several had not included any original validation rules on the form.

Successful candidates addressed all the stated requirements for content and demonstrated skill in the use of roll-overs, transitions etc. to produce web pages with well-designed navigational features, carefully chosen colour schemes, clear fonts and consistent layouts.

However, as in previous series, some examples were seen where navigation between pages did not work as intended, small default fonts had been used and objects had not been placed on the pages to achieve a coherent layout. There were also a limited number of examples where images and other assets could not display because they had been moved after saving of the web pages.

Review

Produce a review document that evaluates and suggests improvements covering:

- *the final products*
- *the tools and techniques used*
- *own performance*

As for other units, the review was well done in examples where the evaluation of the final products included some consideration of end user feedback, leading to suggestions for further improvement. The reviews of the tools and techniques used ranged from simple descriptions of process to the consideration of the effectiveness of a range of software facilities, as required for the higher marks.

The most successful candidates commented on their own performance and identified changes of approach likely to lead to improvement of performance and / or outcomes. They did not include comments about lack of time or effort.

ePortfolio

Produce an eportfolio to provide a context and showcase for the campaign products.

Most candidates produced a functional eportfolio that provided access to the products and supporting evidence.

Several of the eportfolios provided limited context but most were easy to navigate. The more successful candidates targeted their work towards the assessor and design pages that were clear and that highlighted their final products.

Summary of key points

- Some good work was produced for this unit with the most successful students have honed their skills through practice and access to suitable software. Centres should encourage students to carry out work which directly to the tasks. Some students created designs which did not necessarily relate to the scenario in question. Students should also strive to gain the best marks possible through demonstrating their e Studio skills, rather than carrying out work which only meets the assessment requirements in a basic way.

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AICT 5 E CODE

General Comments

This is the first series for the strengthened coding unit AICT 5. The entry for this unit was relatively low and was from centres that able to support their candidates to address the programming aspects of the unit specification.

The focus of the unit remains on coding a function solution but is now focussed on a given scenario. The scenario was regarded as challenging, but many candidates were able to produce functional solutions that fulfilled the requirements of the given task.

Most of the candidates had chosen to produce their programs using Visual Basic. In most cases candidates had produced good quality solutions that were appropriate for audience and purpose. Several excellent examples of original learning systems were seen, with solutions providing the required functionality. In general, the candidates' work was of a pleasing standard.

Comments on individual questions/sections

Problem Definition

Most candidates had undertaken an analysis of the given scenario and were able to use this plus research of similar commercial systems to form a problem definition that identified the broad aims and limitations for the proposed solution to the problem.

The majority of the candidates were able to produce detailed problem definitions and to form clear and measureable criteria for the evaluation of the finished booking system.

Design a software package

Many candidates produced designs that were sufficiently detailed to allow the system to be implemented by a competent third party. Some candidates produced comprehensive designs for required systems that were clearly suitable for the intended purpose, with due consideration of data, processes and user interaction.

Create a software package

A range of successful solutions to the problem was seen. Most candidates were able to produce systems that were functional and many produced systems that included well thought out features, including well designed interfaces and good data handling routines.

Tutorial

Some excellent tutorials were seen. In these examples many candidates had made good use of the on-screen environment to demonstrate the use of their systems and had ensured that the tutorials were directed towards their intended audiences.

Test a software package

Many candidates were able to design effective test data to test both the functionality and logic of their implemented systems, although, as in previous series, several examples were seen, where test documents lacked the discussion of results required to access the higher marks for this section.

Review

This section was an area of overall improvement with fewer candidates providing reviews that comprised narrative rather than evaluative content and with most candidates demonstrating an awareness of the requirements of the specification for the review for this unit.

In a minority of cases candidates failed to cover all five of the areas contained in section 5.8 of the specification, but simply provided a narrative description of their work.

Eportfolio

Most candidates provided functional eportfolios that had been themed to reflect the context of their software package. In almost all cases the ePortfolio allowed access to the completed systems and all supporting evidence.

Summary of key points

- Candidates generally produced very good work for this unit with some students submitting excellent examples. The main advice to teachers would be to carry on the approaches used, the only two areas where some candidates did not perform as well were Testing and the review.



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