ASSESSMENT and QUALIFICATIONS ALLIANCE

General Certificate of Secondary Education

Information and Communication Technology 3522/3528

Specification B

3522/3528/C Coursework

Report on the Examination

2008 examination - June series

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The Coursework (3522/C) & (3528/C)

General

Candidates' work was usually marked to a consistently high degree of accuracy with some helpful annotation indicating where marks had been awarded. However, sometimes marking was not in line with the AQA standard as exemplified at the coursework standardisation meetings.

The coursework submitted was generally considered to be of higher quality than in previous years. There has been a gradual and noticeable improvement in the presentation of the coursework over recent years and this trend appears to be continuing.

Appropriateness of Tasks

Coursework tasks should allow candidates to demonstrate breadth and depth in their ICT capability by creating an identifiable system that can be used by others. Some centres restricted candidates' choices whilst others obviously encouraged candidates to become involved in the selection of the task. The latter approach allows candidates more opportunities to demonstrate their strengths and knowledge of the tasks, and produce topics of personal interest.

Many centres make good use of the coursework support materials supplied by AQA to provide teachers with guidance on the marking of coursework. It is not expected that candidates will have access to this material as this appears to encourage plagiarism, and centres will be aware that no marks can be awarded for coursework which is not the candidate's own work.

Coursework tasks that were awarded high marks:

- were within the capabilities and aptitudes of the candidate
- enabled candidates to demonstrate the full range of their skills, knowledge and understanding
- were sufficiently restricted to allow satisfactory completion of the tasks
- were designed for others to use
- were reusable systems
- kept to the point of the task and were not distracted by sub-tasks that were irrelevant to the solution of the problem being attempted
- had full evidence with annotation by assessors to support the marks awarded
- used a report structure based upon the assessment criteria headings

Theme 1: Communicating and Handling Information

Tasks addressing the theme of *Communicating and Handling Information* were usually appropriate with a database solution usually being the preferred option although a few centres used presentation software.

Theme 2: Controlling, Measuring and Modelling

The theme of *Controlling, Measuring and Modelling* was mainly covered with submissions based on spreadsheet models. There were fewer control tasks submitted this year and very few data logging or measurement tasks.

Some centres still incorrectly believe that the use of a spreadsheet always constitutes a model. Care needs to be taken to ensure that any spreadsheet based tasks submitted within this theme are modelling tasks and not simply data handling tasks. Modelling requires the use of functions and/or formulae that can alter the outputs when the input variables are changed, and the production of "what if" scenarios. In order to help distinguish between a (spreadsheet) model and a data handling task it is recommended that candidates run their model a number of times with different input parameters producing a range of outputs. The increasing use of the 'goal seek' facility is welcomed. Candidates cannot be awarded the full range of marks within this theme if they do not produce a modelling task.

Internal Standardisation at the Centre

Most centres have effective internal standardisation procedures in place. Where more than one teacher is involved in the delivery of the course, centres are required to carry out internal standardisation of marking before the marks are submitted, and there was usually good evidence of this. Where all of the work within a centre has not been marked to the same standard, the entire centre's marks often have to be adjusted by moderators.

Provision of Information for the Moderator

Moderators find it helpful when centres provide background information and annotate their coursework.

Most centres provide the following and this helps the moderation process:

- clear and accurate mark sheets
- details of the introduction to the task, including copies of any class handouts and support materials including templates
- a signed Candidate Record Form attached to the front of each candidate's coursework with total marks corresponding to those on the mark sheets
- a cover sheet for each task which clearly states the theme that the task addresses
- annotation on the candidates' work indicating where and why each mark has been awarded with reference to each coursework assessment criterion as indicated in the specification

Awarding of Marks

Most centres are aware that marks can only be awarded when evidence is provided to support that award. A very few centres awarded full marks based on trivial explanations and/or little evidence. The assessment criteria for the award of marks are clearly set out within the specification and the support materials provide more detailed explanations of what evidence deserves credit.

Comments in relation to the individual Assessment Criteria

Candidates should be encouraged to adopt a systems analysis approach to their work and design a system to solve a problem that can be used by a third party to meet a defined and identifiable need.

A: Description of the Task to be attempted

The description should provide a good understanding of what is involved within the problem. Some descriptions lacked detail and clarity. The main focus should be on the problem rather than the proposed solution.

Candidates must produce their own original work and therefore cannot be awarded marks for descriptions which have been provided by the centre.

B: Analysis

Candidates who did this section well tended to analyse the task and provide a clear understanding and detailed analysis of what is involved within the problem. However many candidates only provided a cursory analysis without demonstrating an understanding of the existing system and problem.

Although a list of possible methods that could be employed to solve the problem was often provided, an insight into at least two of these methods is required for marks to be awarded. Any such methods should be described in detail and be relevant to the particular problem being solved.

C: Specification

Most candidates were able to provide some reasonable evaluation criteria with many also giving appropriate reasons relevant to the task. Many candidates provided actual examples clearly related to their specific task. Candidates cannot gain credit for objectives provided by the centre or for generic objectives.

To be awarded full marks candidates should provide a detailed and reasoned specification which demonstrates depth and sophistication in their choice of evaluation criteria. Good specifications often helped candidates provide high quality responses within the Testing and Evaluation sections.

D: Design of the ICT System

In this section, candidates should develop a planned design of the ICT system and describe the relationship between various parts of the solution. Credit for the design of data collection forms, file structures, output reports, screen layouts, etc. is given within the Implementation section.

Some candidates described the data flow through the proposed new system in detail, often with the aid of a data flow diagram. These candidates tended to be awarded the higher marks. Good candidates also showed the relationship between the various parts of the solution by including detailed annotated data flow diagrams, systems diagrams, structure diagrams, detailed input/process/output tables, and/or algorithms.

Details and time frames of how and when candidates intend to proceed with their coursework should not be included.

E: Implementation

Justification of the decisions made by candidates when implementing their solutions is a strong theme running through these sections especially for the award of the higher marks within each section. A few centres awarded marks where there was no evidence or only trivial justification was provided.

E(i): Hardware Resources required

These marks are awarded for the selection of appropriate computer hardware for the proposed system.

There were some excellent descriptions with many candidates choosing to use the Internet to research relevant hardware. Some candidates visited commercial websites and used the services provided to compare the specifications of various items of hardware. The production of such lists alone cannot be awarded marks. Candidates who do not justify their choice of hardware cannot be awarded full marks. A few candidates who simply made lists without making a relevant selection or described generic hardware (e.g. mouse, keyboard, computer monitor) without relating it to their task gained no marks. Most candidates used the information from these lists to make selections and to justify their choices commenting on relevant aspects such as the minimum backing storage capacity, the minimum speed of processor, etc., and these candidates were awarded marks. Justifications should include reference to the proposed solution, the specification and to the needs of the end user.

E(ii): Software Resources required

In this section candidates are required to select appropriate computer application software and to justify their choice.

A considerable number of candidates started off by selecting and justifying their choice of operating system. Whilst probably a valuable exercise in its own right, no marks were gained as the assessment criteria clearly refer to application software.

Most candidates were able to select appropriate application software. Sometimes candidates inappropriately identified an integrated package as a possible solution. Any associated justifications should make reference to the problem being solved and the needs of the end user.

E(iii): Data Collection, Data Capture and Input

Some excellent work was again submitted in this section. Most candidates produced good paper-based or electronic data collection forms although sometimes there was little relevant justification for their design. The input forms for database work were particularly impressive and these often had clear justifications for their design. Candidates occasionally gave thought to data entry when designing spreadsheets by using features such as spinners, drop down lists, comments or even simply the highlighting of cells which required data input.

However, many candidates did not always provide an explanation as to how data capture forms and data entry screens satisfied the needs of the system, or any indication that these had been designed with regard to clarity, ease of data entry, and/or ease of transfer to the computerised system.

E(iv): Data Verification and/or Validation

Many candidates prefaced this section with general definitions for validation and verification and various examples which were not related to the task.

Verification was usually inadequately covered by general statements such as checking the data entries by eye or proof reading on the screen. There were only a few candidates who provided the required evidence for verification by supplying annotated output (such as screenshots or reports) and associated copies of the original documents (such as the completed data entry form) referencing the corrections necessary.

The extensive validation facilities built into most modern software were sometimes well used by candidates. The better candidates tended to provide explanations and evidence of at least two different validation techniques including screenshots of:

- the validation being set up
- invalid data being entered
- an associated customised error message

Candidates who did not provide the evidence of the understanding and use of more than one different technique could not obtain full marks.

E(v): Data and/or Program Structures

This section was well done by the vast majority of candidates with some good justifications given for particular data structures or formulae used. Centres should note that it is necessary to ensure that row and column headers in spreadsheets are printed in order for formulae to be checked. In database work, the selection of table properties such as field lengths and data types was not always well explained. Many candidates correctly included the evidence for the creation of mail merge templates and macros.

Although the evidence for this section was sometimes mistakenly placed in the Design section, candidates were not disadvantaged because of this and credit was still given, but centres should ensure that the moderator is made aware of this.

E(vi): Output Format

This section was well done, particularly in database work where many candidates designed appropriate query-based reports and mail merge documents. Despite the guidance in the support materials, some centres mistakenly gave two marks for the simple production of default printouts without any attempt being made to design specific customised output formats. Candidates who received the higher marks often annotated their printouts to explain how the design of these related to their solution.

With modelling tasks, where spreadsheets are used, candidates are expected to format the spreadsheet differently from the default settings. Again, candidates who

received the higher marks often annotated relevant graphical output to indicate why a particular type of chart had been produced and how it related to the solution.

F: Testing

Many candidates demonstrated a clear strategy by producing a test plan in table format indicating the expected outcome referenced to screenshots showing the actual outcome.

Candidates should be encouraged to produce a systematic comprehensive strategy for testing their solution using valid, invalid and extreme data where the outcome is known so that problems with their system can be identified and corrected. The test data and the expected outcome should be stated and the annotated evidence should clearly show the use of the same test data. Those candidates who had clearly and systematically designed a comprehensive testing strategy and explained it in full obtained the higher marks. These candidates often used relevant evaluation criteria from their specification and also included testing of their validation techniques.

The small number of candidates who provided a test plan but no evidence that tests had been carried out gained no marks. Screenshots are acceptable evidence.

G: User Documentation

User guides were often of high quality and well presented. As separate and clearly identifiable user documentation is necessary many candidates used their desk top publishing skills to produce some manuals in booklet form. These manuals often included a contents list, page numbers, sensible headings, different sections, frequent and appropriate screen shots, and troubleshooting FAQs. A few candidates used presentation software to produce some impressive guides.

Candidates who provided user documentation showing how to create, for example, a database rather than how to use the new database system, could not be awarded marks. It is important to take into account that the system has been designed for a third party who may be an unfamiliar user of the system created. Consequently, instructions for the use of the system must be comprehensive.

Technical documentation should cover areas that a normal user would not be expected to use such as changing validation rules, altering formulae, adding links, etc.

H: Evaluation

The inclusion of suitable evaluation criteria in the specification and a comprehensive and systematic testing strategy, helped some candidates to produce very good evaluations. The best evaluations also made reference to test results and described relevant refinements to their system which could usefully be employed in future.

Many candidates copied and pasted their specification into the evaluation section, but not all went on to comment on the effectiveness of their solution against each of the evaluation criteria. Those candidates who just copied the evaluation criteria and placed ticks next to each criterion or made simple comments such as “this was done” were considered to have made a cursory evaluation and were not awarded marks.

J: Communication within the report

The standard of the presentation of coursework continues to improve each year.

Many candidates were rewarded for the clarity of their communication and a good standard of spelling, punctuation and grammar. The majority of candidates used the structure of the assessment criteria to present their report in sections and this helped them communicate effectively. The use of word processing usually resulted in the presentation of high quality reports, appropriately formatted, and containing a varied range of techniques. The best reports often made good use of standard word processing facilities such as page numbering, indexes, headers and footers. Nearly all candidates selected an appropriate formal font and font size.

Administration

Most centres submitted candidates' marks and coursework by the published deadline. It was disappointing that other centres did not to submit their marks by the deadline and as a result slowed the moderation process for their centre. The resulting delay could lead to candidates not receiving their grades on the published date.

The Candidate Record Forms were generally completed accurately and clearly which greatly assisted the moderation process. Centres should be careful to avoid arithmetic errors when totalling a candidate's marks and transcription errors when transferring marks to the Candidate Mark Forms. Most Candidate Record Forms were signed by both candidate and teacher.

Candidate Mark Forms were usually completed according to the supplied instructions but the moderation process was occasionally hampered by centres not displaying marks clearly on both the yellow and pink copies submitted to the moderator. Some centres also provided the moderator with a very useful rank order list.

A few centres did not include a Centre Declaration Form to indicate that internal moderation had taken place. Two separate Centre Declaration Forms are required when centres enter candidates for both Full Course and Short Course.

Most centres sent a correct sample to the moderator as indicated in the AQA regulations with most sorting the sample into candidate number order as requested.

The vast majority of centres followed previous recommendations that candidates' coursework should be securely bound, preferably using a treasury tag in the top left corner.

Advice

Centres are reminded that advice can be obtained from the specialist coursework advisers which AQA has nominated to assist centres with any matters relating to coursework. Centre visits are possible in certain instances. Coursework support material is also available.

Further Information

Information on any of the issues raised above can be obtained from:

1. The specification
2. The specialist coursework advisers which AQA has nominated to assist centres with any matters relating to coursework
3. The exemplar coursework material and the relevant commentaries
4 The coursework support material
5. The coursework standardisation meetings

Details are available on www.aqa.org.uk or by e-mailing ict-subjects@aqa.org.uk

Mark Ranges and Award of Results

Grade Boundaries and Cumulative Percentage Grades are available on the Results Statistics page of the AQA Website.