CONTENTS

Cambridge Diploma in Computing - Advanced

COMPUTER SYSTEMS, COMMUNICATIONS AND SOFTWARE

Module 5216

Core

General comments

The examination was a good test of the candidate's ability with a good range of questions which provided accessible material for all whilst remaining challenging for those candidates with particularly high ability. It was pleasing to note that there were a number of candidates in this category and that the standard of the scripts were of a high standard.

There were maximum marks gained in all questions by at least some candidates which added further weight to the assumption that the paper was fair to candidates.

There was little evidence that the language of the questions caused any problems, although in **Question 14** some candidates interpreted the phrase "...calls at the customer's house..." to mean that a phone call was made. This made no sense in the context of the question. There was some evidence of time trouble for a few candidates which was always as a result of poor exam technique earlier in the paper. In order to examine the specification this paper is always going to use up the 2 hours allocated to it, and candidates must learn to use the relationship between the marks and the time. 90 marks over 2 hours means roughly 1 mark per minute when reading and understanding time are taken into account. This means that **Question 1** part **(a)** is designed to take 2 minutes to answer, some candidates were producing a side of A4 in their answer. It is these candidates who will suffer at the end of the paper.

Presentation by the candidates was of a high standard and Centres generally can be proud of their candidates' attitude toward the exam. A few candidates are beginning to use a red pen to highlight parts of their answers. Whilst applauding the intention, the Examiners must question whether this is a suitable use of their time and must ask that coloured pen should not be used as it confuses the marking process. If candidates particularly want to do this then pencil would be a suitable option which will not interfere with the Examiners' annotation of scripts. It may interest Centres to know that at different stages of the examinations process an individual script may be marked in green, brown, and purple, in addition to the original red and the colours that the candidate has chosen.

Comments on specific questions

Question 1

A simple starter question which was aimed at all candidates. In that respect it worked well with all candidates being able to score and the number of candidates getting the two types the wrong way round being mercifully small. However, too many candidates wrote far too much in their answers meaning that they may well be short of time on later questions. Candidates must be aware that when there is one mark for a question anything that is written after scoring the mark is a waste of time.

Question 2

Another standard question with the candidates giving the standard answers to part **(b)** scoring full marks with ease. However, there are still too many Centres where the candidates do not use the standard answers. While not wanting to stifle their imaginations, candidates must be careful if they offer a non standard answer. The favourite this year was an ATM as an example of both. No problem with this as long as the explanation of its processing was clear, but too many do not understand that the processing of data in the ATM application is actually a very complex type of processing, well beyond this course.

Centres are directed to the published mark scheme for an indication of the types of response that the Examiners are expecting, for this and all other questions.

Question 3

Most candidates were able to score well here.

There are a number of methods of modifying the algorithms, any one of which was acceptable as long as they gave the correct output.

Question 4

It was disappointing to see the number of candidates who were unable to answer this question satisfactorily. The specification clearly states (1.4.h) “estimate the size of a file”. This is considered a basic skill which, from experience, candidates find easy to do. Indeed the majority of candidates obtained full marks, but there were too many, largely Centre based, where the candidates simply did not attempt the question, probably because they had not been introduced to the concept.

Question 5

Well answered, although the majority were not aware of the compiler producing diagnostics because it had found errors in the source code.

Many candidates spoiled their answer to the process that connects the source code and object code by mentioning the interpreter. The interpreter does not produce an object code. This was not penalised at the level of this paper, but it is a distinction that Centres should stress when covering the idea of a translator program and it gives a good example of the difference between the compiler and interpreter.

Question 6

Answers here tended to be poor. Most candidates were able to suggest the basic concept of time sharing of the processor but could not expand it. In part **(b)** the majority of candidates could not see past a mistaken insistance that a stand alone system would be more expensive to think about the important point of how the data files would be managed.

Question 7

A more advanced question aimed at the better candidates. In that respect this question was effective in that it acted as a good discriminator between candidates. The concepts tested here are complex and difficult for candidates to understand. The Examiners were not surprised when this question caused difficulty to many candidates and Centres should not be surprised if the majority of their candidates find difficulty in relating the concepts.

Question 8

Many candidates interpreted the idea of a “bit rate” as being a piece of hardware and consequently scored no marks. Most were able to say that the bit rate was something to do with the speed of transmission of data but then got caught up in the difference between serial and parallel data transmission or duplex and simplex rather than talking about the data files themselves.

Question 9

Great care was taken when marking this question to make allowance of the complicated nature of the English necessary to give a model definition. Examiners allowed answers where it was obvious that the candidate knew what they meant even if they had difficulty expressing it. As Examiners always attempt to do this, while ensuring they do not read into an answer something that is not really there.

Question 10

The question asks for three rules that would go towards making up a protocol, not three protocols. The paper will never ask for specific protocols, they are not part of the specification. Those candidates who read the question correctly invariably scored full marks.

Question 11

The question asked for diagrams used in the analysis stage. This means that the cascade diagram explaining the full life cycle are not acceptable. Those that did not choose diagrams to describe the life cycle scored particularly well here.

Question 12

Very poor. The difference is simply that passive systems cannot be modified by the user while interactive systems can. Answers tended to be Centre based. The second part of the question was, again, far less well attempted than had been expected. Individual laws are not expected and neither is a long rambling answer about more and more complicated passwords. Candidates seem to think that the way to protect files is to let nobody see them. This approach rather negates the reason for having them in the first place.

This question was meant to be a simple question in the final part of the paper. In reality it became a big discriminator as it had a lot of marks associated with it. Centres should be aware that a very important part of the specification is section 1.12. Many Teachers see it as a sort of 'add-on' to the rest of the specification, but this is a mistaken attitude. The need for candidates to understand the effect on society is crucial to this subject, as illustrated by the large number of marks here and in **Question 14**.

Question 13

Very well answered, and obviously well taught. The normal result of a question like this is that most candidates talk about drop down menus on well known proprietary software. There were very few responses of that nature this time.

Question 14

Those candidates who realised that the representative calls at the house scored very well. Others who interpreted the question as a phone call were unable to talk about doing anything but sending out an electronic brochure, in effect.

Question 15

Well answered except for the widespread us of 'user guide' as an item of user documentation.

One general area of misunderstanding is a failure to split the people that the two types are aimed at. Most candidates believe that the user documentation helps you to work the system while the technical documentation helps you to mend it. In reality two different groups of people are aimed for here. The first is the check out assistant in the supermarket who does not need to know how it works but does need to know what to do when the system will not read a damaged bar code. The second is the computer literate person employed by the supermarket 3 years in the future to increase the capacity of the stock file because the store is expanding and selling more items.

STRUCTURED PRACTICAL TASKS

Module 5217

Core

General comments

Many of the candidates demonstrated good subject knowledge in answering the questions, and, although the tasks allowed for some differentiation in ability, the tasks were well within the scope of the candidates.

In most Centres, the layout and method of presentation of the coursework allowed for easy analysis of the answers provided by the candidates. Although **Question 1** obviously needed outputs from the computer to provide the answers required, the answers to **Questions 2** and **3** could have been handwritten, although computer printouts for these types of answers are preferable.

It is very important for Centres to use the individual assessment sheet, as this is very helpful during Moderation to indicate where marks are gained for each question, and the majority of Centres are thanked for doing so. Centres should also note that the annotation of scripts by the Centre's Assessors is also welcomed, and all Centres should be encouraged to do this in the future, since this gives a clear indication on the scripts where the marks have been awarded. Centres that have already adopted this good practice are thanked for doing so.

Centres are reminded that the answers to the practical tasks need to be submitted for assessment as hard copy computer printouts. All evidence to be assessed and Moderated must be in the form of word-processed documents, program listings, algorithm listings, diagrams or screen shots etc. Electronically held documentation (i.e. floppy disk, or CD ROM) cannot be submitted as evidence for moderation purposes. Unfortunately, a few Centres used this method to submit work for Moderation, and, in the absence of any hard copy evidence, the candidate's marks had to be downgraded accordingly. Moderation of the Centre's assessment of candidates work can only take place when the candidate provides suitable evidence.

Comments on specific questions

Question 1

(a) Although candidates constructed tables for their database in answering this question, only the minority of candidates specifically gave suitable answers for this part of the question. The question did require candidates to consider the design of the database and this includes the consideration of the tables required, the data types and key fields within those tables, and the linking of the two tables. In answers where these points were not explicitly addressed, marks were lost.

(b) In the majority of answers, the candidates were able to achieve maximum marks for this section. These marks were gained from having a common design for each screen, with screens for input and output along with an initial menu screen. Very few candidates provided a separate screen for amendments.

(c) Again, the majority of candidates achieved high marks for this section, although fewer achieved all five marks. Whilst many candidates provided evidence of the selection and output of relevant data as well as a suitable screen design, many candidates did not provide evidence of a validation routine when inputting data, a method for coping with two identical names or a method for coping with multiple jobs.

(d) The majority of candidates achieved good marks for this section, but few gained full marks. Common omissions to the User Guide included hardware requirements, how to start and shut down the system and methods of backing up the data.

Question 2

(a)(i) The majority of candidates answered this part well, although, in some cases, there was lack of evidence of a trace being made whilst working through the algorithm. In these cases, a mark could not be awarded.

(ii) The comments for this part of the question are the same as those for part **(i)**.

(b) Most candidates gained full marks here.

(c) Few candidates achieved full marks for this part of the question. A common omission was not stating that duplicated numbers were retained within the new array.

Question 3

(a) The large majority of candidates were able to provide evidence of a Jackson diagram (or similar), with all the necessary components in order to achieve full marks for this part of the question.

(b) The majority of candidates achieved very high marks for this part of the question. Solutions to the problem were presented either as an algorithm or as a computer program in Pascal. Both forms of answer were acceptable, provided there was sufficient evidence to gain marks for each of the points listed in the individual assessment sheet provided by Cambridge International Examinations as part of the assessment procedures.

FURTHER SYSTEMS AND SOFTWARE

Module 5218

Core

General comments

A few candidates struggled to come to terms with the expectations of the paper. Although they appeared to understand the questions, most used technical phrases inaccurately or used the wrong phrases. The candidates did a little better than last summer's candidates. Since the paper aims to cover the whole syllabus in two years, any area in the specification may be covered. It was disappointing that questions requiring a bookwork type answer, such as **Questions 2** and **8**, were so poorly answered. On the other hand it was good to see that in more open questions, such as **5** and **6**, candidates are starting to think around the scenario presented.

Comments on specific questions

Question 1

Here in particular the candidates' vague knowledge of computing showed up.

(a) No candidate knew exactly where an operating system is stored, though all had a rough idea.

(b) Candidates' answers were very general, and did not correspond to the question.

Question 2

Most answers seemed to be sensible guesses to do with loading programs without realising that it is a specific term.

Question 3

Most candidates knew something about this topic.

Question 4

The search that was being looked for is the simplest one there is, but candidates wanted to use an exotic SORT, often a quick sort.

Perhaps that was because it is asked for in part **(b)**, but in that part no candidate knew how it worked.

Question 5

Some of the answers to **(a)** and **(b)** were quite good.

Question 6

Several candidates gave good answers to **(a)** and **(b)**. In **(d)** most candidates knew that the equipment was a router without knowing the problem that it solved.

Question 7

No candidate could answer this accurately. Some amazing sensors were invented.

Question 8

One or two candidates had some idea of these topics.

Question 9

Often well done.

PROGRAMMING PROJECT

Module 5219

Core

There were no entries for this Module.