



General Certificate in Education

Computing 6510

CPT5 Advanced Systems Development

Report on the Examination

2007 examination - June series

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General

Very few candidates are well prepared on all the topics of the specification. Many have good knowledge on some topics but very little on others.

Careful reading of the question and then answering in context is a skill that candidates need to practice more. The lack of this skill was particularly noticeable in question 3 which asked what maintenance documentation the programmer undertaking corrective maintenance would expect to find. Too many candidates referred to the user and user documentation, rather than the programmer and the maintenance documentation.

Generally, the words 'explain' and 'describe' in a question stem require answers longer than just a key term. Candidates also need to be made aware that they should give answers in the context of the question.

Question 1

Most candidates correctly used the emboldened terms to complete the diagram. However, some did not notice the significant difference between the magnetic tape and the magnetic disk files. There still seems to be a lot of confusion over the name of this type of diagram with various combinations from the correct 'system flow chart' to the definitely incorrect 'data flow diagram'. Very few candidates noticed that if a file held on magnetic disk is updated arrows need to go in both directions between process and file.

Question 2

This question was generally done well. However, few candidates saw the significance of the radio-frequency remote control. Answers worthy of credit needed to highlight the usefulness of this device over other remote controls which require the control to be in line of view of the device to be controlled. Very few candidates could suggest any use for a programmable switching unit, often expecting the user to sit at a computer to control this unit, rather than the expected answer of pre-programming the switching of lights/heating/multi-media etc according to times of day/week.

The reasons given for using any of the components was often just re-iterating the question stem (the client cannot stand easily and has limited use of their arms). Candidates need to be reminded that this will not gain credit and that further explanation is expected, such as a wheelchair user may find it difficult to open windows as they find it difficult to reach handles and push/pull.

Question 3

Most candidates gained credit for explaining that beta testing is done by selected people outside the software development company. Candidates will have recently completed their CPT6 project that requires the inclusion of maintenance documentation in the final report. However, few candidates seem to understand the purpose of the various types of information expected in maintenance documentation. Some candidates confused maintenance documentation with user documentation.

Some candidates were not able to distinguish the types of testing applicable to developed systems as opposed to those applicable during the development of a system.

Question 4

- (a) Many candidates thought wrongly that a cable-modem connection is via a telephone line. Cable in cable modem refers to cable tv. Only the best candidates stated that the speed of a cable-modem connection depends on concurrent sharing of the line with other users in the area. Most candidates knew that ADSL provides users with a broadband connection usually faster than the other connections. Very few commented on the asymmetric aspect of this type of connection: higher data rates when receiving data than when sending data. Only the best candidates stated that the speed of this type of connection is dependent on the distance from the telephone exchange. Answers explaining the cost of the connections did not gain credit.
- (b) Many answers to this part of the question were generic and did not refer to the context of the question, so did not gain credit. Candidates needed to state how the desktop computer would be linked to the laptop computers, for example by connecting all computers to a router or wireless router. How was the link to the Internet achieved? For example, the link could be made by connecting the router/desktop computer to the modem. In the case of the client-server network, candidates were required to state that either the desktop computer was set up as the server or that a dedicated server would need to be purchased. The laptop computers would act as clients, requesting files from the server.
- (c) Some candidates understood that the IP network ID for the given IP addresses would be 192.168. Few could state the correct range of available IP addresses for the desktop computer. Some candidates did not realise that the value of each of the four bytes making up an IP address could only be between 0 and 255. 0, 1 and 255 for the last byte are not useable by the desktop computer, and so the correct range is from 192.168.0.2 to 192.168.255.254. Very few candidates understood the concept of a subnet mask. Looking at the possible IP addresses in a subnet, all the bit positions that are the same will have a 1 bit in the subnet mask, 0 in the remaining bit positions. Acceptable subnet masks for this question therefore are 255.255.0.0 or 155.255.224.0 or 255.255.192.0 or 255.255.128.0.
- (d) Many candidates stated that buying antivirus software would minimise the risk of a virus. However, the software needs to be installed and used to protect against this risk. Similarly just buying a firewall is not sufficient protection against security threats. A few candidates gained credit for suggesting that encryption could be used to minimise security threats.
- (e) Few candidates noticed that there are 2 pieces of hardware required for wireless connection: a wireless access point or wireless router and a wireless network card. Most candidates could state that the advantage of a wireless connection over a cabled connection is that computers can be placed anywhere in the house but fewer noticed that this had to be within the range of the signal. Most candidates were very well informed about the disadvantages of wireless networking: the security risk and the possible interference as well as that this type of connection would be slower than a cabled connection. References to cost did not gain credit.

Question 5

- (a) Some candidates did not identify the table clearly enough. Just writing down the number 2 was ambiguous because this could have referred to Figure 2 or Table 2. Most candidates correctly identified the Recipe table as the table not in first normal form. Far fewer candidates could describe correctly the reason. Many misunderstood the idea of repeating attributes and stated that certain ingredients were stored in the table more than once. Better candidates could explain that the data in the Ingredients column was not atomic, that is, there were multiple values in the Ingredients field.
- (b) Few candidates could explain what fully normalised means. Only the best candidates could state that such tables would not contain any partial dependencies, or non-key dependencies. Most candidates knew that it is desirable to have fully normalised tables because it eliminates data inconsistency and unnecessary data duplication.
- (c) Most candidates gained credit for completing the relations Recipe and FoodItem. Many candidates listed the correct attributes for the relation RecipeIngredient, but often did not gain credit because they also included many other attributes belonging to the other relations. This highlights the fact that candidates may rote learn the reasons for having fully normalised tables (see (b) above) but can not see that their answers do not in fact reflect the concept of eliminating unnecessary data duplication. Candidates should be aware that attribute identifiers should not contain spaces. Although this did not reduce the credit of their answers this time, in future papers this may reduce marks given.
- (d) It was pleasing to see that many candidates gained high marks on this part of the question. Although this was not an easy question, most understood what was required, especially the Where part of the statement was well done. Common reasons for not gaining credit were still the prefixing of the table names with tbl. The names of the relations were clearly stated in the question part (c), and therefore these were expected to be used in the SQL statement. A minority of candidates also used the unconventional notation of attribute.tablename rather than tablename.attribute. When searching for a string value, this value must be enclosed in string delimiters. Different conventions were given credit, such as "Feta Salad" or 'Feta Salad'.

Mark Ranges and Award of Grades

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