Answers

1. A restaurant provides discount vouchers for new users who register. Users register simply by entering an email address. The restaurant is experiencing difficulties with an excessive number of registrations that use fake email accounts.

(a) Describe how verification of emails can be used to help reduce this problem. [2]

When the user enters their email address, an automated email is sent to the   
address. (1) This contains a unique link which the user must click. (1) Once the user clicks the link, the server can check that it is for the correct email address and verify   
their email address. (1)

(b) Part of the registration process requires users to enter their mobile phone number. This is important as it is used later if there is a problem with a booking for a table.

Unfortunately, many users leave this blank.

Explain **one** validation method that could be used to solve this problem. [2]

A presence check (1) could be used to make sure that a number is entered (1)  
A format check (1) could be used to make sure that the number entered conforms   
to the format of a telephone number (1)

(c) The data collected by the app is used in conjunction with sales data at the restaurant. This can then be used to track the behaviours of users.  
  
Explain **two** ways in which the business could use this data. [4]

A profile of each customer can be built up (1) so that targeted advertisements can be sent (1) Data about popular days for bookings (1) could be used to increase staff numbers / food ordered (1) By knowing a customer’s profile, targeted offers could be sent (1) e.g. for over 65s a voucher reducing the cost could be given (1) By targeting offers only to certain profiles, other customers will not feel ‘left out’ (1) which will help to keep them as happy customers/increase profit (1) Trends can be analysed (1) which can then lead to holding the correct amount of stock for any given day (1)

2. A survey company has just carried out a questionnaire on the hobbies of teenagers in the UK.  
  
A large amount of data has been produced, including the particular hobbies each person likes, how long they spend on them and where each person lives.

(a) Explain **two** ways in which the data can be verified for accuracy. [4]

Each person asked could have a different interviewer phone (1) to check answers given (1) The data could be compared with similar studies (1) to see if the results match (1) The data given could be emailed back to participants (1) for them to check   
it is correct (1) A third party, such as a parent (1) could be asked to verify the information given (1)

(b) Explain why it is important that the data collected by the questionnaire is accurate. [2]

If the data is not accurate then the results from it will not be reliable. (1)   
The data could be used by companies/government to make poor decisions (1)

(c) When the company have completed their survey and any verification, they have   
a large amount of raw data.

Discuss how the data can be presented. [6]  
  
**Tables**  
Key data can be extracted / grouped / summarised  
Using formulae/pivot tables  
Data can be formatted to make it clearer  
Data can be sorted by area of the country  
The amount of data can be summarised so that key points are more clearly made  
For example, averages can be made for different regions  
  
**Graphs / charts**  
Charts can be used to show key findings  
For instance, the number of hours spent on different kinds of hobbies  
These could be broken down by the different regions of the country  
Overall hours spent on hobbies could be put into a chart showing a comparison of different regions  
  
**Maps**  
A maps of different areas could colour different regions based on how many hours are spent on hobbies  
Different maps could be produced for each hobby to show there they are popular/unpopular  
  
Accept other appropriate ways to present data such as infographics.

| **Level** | **Mark** | **Descriptor** |
| --- | --- | --- |
| Level 0 | 0 | No rewardable material. |
| Level 1 | 1-2 | Technical vocabulary is used but it is not used appropriately to support arguments, in relation to the issues of the question.  Issues are identified but chains of reasoning are not made, leading to a superficial understanding. |
| Level 2 | 3-4 | Accurate technical vocabulary is used to support arguments but not all arguments are relevant to the issues of the question.  There is consideration of relevant issues using logical chains of reasoning.  Considers the various elements of the question. |
| Level 3 | 5-6 | Fluent and accurate technical vocabulary is used to support arguments that are relevant to the issues of the question.  There is a balanced and wide-ranging consideration of relevant issues, using coherent and logical chains of reasoning that shows a full awareness.  Carefully considers the various elements of the question. |

[Total 20 marks]