Attempt all questions in Section I.
Attempt one sub-section of Section II.

<table>
<thead>
<tr>
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</thead>
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</tr>
</tbody>
</table>

For the sub-section chosen, attempt all questions.
Read all questions carefully.
Do not write on the question paper.
Write as neatly as possible.

Each section should be answered in a separate answer book.
1. An information system is developed using the *Systems Analysis and Design Life Cycle*.

(a) Explain the term *iterative* as applied to the Systems Analysis and Design Life Cycle.  

(b) A *project plan* is an important part of the development of an information system.
   
   (i) Explain the importance of a project plan.  
   
   (ii) State two elements in a project plan.  

(c) *Document sampling* is one *investigative technique*.
   
   (i) Explain the purpose of document sampling.  
   
   (ii) Name one investigative technique other than document sampling.  
   
   (iii) When the investigations are complete, one result is *background information*.  
   
   Name one additional result available once the investigations are complete.  

(d) The *systems specification* indicates *restrictions on development*.
   
   (i) State one possible restriction that may be placed on any information system development.  
   
   (ii) Name one other item outlined in the systems specification.
2. Various design, testing and evaluation techniques are used to make sure a completed information system is correct.

   (a) Logical design is produced during the development of an information system. Describe the term logical design, stating one item that would be included.  

   (b) A process can be described using either Structured English or a graphical design notation. Name and describe one graphical design notation used for this purpose.  

   (c) During testing of an information system, different types of testing will be carried out.

      (i) Describe component testing.  

      (ii) Describe acceptance testing.  

      (iii) State one result of systematic testing.  

   (d) Describe the purpose of evaluation in the development of an information system.  

   (e) Name the type of maintenance needed to fix bugs and errors not found during testing. 

   [Turn over
3. An online store allows customers to purchase items via their website. The functional requirements of the website include the following:

- Visitors to the site can browse the online product catalogue.
- Items selected by a customer are added to (and can be deleted from) a shopping basket.
- When a customer proceeds to the checkout, they must first login to their account (new customers must first create a new customer account); a new order is then created and item details are copied from the shopping basket.
- The shopping basket is deleted when a customer pays for the order and completes the checkout process; at this point, the order status is set to “confirmed”.

(a) An extract from the entity event matrix for the online store is provided below.

<table>
<thead>
<tr>
<th>Events</th>
<th>Entities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visitor browses online catalogue</td>
<td>Customer</td>
</tr>
<tr>
<td>First item added to shopping basket</td>
<td>Product</td>
</tr>
<tr>
<td>Additional item added to shopping basket</td>
<td>Basket</td>
</tr>
<tr>
<td>Item removed from shopping basket</td>
<td>BasketItem</td>
</tr>
<tr>
<td>Existing customer proceeds to checkout</td>
<td>Order</td>
</tr>
<tr>
<td>New customer proceeds to checkout</td>
<td>OrderItem</td>
</tr>
<tr>
<td>Customer pays for order and completes checkout process; order status</td>
<td></td>
</tr>
<tr>
<td>is set to “confirmed”</td>
<td></td>
</tr>
</tbody>
</table>

Copy and complete the matrix using the letters C(create), M(modify), D(delete) and R(read) to indicate the effect that each event has on the relevant entities.
3. (continued)

(b) Based on the **full** entity event matrix for the system, the *entity life history diagram* for the Product entity is produced. This is shown below.

(i) State one essential event that has been omitted from the diagram above. 1

(ii) Use the events in the diagram to explain the terms *iteration* and *selection*. 2

[Turn over
SECTION I (continued)

4. A private nursery is developing a relational database to help with the day-to-day running of their business. Following normalisation to Third Normal Form, they have identified that the following entities are required.

Child (ChildId, ParentID*, Gender, FirstName, LastName, Age, OtherDetails)
Parent(ParentID, ParentName, ParentGender, Address, TelNo, MobileTelNo, OtherContactDetails)
MonthlyFee(FeeID, ParentID*, DateDue, AmountDue, AmountPaid)
Register(ChildID*, SessionID*, PresentYorN)
Session(SessionID, StartDate, StartTime, FinishTime)
Incident(IncidentID, ChildID*, IncidentTypeCode*, EventTime, EventDetails)
IncidentType(IncidentTypeCode, IncidentDescription)

Notes:
1. Parent details may be added to the system before their children attend.
2. Each child has only one parent record.
3. Although parents may have more than one child at the nursery, they are charged a single monthly fee.
4. Each day has several sessions.
5. Incident types include: sickness, behaviour, achievement.
6. In this representation, underlined attributes represent primary keys, while asterisked attributes represent foreign keys*.

(a) Draw an Entity Relationship Diagram for the information given above, ensuring that the cardinality and optionality of each relationship are clearly displayed. Also ensure that any weak entities and weak relationships are clearly indicated.

(b) The data dictionary for the entities in the nursery database is developed.

(i) The Child entity includes the attribute Gender.

Describe a suitable validation for the Gender attribute in a nursery database system.

(ii) The Child entity includes the attribute Age.

Describe a suitable validation for the Age attribute in a nursery database system.
4. (continued)

(c) The nursery sends out a monthly summary to each parent. Along with the payment details, the summary shows the details of the children and the sessions they attended.

Explain the use made of two components of a relational database system that are required to produce the monthly summary shown below.

<table>
<thead>
<tr>
<th>AP Nursery</th>
<th>Monthly Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 Ingram Street</td>
<td>Total Due: £1234</td>
</tr>
<tr>
<td>Fort George</td>
<td>Total Paid: £1234</td>
</tr>
<tr>
<td>FG1 GF2</td>
<td>Amount Due: £0</td>
</tr>
</tbody>
</table>

Alison Russell
12 Lenora Street
Fort George
FG4 GF9

Date: 24 May 2015

Dear Alison

Please find listed below a summary of the session(s) your child/children attended in the last month.

Name of Child: Jack

<table>
<thead>
<tr>
<th>Date</th>
<th>01/04/15</th>
<th>08/04/15</th>
<th>15/04/15</th>
<th>22/04/15</th>
<th>29/04/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start</td>
<td>09:00</td>
<td>09:00</td>
<td>09:00</td>
<td>09:00</td>
<td>09:00</td>
</tr>
<tr>
<td>Finish</td>
<td>17:00</td>
<td>17:00</td>
<td>17:00</td>
<td>12:00</td>
<td>12:00</td>
</tr>
</tbody>
</table>

Name of Child: Sophie

<table>
<thead>
<tr>
<th>Date</th>
<th>01/04/15</th>
<th>03/04/15</th>
<th>08/04/15</th>
<th>15/04/15</th>
<th>22/04/15</th>
<th>29/04/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start</td>
<td>09:00</td>
<td>09:00</td>
<td>09:00</td>
<td>09:00</td>
<td>09:00</td>
<td>09:00</td>
</tr>
<tr>
<td>Finish</td>
<td>17:00</td>
<td>17:00</td>
<td>17:00</td>
<td>12:00</td>
<td>12:00</td>
<td>12:00</td>
</tr>
</tbody>
</table>

Yours,

N. Teacher

(d) Test data values have to be produced as part of the test plan.

The entity Session includes the attributes StartTime and FinishTime.

State three sets of test data for StartTime and FinishTime that would fully test the implementation of these attributes. Provide a short explanation for your choice of each set.
5. Mr Jordan Sim booked a flight to Orlando with FlyJet and received a Booking Confirmation. When he checked in for his flight, he received a Boarding Pass and Luggage Identification Tag. Each of these documents is shown below.

**FlyJet Booking Confirmation**

**Booking Ref 63740**

**PASSENGER:** Mr Jordan Sim

**DEPARTURE:** Date 6th April 2015

Time 15:50

Airport GLA — Glasgow International

**ARRIVAL:** Date 6th April 2015

Time 19:30

Airport MCO — Orlando International

**FLIGHT:** Code FJ433

Carrier FlyJet

Aircraft Boeing 747-400

**ADDITIONAL INFO:** Class Economy

Meal Option Vegetarian

Frequent Flyer FJ1234567

---

**Baggage Identification Tag**

**SQR NBR 152**

**MCO**

**FLYJET**

**TO ORLANDO**

**FJ433**

**06 APR 2015**

**TAG ID FJ433060615152**

---

**Boarding Pass**

**FLYJET**

**PASSENGER**

SIM / JORDAN MR

**GLA ➔ MCO**

**FLIGHT NO**

FJ433

**DATE**

06 APR

**GATE**

31

**BOARDING TIME**

1510

**SEAT NO**

39F

**CARRIER**

FLYJET

**SQR NBR**

152

**Frequent Flyer**

FJ1234567

---

**FLYJET**

**Boarding Pass**

**CARRIER**

FLYJET

**CLASS**

ECONOMY

**SQR NBR**

152
5. (continued)

The following points should also be noted:

• Each flight is uniquely identified by combining its FlightCode and the DepartureDate.
• The same FlightCode is used on different dates; the Aircraft, BoardingGate and BoardingTime may change from day to day.
• Each passenger on a flight has a unique Booking Ref; some passengers are FrequentFlyers.
• The departure and arrival details (Time and Airport) together with Carrier are all dependent on the FlightCode.
• Each passenger is allocated a SeatNumber and SequenceNumber (SQR NBR) at check-in; the SequenceNumber indicates a passenger’s sequence in the check-in queue.
• Each passenger is permitted one item of baggage which is allocated a unique TagID.
• The SeatNumber allocated determines the Class of the seat.

(a) Using FlightCode + DepartureDate as its primary key, create a single list of attributes representing unnormalised form (UNF) of the FlyJet booking and check-in system.  

(b) Normalise these attributes to produce a set of entities in Third Normal Form. Show all stages of the normalisation process from 1NF through to 3NF.

END OF SECTION I

[Turn over]
SECTION II

Attempt ONE sub-section of Section II

Part A    Information Systems Interfaces    Page 12    Questions 6 to 9
Part B    Online Database Systems           Page 20    Questions 10 to 13

For the sub-section chosen, attempt all questions.

[Turn over
SECTION II

Part A—Information Systems Interfaces

Answer ALL questions in this part.

6. BikeDesigns is a company that sells custom-designed bikes online. Customers select the bike components they wish to incorporate into their bike and submit an order. The company checks that these components are available and then assembles the components and sends the finished bike to the customer. These processes are described below.

<table>
<thead>
<tr>
<th>TAKING AN ORDER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customers provide their personal details, design their bikes online and then submit their orders. Details of the bike ordered are stored in the customer order file. The customer details are stored in the customer file and the transaction details are stored in the accounts receivable file.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DEALING WITH THE ORDER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using detail from the customer order file, the company checks its inventory file to see whether the components needed are in stock. Any parts not in stock are ordered from a component company whose contact details are obtained from the suppliers file. Details of any components ordered are stored in the supplier orders file.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CONSTRUCTING THE BIKE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any components ordered are delivered from the supplier along with an invoice. The supplier orders file and the inventory file are updated and details of the invoice are stored in the accounts payable file. Once assembly of the bike is complete, the bike is despatched to the customer and the customer order file updated.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAYMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detail of the money due to the bike company and money owed to the component supplier are obtained from the two account files and sent to the company bank.</td>
</tr>
</tbody>
</table>

(a) Using the description above, draw a level one data flow diagram for these processes.
6. (continued)

(b) BikeDesigns decides to create a mobile phone app which will allow customers to design their bikes on their mobile phones or tablet computers.

(i) Describe two factors which have influenced the decision to create this app.

(ii) A feasibility study for the development of the app is to be undertaken. State one reason why a feasibility study should be carried out.

(iii) The LUCID methodology is used during the development of the app. State who will be involved at the design foundation stage and describe two tasks performed.

(iv) (A) Describe two ways that the design of the app as shown is suitable for novice users.

(B) Other than economic reasons, state one reason why the company might consider that it is not necessary to alter the design for expert/frequent users.

(v) Justify why the interface mode is considered to be sensory.
7. During the development of an information system, a number of different interface design methods can be used.

(a) Consider the two systems below which both relate to the Chisholm hotel.

(i) The hotel is looking to introduce a new automated check-in for customers.

The first screen will present a welcome message.

The customer presses a start button to move to the next screen which asks for the customer’s name and post code. Having entered the details, the customer then presses the continue button. The next screen displays a message saying that the room key cards are being produced.

Once the room key cards are issued, the system returns to the initial welcome screen, ready for the next customer.

Name one suitable method to represent the design of the interface for the new check-in system and justify why it would be an appropriate choice.

(ii) Instead of hanging paintings around the hotel, the management would like to use digital screens to display artwork produced by local artists. Each screen will display a total of 12 images. The images will be displayed one at a time and will change every 5 minutes, cycling through the images in a set sequence.

If they wish to, hotel guests can interact with the system by touching one of the screens. This will open a new window and display information about the artist along with a number of options. These options will allow guests to request information about local art galleries and art shows.

When the guest is finished viewing the information, the screen will return to the original image and resume scrolling through the 12 images.

Name one suitable method to represent the design of the interface for the new digital display system and justify why it would an appropriate choice.
SECTION II
Part A—Information Systems Interfaces (continued)

7. (continued)

(b) The hotel is developing a new website for its Scottish themed restaurant. The *prototype* below shows the proposed layout of one of the pages on the website.

(i) Create a *feature set* for the website based on the prototype shown above.

(ii) Use the prototype shown above to explain the difference between the terms *syntax* and *semantics*.

(iii) *Quantitative* feedback from early usability testing of the interface is shown in the chart below. The vertical axis rates the feedback in the range 0 to 5, where 0 is a poor rating and 5 is excellent.

![Questionnaire Feedback Chart]

Suggest one way of improving the interface by using the feedback, justifying your answer with reference to the chart.
8. Wemyss library has recently introduced self-service kiosks which provide a number of member services: members can use the kiosks to search for particular books, check books out of the library, return books, pay any fines that are due or update their membership details.

(a) State two physical constraints associated with this type of kiosk.

(b) When members first use one of the kiosks, they are asked to provide additional details as indicated below:

(i) Explain why the entry of the Email Address demonstrates a textual interface.

(ii) Explain why the entry of Personal Interests demonstrates a graphical interface.
SECTION II
Part A—Information Systems Interfaces (continued)

8. (b) (continued)

(iii) During initial usability testing, the entry of Personal Interests was achieved in a similar way to the entry of Email Address. Explain how the feedback gathered from user error rates helped to determine that selection from a drop-down list was a more appropriate method of input for this information.

(c) The kiosks incorporate several features associated with an intelligent interface.

(i) Describe one feature of natural language interaction that would make it easy for library members to search for particular books.

(ii) The kiosks automatically detect the height of users and adapt the interface by providing information appropriately, either at the top or the bottom of the screen.

(A) State the type of predictive and adaptive interface that is used for this purpose.

(B) Describe how eye tracking could be used to determine the success of this feature of the kiosks.

(C) This feature of the kiosks is especially important for wheelchair users. State the inspection method which took this into consideration during usability testing.

(iii) Suggest one use that could be made of adaptive menus that is based on a library member’s list of Personal Interests.

(iv) An avatar is used to teach library members how to use each of the services provided by the kiosks.

State the type of documentation exemplified by the avatar.

(d) The services provided by the new kiosks were introduced as part of a phased conversion.

Explain why this is an appropriate method of introducing self-service kiosks to a library.

(e) After a period of 6 months, the library uses a survey to gather views on the kiosks from library members.

Explain how a survey of this type would be carried out.
SECTION II  
Part A—Information Systems Interfaces (continued)

9. HealthyLife is designing a mobile phone app which will let users track their health by allowing them to enter various pieces of data such as weight, blood pressure, etc and obtain various displays.

(a) (i) Explain how low fidelity prototyping could be used in the design of the app.

(ii) Rapid application development (RAD) could be used to develop the app. Give one advantage of using RAD rather than a graphical design technique.

(iii) Explain the difference between horizontal and vertical prototyping by referring to the items shown in the prototype shown above.

(iv) Assess the suitability of co-discovery as a means of testing this prototype.

(b) A walkthrough is carried out as a quality inspection of the app. State who would carry this out and describe how it would be done.

(c) To find out users' feelings about the app, self reporting logs are used. Explain why this method of inquiry might not be suitable in this situation.
SECTION II

Part B—Online Database Systems

Answer ALL questions in this part.

10. BikeDesigns is a company that sells custom-designed bikes online. Customers select the bike components they wish to incorporate into their bike and submit an order. The company checks that these components are available and then assembles the components and sends the finished bike to the customer. These processes are described below.

**TAKING AN ORDER**
Customers provide their personal details, design their bikes online and then submit their orders. Details of the bike ordered are stored in the customer order file. The customer details are stored in the customer file and the transaction details are stored in the accounts receivable file.

**DEALING WITH THE ORDER**
Using detail from the customer order file, the company checks its inventory file to see whether the components needed are in stock. Any parts not in stock are ordered from a component company whose contact details are obtained from the suppliers file. Details of any components ordered are stored in the supplier orders file.

**CONSTRUCTING THE BIKE**
Any components ordered are delivered from the supplier along with an invoice. The supplier orders file and the inventory file are updated and details of the invoice are stored in the accounts payable file. Once assembly of the bike is complete, the bike is despatched to the customer and the customer order file updated.

**PAYMENTS**
Detail of the money due to the bike company and money owed to the component supplier are obtained from the two account files and sent to the company bank.

(a) Using the description above, draw a level one data flow diagram for these processes.  

(b) Describe two E-commerce features needed to allow customers to purchase bikes.  

(c) BikeDesigns staff frequently need to update their website. They have a content management system (CMS) which allows them to do this without learning any programming skills. Describe two other features of a CMS that would help their business.
10. (continued)

(d) One of the suppliers of bike components has an information system which is incompatible with the BikeDesigns information system.

(i) Describe how EDI transaction standardisation and translation software would help the transfer of an invoice from the supplier to BikeDesigns. 3

(ii) Give two reasons why it might be preferable for BikeDesigns to use EDI-INT rather than EDI-VAN as a method of EDI communication. 2

(e) BikeDesigns decides to use several social media tools provided by Customer Relationship Management software. Justify the use of social media in this case. 2
11. Wemyss library has recently introduced self-service kiosks which provide a number of member services: members can use the kiosks to search for particular books, check books out of the library, return books, pay any fines that are due or update their membership details.

(a) The kiosks are connected to an SQL database which stores member and book details. The new system requires existing members to provide additional information. As a result, the underlying structure of the member table must be edited.

Explain why server based database management tools would be an appropriate choice for library staff who need to edit the structure of the member table.

(b) When members first use one of the kiosks, they are asked to provide the additional information required using the HTML form indicated below:
11. (b) (continued)

The structure of this HTML form includes a *form element* and several *input elements*.

(i) Describe, in detail, the purpose of the form element.  

(ii) One of the Return Date Notifications from the form shown on the opposite page is displayed below.

```
2 days prior to due date
```

Write the HTML code to generate this Return Date Notification option. You should clearly indicate the contents of the *type*, *name* and *value* attributes.

(c) An avatar is used to teach library members how to use each of the services provided by the kiosks.

State the type of *documentation* exemplified by the avatar.

(d) As a way of providing information about the quality of a book, the kiosks allow library members to rate any books that they have borrowed.

(i) Explain how this feature of Customer Relationship Management enhances the experience of library members.

(ii) This functionality is achieved by connecting to the LoveBooks web services and providing the book ISBN along with the name and home town of the library members.

(A) Before submitting their first rating, members are asked to read and accept the terms and conditions that apply.

   Explain the significance of this.

(B) Once the member has added a new rating, the LoveBooks web server inserts the new rating into its ratings table.

   Describe two processes performed by the LoveBooks web server as new ratings are added to the ratings table.

(e) The services provided by the new kiosks were introduced as part of a *phased conversion*.

   Explain why this is an appropriate method of introducing self-service kiosks to a library.
12. Gordon is testing a new app before it is released. The app uses his mobile phone’s satellite navigation system to track his runs. The app stores the run data in a database table.

(a) When an Internet connection is available, the app should attempt to copy recorded data to a database server.

During testing, the error message shown is returned from the server, even though the correct username and password have been entered.

Give two reasons why the server may return this error.

(b) Using the web browser on his phone, Gordon can download summary data about run history from the database server.

Write the HTML code needed to produce the download button shown below.
SECTION II
Part B—Online Database Systems (continued)

12. (continued)

(c) Server side scripting is used to extract the data from the database table called hillruns. The contents of the hillruns table are shown below.

<table>
<thead>
<tr>
<th>trackid</th>
<th>rundate</th>
<th>trackname</th>
<th>distancekm</th>
<th>heightgainedm</th>
<th>timemins</th>
<th>comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>A34179</td>
<td>12/Nov/2014</td>
<td>Pentlands Run</td>
<td>10.45</td>
<td>350</td>
<td>85</td>
<td>Wet and windy</td>
</tr>
<tr>
<td>B32334</td>
<td>15/Nov/2014</td>
<td>Moorfoots</td>
<td>12.13</td>
<td>200</td>
<td>90</td>
<td>Quite nice run</td>
</tr>
<tr>
<td>G55493</td>
<td>18/Nov/2014</td>
<td>Pentlands Run</td>
<td>10.45</td>
<td>348</td>
<td>81</td>
<td>Misty</td>
</tr>
<tr>
<td>A92894</td>
<td>21/Nov/2014</td>
<td>Pentlands Run</td>
<td>10.44</td>
<td>349</td>
<td>83</td>
<td>Sunny and warm</td>
</tr>
</tbody>
</table>

(i) To show all runs with the trackname 'Pentlands Run', sorted into order of timemins, with quickest run listed first, the SQL query below is used.

Copy and complete this SQL query.

```sql
SELECT trackname, rundate, timemins FROM hillruns
WHERE trackname = 'Pentlands Run'
```

(ii) Using a scripting language with which you are familiar, write the server-side code which will execute this SQL query.

(d) The software company wishes to develop the application for a different phone platform using commercial on-line database software.

(i) State one reason why a feasibility study should be carried out.

(ii) State two sources of support for the developers to help deal with problems that arise during the development of the new version of the program.

(iii) (A) Open Source Software is an alternative to commercial Database Software. Describe its suitability in terms of cost effectiveness for this development.

(B) State two criteria that could be used to evaluate the security of open source software.
13. A table called \textit{tent} is used to store details of the tents for sale in a camping shop.

\textit{(a)} Contents of the \textit{tent} table are shown below:

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline
tentid & make & description & colour & range & retailprice & carddiscountprice \\
\hline
0001 & L Gear & 2-Berth & Red & Pop Up & £50.00 & £24.99 \\
0002 & L Gear & 2-Berth & Grey & Festival & £55.00 & £24.99 \\
0003 & VO & 3-Berth & Green & Touring & £220.00 & £169.99 \\
0004 & L Gear & 2-Berth & Orange & Pop Up & £50.00 & £24.99 \\
0005 & VB & 3-Berth & Red & Backpacking & £140.00 & £119.99 \\
0006 & VT & 3-Berth & Green & Touring & £230.00 & £199.99 \\
0007 & VO & 3-Berth & Red & Family & £180.00 & £169.99 \\
0008 & HG & Orange & Beach & & £50.00 & £24.99 \\
0009 & FT & 4-Berth & Green & Family & £150.00 & £89.99 \\
0010 & VO & 5-Berth & Blue & Family & £220.00 & £169.99 \\
0011 & ab & 2-Berth & & & £0.00 & £0.00 \\
\hline
\end{tabular}
\end{table}

\textit{(i)} The following SQL query is executed.

\begin{verbatim}
SELECT tent.description, tent.retailprice
FROM tent
WHERE tent.description = '3-Berth';
\end{verbatim}

Describe the output produced when this SQL query is applied to the \textit{Tent} table.

\textit{(ii)} A second SQL query is executed. The output from the query is shown below.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|}
\hline
tentid & colour & retailprice & carddiscountprice \\
\hline
0008 & Orange & £50.00 & £24.99 \\
\hline
\end{tabular}
\end{table}

Write the SQL statement using the field \textit{description} which would produce this output.
13. (continued)

(b) The database is developed and an additional table called comment is added. Contents of the comment table are shown below.

<table>
<thead>
<tr>
<th>userid</th>
<th>tentid</th>
<th>commentdate</th>
<th>time</th>
<th>comment</th>
<th>rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>21/04/2013</td>
<td>11:00:00</td>
<td>Wonderful tent</td>
<td>5</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>12/12/2013</td>
<td>14:00:00</td>
<td>A good all round tent</td>
<td>5</td>
</tr>
</tbody>
</table>

(i) Complete the SELECT statement used to find the average rating for each tent.

```
SELECT comment.tentid,                           
FROM comment                                   
GROUP BY comment.tentid;                         
```

(ii) A query is needed to display all tents which have had no comment. Copy and complete the SQL command needed for this purpose.

```
SELECT *                                      
FROM tent                                     
WHERE                                        
    (SELECT * FROM comment WHERE tent.tentid = comment.tentid) = NULL; 
```

(c) The following tent has been discontinued and its record is to be removed from the database.

<table>
<thead>
<tr>
<th>Tent</th>
<th>Tent ID</th>
<th>Make</th>
<th>Description</th>
<th>Colour</th>
<th>Range</th>
<th>Retail Price</th>
<th>Card Discount Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Berth</td>
<td>5</td>
<td>VB</td>
<td>Red</td>
<td>Backpacking</td>
<td>£140.00</td>
<td>£119.99</td>
<td></td>
</tr>
</tbody>
</table>

Write an SQL query which would remove this record.