1. A teacher uses a database to store the marks of pupils from all year 9 classes.
	1. PUPIL and CLASS are two entities used in this database.
	Explain the term entity.
	2. The data for the first four pupils in the PUPIL table is shown below.
	
		1. State the primary key for the PUPIL table and explain your answer.
		2. The database also contains a CLASS table. The primary key for the CLASS table is ClassCode. Explain why ClassCode has also been included in the PUPIL table.
2. A grocery shop uses a database with a DBMS to keep records of its stock.
	1. Explain what is meant by a DBMS.
	2. The database uses forms and reports.
	Describe each of these and give **one** example of how it would be used in the shop’s database.
	3. Here is some data from the supermarket’s database.
	
		1. State the ProductID of the products in the above sample which fit the following criteria.
		**Supplier = Killey’s**
		2. State the ProductID of the products in the above sample which fit the following criteria.
		**Price > £1.00 OR Supplier = Hill Farm**
		3. Write the criteria which can be used to select all products which are not discontinued and where the QuantityLeft is lower than the ReorderLevel.
3. Mrs Smith runs a dog sitting service that looks after dogs whose owners are going away on holiday.
Mrs Smith uses a database with two tables:

• The table DOG stores the following data about each dog: DogID, name, sex, weight, date of arrival, date of departure.
• The table JOB stores the daily jobs that she needs to do with each dog.

	1. The DOG table contains fields for the sex and weight of the dog.
		1. Describe a validation check that can be done on the sex field.
		2. Describe a different validation check that can be done on the weight field.
	2. An extract of the JOB table is shown below:
	
	Explain why DogID has been included in this table.
	3. Mrs Smith uses a query to select jobs using the following criteria:
	**(Time = “Afternoon”) OR (Time = “Evening”)**
	List the JobNumbers of the jobs that will be selected from the extract shown.
	4. Mrs Smith wants to use database management software to create a report of all the jobs that she needs to perform on any given day, using data from the DOG and JOB tables.
	Design a layout for the report.
4. A dentist uses a database to store the details of patients and their appointments.
	1. A database management system (DBMS) is used which includes forms, queries and reports.
	Tick one box in each row to show whether each of the following statements best describes a form, a query or a report.
	
	2. When a patient makes an appointment, the start time of the appointment needs to be validated.
	State **two** validation checks which can be carried out on the start time of an appointment.
	3. Justify the use of separate entities to store the patient and appointment data.
5. A television set top box contains a database of television channels and programmes.
	1. Describe what is meant by a database.
	2. Data about television channels are stored in the CHANNEL table. Part of this table is shown below.
	
	State the primary key for the CHANNEL table and give a reason for your choice.
	3. Data about programmes that will be broadcast are stored in the PROGRAMME table. The data about each programme includes the channel on which it would be broadcast.
		1. Explain how a foreign key can be used to connect the PROGRAMME table to the CHANNEL table.
		2. Explain why the programme data is stored in a separate table from the channel data.
6. An MP3 player contains a database of songs. This database has only one table. A sample of the data in this table is shown below.

	1. State the most appropriate data type for each of the fields shown below.
	2. The mp3 player allows users to create playlists by using queries. For example if the query used is
	 Artist = “Dave Eade”
	the mp3 player will play tracks number 001 and 003.

		1. State the TrackNo of the songs that will be played using each of the following queries.

		Length > 2

(Artist = “MC Nail”) OR (Protected = False)

(Song = “Skit”) AND (TimesPlayed > 0)

* + 1. Write down the query that will select all songs over 2.5 minutes, which have never been played.
		2. The mp3 player can be connected to a computer from which songs can be added. The computer has a relational database with many tables. Explain, using an example, what is meant by an entity and how entities relate to the tables.
1. A school uses a database, which stores the attendance data of the pupils. The data is entered by teachers using a desktop data application and accessed by parents using a web page or mobile phone application.
	1. Define the term database.
	2. Explain **one** benefit of separating the data from the applications that use the school’s attendance database.
	3. The school uses a database management system (DBMS) to separate the data from the applications that use it.  Describe **one** example of how each of the following features of a DBMS can be used in the school’s attendance database.
		1. The ability to run queries
		2. The ability to set validation rules
2. A hairdresser uses a relational database to keep records of his clients and their appointments. The hairdresser uses off-the-shelf data-handling software to manage the database.
	1. State what is meant by off-the-shelf software.
	2. Describe how the data-handling software can be used to set up the structure of the database,  before any data is added.
	3. State **two** tasks the hairdresser can perform using the data-handling software, once the database is in use.