1 Name the objects A, B, C, D and E using the words from the list.

```
A: Monitor   B: CD ROM Drive
C: Speaker   D: Mouse
E: Keyboard
```

2 Ring two items which contain personal data.

```
Car park ticket   Credit card   Digital clock
Keyboard   Pupil record   Remote control
```

3 Draw five lines on the diagram to match the software to its use. The first one has been done for you.

```
Software       Use

Presentation graphics - recording data in a science experiment
Word processor - preparing a talk to show how a computer works
Spreadsheet - writing letters to parents
Database - keeping school tuck shop accounts
Desk Top Publishing - storing pupil records
Measuring program - producing the school magazine [5]
```
4. Give two ways in which a hard disc is different from a CD ROM. Any two of:

1. Cannot be moved easily from one computer to another
2. Can be written to and read from without special equipment
3. Has much faster access time
4. Has much faster transfer rate
5. Can store much more data

5. A floor turtle can use the following instructions:

<table>
<thead>
<tr>
<th>INSTRUCTION</th>
<th>MEANING</th>
</tr>
</thead>
<tbody>
<tr>
<td>FORWARD $n$</td>
<td>Move $n$ mm forward</td>
</tr>
<tr>
<td>BACKWARD $n$</td>
<td>Move $n$ mm backward</td>
</tr>
<tr>
<td>LEFT $t$</td>
<td>Turn left $t$ degrees</td>
</tr>
<tr>
<td>RIGHT $t$</td>
<td>Turn right $t$ degrees</td>
</tr>
<tr>
<td>PENUP</td>
<td>Lift the pen</td>
</tr>
<tr>
<td>PENDOWN</td>
<td>Lower the pen</td>
</tr>
</tbody>
</table>

Complete the set of instructions to draw the above shape by filling in the blank lines.

PEN DOWN
FORWARD 20
LEFT 90
FORWARD 20
RIGHT 90
FORWARD 40
RIGHT 90
FORWARD 20
PENDUP
FORWARD 20
PENDOWN
FORWARD 20
RIGHT 90
FORWARD 40
PENDUP
6 Tick whether the following statements are **TRUE** or **FALSE**.

<table>
<thead>
<tr>
<th>Statement</th>
<th>TRUE</th>
<th>FALSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>OMR is used to read data from school registers.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>OCR is used to read data from bank cheques</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>DTP is used to store pupil records on a school computer system.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Regular use of computers improves your eyesight.</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

7 Describe two features of a mouse.

Two from: Ability to control cursor, Ability to select text or icon, Ability to scroll menu screen, Ability to select from menu  

8 Describe two precautions you can take to prevent viruses from entering your computer system.

Two from:
- Do not use floppy discs from unknown sources
- Use a virus checker/killer program
- Do not download files from the Internet without virus scanning
- Do not load attachments to e-mails from unknown/doubtful sources

9 (a) Name two types of software which could be used in a school’s sports department.

Two pieces of software from:
1. Data logging software
2. Data handling programme such as database
3. Desk Top Publishing
4. Spreadsheet
5. Word processing

(b) State how each type of software would be used.

1. Taking physiological readings during exercise
   - Storing data logging readings
   - Producing graphs from data-logging data
2. Storing pupils’ records
   - Producing graphs from data
3. Producing posters for department notice board/team sheets
4. Calculating pupil marks
5. Send letters home about sports days
10 Pupil records are kept on a computer in the school office. Here is a part of a file of year 12 student records.

<table>
<thead>
<tr>
<th>Exam Number</th>
<th>Pupil Name</th>
<th>Gender</th>
<th>Form</th>
<th>Home Phone</th>
<th>Date of Birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1001</td>
<td>Zhang Zhiyaq</td>
<td>M</td>
<td>MJ</td>
<td>3574891</td>
<td>861201</td>
</tr>
<tr>
<td>1002</td>
<td>Kumar Mohandas</td>
<td>M</td>
<td>NK</td>
<td>6542738</td>
<td>861025</td>
</tr>
<tr>
<td>1003</td>
<td>Mohammed Hafiz</td>
<td>M</td>
<td>NK</td>
<td>6541984</td>
<td>870121</td>
</tr>
<tr>
<td>1004</td>
<td>Janine Dixon</td>
<td>F</td>
<td>KL</td>
<td>4256234</td>
<td>870611</td>
</tr>
</tbody>
</table>

(a) (i) Write down the name of the field which would be used as the key field.

Exam number

(ii) Why would it be used?

It is unique for each pupil

(b) Which field is most likely to be designed as Boolean/logical data type?

Gender

(c) Why is it more suitable to use date of birth rather than age?

Age changes every year so file will need to be continually updated

(d) State two ways in which pupil records can be protected from unauthorised use.

Use passwords
Encrypting the data
Restricting the use of data to certain computers

11 State one advantage and one disadvantage of using a laptop computer rather than a desktop computer.

Advantages: Not restricted to using it in one place
Can be used for data logging outdoors

Disadvantages: Battery life limits length of use
Easily broken/stolen
Not as easy as using mouse with desktop computer
Screen display not as clear as desktop computer
12 You have been asked to set up a science experiment to measure the rates of cooling of different liquids. You must use a computer to do this. You will need a monitor, keyboard and a mouse to help set up the experiment.

Name three other items of hardware or software. For each one you will need to say what it will be used for.

- Temperature sensors to read data
- Analogue to Digital Converter (ADC) to convert analogue signals to digital signals
- Data logging software to convert data
- Database to store data/print graphs
- Spreadsheet to calculate ratio and print graphs
- Printer/plotter to print graphs

13 A school uses a database to store records about its students. Describe a situation where a record on the database would need to be:

- Inserted: when a new student joins the school
- Deleted: when a new student leaves the school
- Amended: when a student changes address/phone number/class/form/ When incorrect data typed in and has to be corrected

14 (a) Name two household appliances which use computer control.

Microwave oven, Dishwasher/Washing machine, Television, VCR, Air conditioning system/Central heating system, Stereo system

(b) Describe two ways in which the use of such appliances has influenced people’s lifestyles.

- Gave more leisure and free time
- People become lazy
- People have a chance to go out more
- No need to stay in as much to do housework

15 At the end of the school year the head teacher sends a letter home to parents. This letter contains details of their new class teacher. Describe the steps in the production of such a letter using mailmerge.

1. Open/Create main document (template) containing information which will be repeated with each letter
2. Open/Create one document containing information which will be repeated with each envelope
3. Open/create database which contains names, addresses, form tutor, form details
4. Insert placeholders for variables in the main document
5. Merge data from the database into the main document
6. Merge data from the database into the envelope document
7. Print letters and envelopes

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16. Most home computer owners use a modem to connect to the Internet using a telephone line.

(a) Why is a modem needed?

Modem is needed either to convert digital computer signals to phone signals or to convert phone signals to digital computer signals.

(b) Give two advantages for individuals of using the Internet in the home.

- Easy to find information
- Access to a huge database of information
- Can do their banking on-line
- Can do their shopping on line
- An advantage of using e-mail compared with traditional post service

17. (a) Employees in a school office use computers for long periods of time.

(i) Describe one health problem which can be caused by such use.

1. Eye strain
2. Backache
3. Repetitive Strain Injury
4. Headache

(ii) Describe one way in which this might be prevented.

1. Use antiglare screen/look away from screen regularly
2. Get straight back chairs/sit with straight back
3. Do finger exercise regularly
4. Take regular breaks

(b) The employees print a lot of copies of the same documents. Give two reasons why they should use a laser printer rather than an inkjet printer.

- Laser prints more copies per minute/faster
- Paper tray needs refilling less often
- Toner cartridges need changing less often
- Quieter than inkjet
18 A school is going to publish its exam results on its website. Describe three stages in the creation of a page, naming the particular type of software which would be used at each stage.

- Create database of exam results using database/spreadsheet
- Produce reports using database software
- Import data into spreadsheet/graphics package
- Produce graphics using database/spreadsheet/graphics software
- Create web site pages using word processor/DTP/Web authoring package
- Create links/import data using word processor/DTP/Web authoring package
- Upload data into the web site pages

19 A school is going to buy computers to create a new IT room. They will be connected to the existing network.

(a) Give two factors other than cost that should be taken into account when choosing suitable computers to add to the network.

Two from:
- Compatibility with existing system
- Speed of processing and power
- Amount of Interface network cards needed
- Amount of hard disc space
- Reliability

(b) The purchase of new computers will cause the fileserver to be short of storage space and run more slowly. Describe two solutions to these problems.

Problems:
- Will cause reduction in server speed
- Will fill up server hard disc / no room to save work

Solutions:
- Buy extra internal memory for server
- Buy another hard disc for server
- Buy another server to act as a slave

(c) Apart from the computer, describe one item of hardware which would be needed and explain how it could be connected to the network.

Printer / scanner connected to a computer locally and driver installed on a computer and configured to be shared, if network card is present, connected directly to a network point and driver installed on a server, configured to be shared...
20. A school's student record system is on a completely separate computer network (the 'Admin' network) to the network the students use (the 'Curriculum' network).

The school is buying a computer for the staff workroom. Discuss the advantages and disadvantages of connecting to each network.

### Advantages to the curriculum:
- Can prepare worksheets and put on intranet
- Can assess pupils' work saved on network
- Are aware of what is available on pupils work area
- Can practice using software

### Advantages to the admin:
- Can print out class lists
- Can record assessments
- Can read pupil's timetable
- Can read staff's timetable
- Can lookup attendance records
- Can access pupils records

21. Most school libraries have computers which help the librarian to administer the lending system. Discuss the benefits to the librarian and students caused by the introduction of computers into their libraries.

#### Librarian
- Fewer mistakes in entering data
- Easier to see who has got what books out
- Easier to print out overdue book lists
- Easier to check if book is in or out
- Automatic calculation of fines

#### Students
- Easier to see if library has a certain book
- Easier to search for books in a certain topic
- Easier to search for books by particular author
- Easier to check what books you have got out

22. The results and pictures of a school sports day are to be included in a school magazine article. At the moment the results are stored in a spreadsheet. Describe how this article will be produced.

**Steps**
1. Spreadsheet data file will be saved into suitable format for Desk Top Publishing
2. Templates and frames are created in Desk Top Publishing package (DTP)
3. Spreadsheet data file will be imported into DTP package
4. Pictures imported into DTP package
5. Text and headings typed in and formatted

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