

- 1 A company pays its workers weekly. The payroll department collects the data about the workers and stores it in a transaction file. At the end of the week, the transaction file is used to update the master file.

Draw a system flowchart which shows how the transaction file and master file are used to produce the payslips for the workers.



2 Virtual reality and augmented reality are technologies used in medicine.

Explain the difference between virtual reality and augmented reality.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [4]

3 An artist has sketched some of the shapes to use in a cartoon image of a snail.

The pre-drawn shapes are shown in Fig. 1.

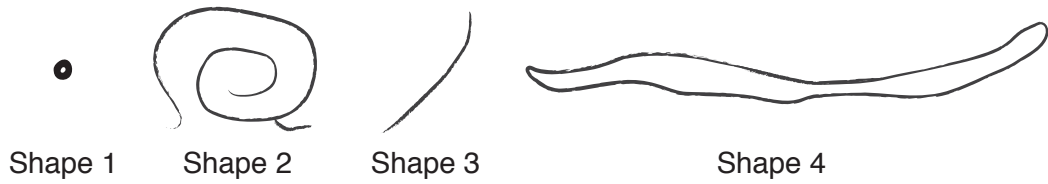


Fig. 1

The final image is then composed and completed using image-editing tools on a computer. It is shown in Fig. 2.

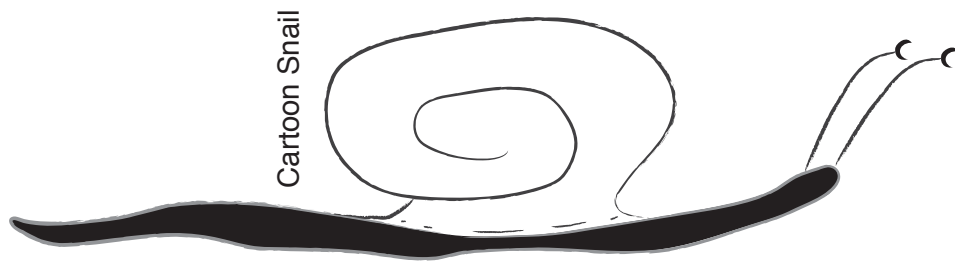


Fig. 2

Explain, in detail, how you would use image-editing tools to create the final image from the components.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [8]

5 A software developer has decided to use a conventional 'waterfall' method of development to produce a new game application.

(a) Describe the stages of the 'waterfall' method that should be followed.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

[6]

6 Audio files can be digitised with different bit rates.

The bit rate of an audio file can appear to affect the quality of the sound when it is listened to.

Explain how you can affect the perceived quality of the sound stored in the audio file by changing the bit rate.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [6]

8 A data protection act can contain principles that create rights for those people who have their data stored and processed by companies.

(a) Describe the rights that could be created by a data protection act.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
..... [4]

(b) Data controllers are appointed by companies to safeguard the rights of individuals whose data is stored.

Describe **two** criminal offences that may be committed by data controllers if they fail to abide by the principles of a data protection act.

1

.....
.....
.....

2

.....
.....
..... [2]

11 A shop is open between 12 noon and 10 pm.

While the shop is closed in the morning, a message saying “Sorry, we are closed” is displayed. After the shop has closed in the evening a message saying “Please try again tomorrow” is displayed. At all other times, a message saying, “Hello, we are open now” is displayed.

JavaScript code can be used to alter web pages in real time.

Complete the code in the function below that will allow a user to find out if the shop is open or closed.

```
function OpenTimesFunction() {  
var welcome;  
var timenow = new Date().getHours();
```

.....

.....

.....

.....

.....

.....

.....

.....

```
document.getElementById("open").innerHTML = welcome;  
//This line displays the result of the code  
}
```

[6]

BLANK PAGE

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge International Examinations Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cie.org.uk after the live examination series.

Cambridge International Examinations is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.