

- 1(a) A website is being developed to highlight the importance of dental hygiene. The website will include informative webpages for the public and a secure area for the dentists. The secure area will include a survey the dentists can complete for each patient and the option to download the results for their dental practice. The survey data will be used in dental health research.

A tablet device could be used to access the website.

Identify **two** characteristics of a tablet device.

1 .-----

2 .-----

[2]

- (b) The Internet Protocol (IP) will be used when accessing the website.

Explain the **role** of the Internet Protocol (IP).

[2]

(c) One threat to the website is a botnet.

Identify **one** risk of a botnet to the **dentists** using the website.

Describe how your choice could affect the **dentists**.

Risk	
	
	
Description	
	
	
	

[3]

(d) Identify **one** threat to the website other than a botnet.

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[1]

2(a) A website is being developed to highlight the importance of dental hygiene. The website will include informative webpages for the public and a secure area for the dentists. The secure area will include a survey the dentists can complete for each patient and the option to download the results for their dental practice. The survey data will be used in dental health research.

When the secure area of the website is being developed, the development team will use the partner Application Programming Interface (API).

Explain **one** disadvantage to the development team of using the partner API.

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[2]

(b) The API will use the representational state transfer (REST) architecture.

Explain **one** advantage to the development team of the API using the REST architecture.

[2]

(c) Identify **one** API architecture other than the representational state transfer (REST) architecture.

[1]

3(a) A website is being developed to highlight the importance of dental hygiene. The website will include informative webpages for the public and a secure area for the dentists. The secure area will include a survey the dentists can complete for each patient and the option to download the results for their dental practice. The survey data will be used in dental health research.

Testing will be carried out before the website goes live.

What is the purpose of testing?

[2]

(b) A test plan will be used when the website is being tested.

Identify **two** headings in a test plan.

1

2

[2]

(c) Analyse the advantages to the development team of carrying out user testing before the website goes live.

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[6]

4(a) A website is being developed to highlight the importance of dental hygiene. The website will include informative webpages for the public and a secure area for the dentists. The secure area will include a survey the dentists can complete for each patient and the option to download the results for their dental practice. The survey data will be used in dental health research.

The secure webpage will include a Use of Information policy.

Explain the purpose of a Use of Information policy.

[2]

(b) Identify **two** policies other than a Use of Information policy.

1 .-----

2 .-----

[2]

5(a) A website is being developed to highlight the importance of dental hygiene. The website will include informative webpages for the public and a secure area for the dentists. The secure area will include a survey the dentists can complete for each patient and the option to download the results for their dental practice. The survey data will be used in dental health research.

A dentist will record and save the answers to the dental health survey for each patient they see during a day. A new survey will be used for each patient.

Complete the table below to show which **data type** would be used to record and store each answer.

Answers required	Data type
Given Name	
Age	
Contact Number	
NHS / Private	

[4]

(b) The completed surveys can be saved to a portable storage device.

Explain **one** disadvantage to the dentists of saving the surveys to a portable storage device.

[2]

(c) The surveys will include personal details about the patients.

One action that will need to be taken to comply with the Data Protection Act (DPA) is to ensure that the data is secure.

Identify **two other** actions that should be taken by the dentists to comply with the DPA.

1 .-----

2 .-----

[2]

6(a) A website is being developed to highlight the importance of dental hygiene. The website will include informative webpages for the public and a secure area for the dentists. The secure area will include a survey the dentists can complete for each patient and the option to download the results for their dental practice. The survey data will be used in dental health research.

At the end of each day, a dentist will upload all patient surveys completed and saved that day to a public cloud.

Before the results are uploaded the data will be in the data state of at rest.

Complete the sentences to explain what is meant by data at rest.

Use words from the list.

You can use each word once or not at all.

- | | | | |
|----------|--------|---------|----------|
| analogue | device | digital | edited |
| platform | stable | stored | volatile |

Data at rest is information on
a It remains in a condition until it is accessed
or changed.

[4]

(b) Identify **one other** data state.

[1]

(c) Which protocol will be used when the completed surveys are being uploaded?

Tick (✓) **one** box.

File Transfer Protocol (FTP)

☐

Post Office Protocol (POP)

☐

Simple Network Management Protocol (SNMP)

☐

User Datagram Protocol (UDP)

☐

[1]

7 A back-up of the uploaded survey data will be taken each day.

Explain why the survey data should be backed up.

[2]

8(a) A website is being developed to highlight the importance of dental hygiene. The website will include informative webpages for the public and a secure area for the dentists. The secure area will include a survey the dentists can complete for each patient and the option to download the results for their dental practice. The survey data will be used in dental health research.

The data collected from the uploaded surveys could be stored in the Comma-separated Values (CSV) data format.

Identify **two** characteristics of the CSV data format.

1

2

[2]

(b) The data collected from the dental health surveys will be shared with scientists carrying out research into dental health.

Discuss whether the collected data should be stored in the CSV data format.

In your answer you **must** write about:

- the **advantages to the scientists** of the data being stored in the CSV format
- the **disadvantages to the scientists** of the data being stored in the CSV format
- whether you would recommend that the CSV format should be used **and** your reasons.

[9]

(c) Identify **two** data formats other than the CSV format.

1 .-----

2 .-----

[2]

- 9 The data collected from the dental health surveys will be stored in a public cloud storage area. Scientists carrying out dental health research will be able to access these results.

Explain **one** advantage and **one** disadvantage to the **scientists** of using a public cloud storage area to store the results of the survey.

Advantage .-----

Disadvantage -----

[4]

END OF QUESTION PAPER