

6 Data can be encrypted using asymmetric encryption.

(a) Complete the paragraph about asymmetric encryption.

Use the terms from the list.

Some of the terms in the list will **not** be used. You may use a term more than once.

- algorithm                  binary                  cipher text                  compression                  error
- hardware                  hexadecimal                  meaningless                  plain text                  private
- public                  readable                  transmission                  unreadable

Data is encrypted using an encryption key. This is a type of .....  
that scrambles the ..... and turns it into  
..... . This makes the data .....  
A ..... key is used to encrypt the data. This key cannot be used  
to decrypt the data. A ..... key is used to decrypt the data. Any  
device is able to request the ..... key, but only your device  
knows the ..... key.

[8]

(b) Data can also be encrypted using symmetric encryption.

Give **one** reason why a person would use asymmetric encryption instead of symmetric encryption.

.....  
..... [1]

7 Data is encrypted to keep it safe during transmission.

Complete the paragraph about asymmetric encryption.

Use the terms from the list.

Some of the terms in the list will **not** be used. You should only use a term once.

- asymmetric      certificate      cipher text
- decrypted      encrypted      parallel key      plain text      private key
- protected      public key      serial key      symmetric

..... is encrypted into .....  
using a ..... . The encrypted data is then transmitted from the  
sender to the receiver. The encrypted data is then decrypted using a  
..... .

[4]

7 Data is transmitted using the internet.

(a) The data is encrypted before transmission.

(i) State the purpose of encrypting data.

[1]

(ii) Describe the differences between symmetric and asymmetric encryption.

[4]

(b) The data is transmitted using packet switching.

(i) Identify **two** items of data contained in a packet header.

1

2

[2]

(ii) Give the purpose of a router in the packet-switching process.

[1]

8 (a) Draw and annotate a diagram that demonstrates the cyber security threat of data interception.

[4]

(b) Identify **one** security solution that will help keep data safe from data interception and state why it will help keep the data safe.