

8 A message is to be sent securely. Software uses a key to encrypt the message before it is sent.

(a) (i) Give **two** reasons for using key cryptography.

- 1
-
- 2
-
- [2]

(ii) Give **two** methods of key cryptography that can be used.

- 1
- 2
- [2]

(b) When there is a secure exchange of key(s), the message is sent.

The use of quantum cryptography is being considered for the secure exchange.

(i) State **two** possible benefits of using quantum cryptography.

- 1
-
-
- 2
-
-
- [2]

(ii) State **two** possible drawbacks of using quantum cryptography.

- 1
-
-
- 2
-
-
- [2]

6 A message is encrypted using a private key and sent to an individual using asymmetric encryption.

(a) State what is meant by a **private key**.

.....

.....

.....

..... [2]

(b) Describe the process of asymmetric encryption.

.....

.....

.....

..... [2]

(c) Explain how a digital signature is used to verify a message when it is received.

.....

.....

.....

.....

.....

.....

.....

..... [4]