

3 A user enters text into a computer system, using a keyboard.

An American standard code for information interchange (ASCII) character set is used to convert the text to binary.

(a) Identify **one** other character set that could be used to convert the text to binary.

..... [1]

(b) The character 'A' is represented by the denary ASCII number 65.

The character 'm' is represented by the denary ASCII number 109.

(i) Convert the **two** denary ASCII numbers to binary.

65

109 [2]

Working space

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(ii) Convert the **two** denary ASCII numbers to hexadecimal.

65

109 [2]

Working space

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(c) The character 'y' is represented by the binary ASCII number 01111001.

(i) Convert the binary ASCII number to denary.

..... [1]

Working space

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(ii) Convert the binary ASCII number to hexadecimal.

..... [1]

Working space

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(iii) A logical right shift of two places is performed on the binary ASCII number 01111001.

Give the binary number after the logical right shift of **two** places is performed.

..... [1]

Working space

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(d) The character 'T' is represented by the binary ASCII number 01010100.

The character 't' is represented by the binary ASCII number 01110100.

Add the **two** binary numbers using binary addition. Give your answer in binary. Show all your working.

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..... [3]