Name: Class: Mark:

1. Give **one** reason why data is represented in binary in a computer. [1]

2. State the number of bits in one byte. [1]

3. State the number of bits in one nibble. [1]

4. How many bytes are there in a mebibyte? [1]

5. A photographer takes up to 2000 photographs per week. Each photograph requires 5MiB of storage on the camera’s memory card.

Select the camera memory card with the smallest capacity that can store 2000 photographs. Put a tick in the box next to your answer. [1]

|  |  |  |
| --- | --- | --- |
| **Capacity in GB** | | |
| A | 4 |  |
| B | 8 |  |
| C | 16 |  |
| D | 32 |  |

6. For each of the binary values below, write down the decimal equivalent.  
You should include your working. [6]

(a) 00001011

(b) 01110110

(c) 10010111

(d) 11111111

(e) 1011010111011101

(f) 0110010110001010

7. Calculate the binary equivalent of each of the following numbers:  
You should include your working. [6]

(a) 34

(b) 128

(c) 149

(d) 201

(e) 4097

(f) 10000

8. Calculate the answer to each of the following:

(a) The smallest number, in denary, that can be stored in an 8-bit binary number. [1]

(b) The largest number, in denary, that can be stored in an 8-bit binary number. [1]

(c) The number of mebibytes in one gibibyte. [1]

(d) The number of gibibytes in one pebibyte. [1]

(e) The number of nibbles in one byte. [1]

(f) The number of bits in 2 MiB. [2]

9. Name the location on a CPU that stores binary values that will be or   
have been processed. [1]

[Total 25 marks]