

Binary/Decimal Practice – University Version

Part A: Applied Binary Problems

1. In a 4-bit register, what decimal range can be represented?
2. A digital circuit outputs the binary sequence 01101. What is the decimal value?
3. Represent decimal 255 using 8 bits (binary form).
4. If a memory address bus has 12 bits, how many unique addresses can it represent?
5. Convert the binary number 10101101 into decimal and explain how it could represent ASCII data.
6. A logic gate circuit gives binary output 110010. Convert this into decimal.

Answer Key

- 1) 0–15 (16 values)
- 2) 13
- 3) 11111111
- 4) 4096 addresses
- 5) 173 (ASCII "Y")
- 6) 50