Department of Computer Science & Engineering

Digital Design and Computer Architecture

Q&A – Boolean Functions

1. What is the largest unsigned 32-bit binary number?

Ans: The number **4,294,967,295**, equivalent to the **hexadecimal** value FFFF,FFFF$_{16}$, is the maximum value for a 32-bit unsigned integer in computing.

2. What is the largest 16-bit binary number that can be represented With,

a) unsigned numbers?

The largest 16-bit binary number that can be represented with unsigned numbers is 65535

c) sign/magnitude numbers?

Ans: The smallest **signed 16-bit number** is -32768 and the **largest** is 32767

3. What is the total number of boolean functions of four inputs?

   a. 32768   b) 65536   c. 131072   d. 262144

Ans: b) **65536**

7. How many different truth tables exist for Boolean functions of N variables?

Ans: 2^{2^N}