Answer on Question #45916, Programming, Other

Divide 0001010001001001 (BCD) by (1001)2 and express the result in octal equivalent .

Binary-coded decimal (BCD) is a class of binary encodings of decimal numbers where each decimal digit is represented by a fixed number of bits, usually four or eight

In this case every four bits represents one decimal digit

$$0001\ 0100\ 0100\ 1001\ (BCD) = 1449_{10}$$

Each digit of the binary number is 2^n in decimal

$$1001_2 = 1 \cdot 2^3 + 1 \cdot 2^2 + 1 \cdot 2^1 + 1 \cdot 2^0 = 9_{10}$$

$$\frac{0001\ 0100\ 0100\ 1001\ (BCD)}{1001_2} = \frac{1449_{10}}{9_{10}} = 161_{10}$$

For binary - octal translation we may use series of divisions by 8 :

Take remainder of the division by 8 , it will be smallest octal digit.

$$\{\frac{161}{8}\} = 1$$

Then work with integer part of division by 8 , as with input number , and do the same operation's till it become zero

$$[\frac{161}{8}] = 20$$

$$\{\frac{20}{8}\} = 4$$

$$\left[\frac{16}{8}\right] = 2$$

$$\{\frac{2}{8}\} = 2$$

$$\left[\frac{2}{8}\right] = 0$$

The end of cycle

And we get :

$$161_{10} = 241_8$$