ELL101 - Introduction to Electrical Engineering
Tutorial 8

21th May 2021

Q1. Convert 250_{10} to base 6

Q2. Convert the hexadecimal number 64CD to binary, and then convert it from binary to octal.

Q3. Convert $(78.625)_{10} \rightarrow (\quad)_2$

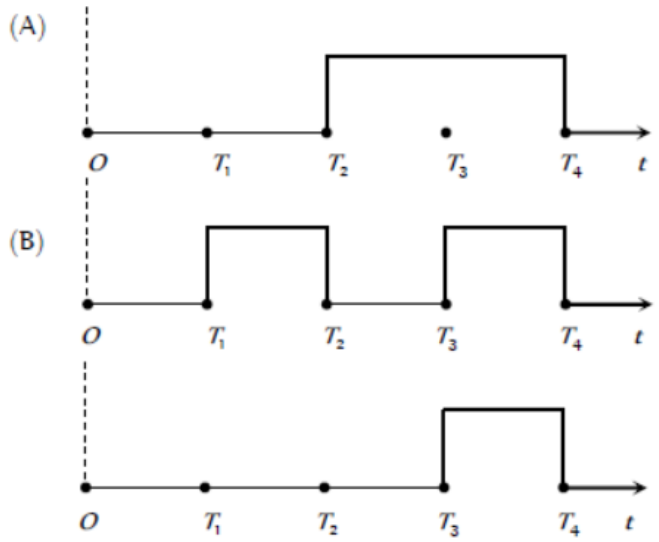
Q4. In the signed representation of numbers, assuming each number is represented using 8 bits, how will you represent -27?

Q5. Given two binary numbers *X* = 1010100 and*Y* = 1000111, perform the subtraction *X* - *Y* using 1's complement

Q6. Use DeMorgan's Theorem to simplify the following expressions:

$$\overline{(\overline{a + d}).\ (\overline{\overline{b} + c})}$$

Q7. The third waveform is the output of a particular logic gate, while A and B are the inputs. Which gate does this output correspond to?



Q8. Which of the following is true for a pnp transistor in the saturation region?

a) CB junction is reversed bias and the EB junction is forward bias
b) CB junction is forward bias and the EB junction is forward bias
c) CB junction is forward bias and the EB junction is reverse bias
d) CB junction is reversed bias and the EB junction is reverse bias

Q9. Find the voltage at terminal A for a circuit with an ideal amplifier given below: