ASSIGNMENT-05

BASIC ELECTRICAL & ELECTRONICS ENGINEERING

Unit-IV

Digital Electronics Fundamentals and Electronic Instrumentation:

Short Questions

1. What are the Universal gates. Explain one Universal gate, providing its truth table as an example.
2. Provide examples of two practical applications for a function generator.
3. What is the function of transducer in an instrument?
4. What is the function of trigger circuit in a digital oscilloscope?
5. What are the different operating modes of DSO?
6. Mention any two advantages and disadvantages of a DSO.
7. What is the function of time base generator in a CRO?

Long Questions

8. Convert the following:
   (i) $(3A6.C58D)_{16} = (?)_8$,
   (ii) $(0.6875)_{10} = (?)_2$,
   (iii) $(1AD.E0)_{16} = (?)_{10} = (?)_8$, (v) $(356.15)_8 = (?)_2 = (?)_{10}$
   (iv) $(1011011101.10101)_2 = (?)_{10} = (?)_8 = (?)_{16}$
   (v) Compute 1's and 2's complement of $(101010)_2$ and $(111001)_2$
   (vi) $(3745)8 = (?)_2 = (?)_{16} = (?)_{10}$.

9. Explain the working of a digital oscilloscope with suitable block diagram.
10. Explain different parts of a CRO with suitable block diagram.
11. Explain the working of a CRO with suitable block diagram.