I Semester B.Sc. (I.T.) Examination, June/July 2010
INTRODUCTION TO DIGITAL ELECTRONICS

Time : 3 Hours   Max. Marks : 75

PART – A

Answer **all** questions :   **(10×2+5×1=25)**

1. What is Gate ? Mention the different types of gates.

2. Why Boolean Algebra is needed for the computer system ?

3. Construct an AND gates using NAND gates.

4. What is the significance of using De Morgan's Theorems ?

5. Write any two applications of Flip-Flops.

6. Define Synchronous Counters.

7. Differentiate between Diodes and Transistors.

8. What do you mean by Digital Amplification ?

9. What is Amplifier ?

10. Define the concept of Sampling Rate.

11. Explain the following terms :
    a) Boolean Algebra
    b) Commutative laws
    c) Truth table
    d) Timing Diagrams
    e) Multiplexers.

PART – B

Answer **any five** of the following questions :   **(5×10=50)**

1. Explain the three Boolean operators with an examples.

2. State and prove De-Morgan's theorem.

3. Explain De multiplexers with neat block and circuit diagrams of a 1- of– 4 Demultiflexers.

4. Discuss the specification for the four bit binary adder.

5. Explain the Bipolar junction transistors.

6. How can you achieve amplification using a BJT ?

7. Explain the functioning of a FET and give out some digital application of FET.

8. Explain the characteristics of an OP-Amp.

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