BS 13 (NS)

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.

P.T.O.

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.