

**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.**

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**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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