

Exam. Code : 105702

Subject Code : 1530

B.Sc. (Information Technology) Semester—II

Paper-III : PRINCIPLES OF DIGITAL  
ELECTRONICS

Time Allowed—3 Hours]

[Maximum Marks—75

**Note :** Attempt any FIVE questions. All questions carry equal marks.

- Write  $(123)_8$  as binary code. Convert  $(AC3)_{16}$  into Octal.
  - Perform  $A7 \div 5$  in hexadecimal system.
- Explain the working of a synchronous modulo-16 counter.
- Design a Gray to BCD coder and de-coder.
- Implement  $ABC + AB + BC + ABD$  using NAND gates only.
  - Simplify  $F = \Sigma(1, 3, 5, 7, 9)$  using Boolean algebra.
- Explain the working of clocked SR flip flop. What are its limitations ? How these are removed ?

6. Write a note on EPROMs. Discuss how the device selection is done using the device addresses.
7. Using K-map Simplify  $\Sigma(1, 2, 5, 6, 8, 30, 42)$ . How the don't care terms simplify the design, show by using don't care terms?
8. (i) Differentiate static and dynamic RAM  
(ii) 4-bit shift register.