Exam. Code : 105702
Subject Code : 7164

B.Sc. (Information Technology) 2nd Semester

(Old Syllabus 2018)

PRINCIPLES OF DIGITAL ELECTRONICS

Paper–III

Time Allowed—3 Hours] [Maximum Marks—75

Note :— Attempt any **5** questions. **All** questions carry equal marks.

1. Do the following :

   (i) Convert $(35.12)_{10}$ into binary

   (ii) Convert ED9 into octal code.

   (iii) Multiply $(121)_8$ with $(25)_8$.

   (iv) (113-67) using two's complement.

2. Design a Modulo-10 counter.

3. Design a half adder using NOR gates only.

4. (i) Design a binary to BCD encoder

   (ii) Simplify $F = \Sigma(1,3,5,6,8)$ using Boolean algebra.

5. Explain the working of clocked RS flip-flip and JK flip flip. Also give limitations of these.

6. Write a note on EPOMs. Compare static and dynamic memory.

7. Write the steps of K-map simplification and simplify $\Sigma(1,3,4,6,8,10,12,14)$ using K-map. What is the significance of don't care terms ?

8. (i) Differentiate RAM and ROM

   (ii) Explain the design and working of 4-bit shift register.