Exam. Code : 105702
Subject Code : 1561

B.Sc. (Information Technology) 2nd Semester

PRINCIPLES OF DIGITAL ELECTRONICS

Paper—III

Time Allowed—Three Hours] [Maximum Marks—75

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

1. Describe Gray code and BCD code. Convert $(35.12)_8$ into binary.
2. Design a Modulo-10 counter and explain its working.
3. Design a full adder using NAND gates only.
4. (i) Convert AC + AB + BC + BD to POS form.
   (ii) Simplify $F = \Sigma(1, 2, 4, 6, 8)$ using Boolean algebra.
5. Explain the working of JK flip-flop.
6. Write a note on PROMs. How is address selection logic used to select a device out of a number of devices connected ?
7. Write the steps of K-map simplification and simplify $\Sigma(1, 2, 4, 6, 8, 11, 13, 14)$ using K-map.
8. (i) Differentiate PROM, EPROM and ROM.
   (ii) Excess 3 code.