RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College under University of Calcutta)

FIRST YEAR

B.A./B.SC. FIRST SEMESTER (July–December), 2012

Mid-Semester Examination, September, 2012

ELECTRONICS (General)

Date : 11/09/2012

Time : 11am – 12noon

Paper : I

Full Marks : 25

Answer *Question No. 1* and *any four* from rest of the questions

1. Compulsory Questions :-   5x1=5
   a) What do you mean by Combinational Logic Circuit ?
   b) What is Nibble ?
   c) What is the difference between Boolean Algebra & Ordinary Algebra?
   d) Convert $(0.3125)_{10}$ to Binary.
   e) Find out 2's Complement of $(1101011101000)_2$

2. Solve the following equations using K map Only: - X= BC'D '+ A'BC'D+ ABC'D+ A'BCD+ABCD   5
3. Draw & Explain the operation of Full Adder using logic gates with Truth Table   5
4. Write Short Notes on --4 bit Binary Parallel Adder   5
5. Design a 4 bit Binary to Gray Code Converter   5
6. Design a 32:1 Mux using 16:1 Mux.   5
7. Simplify with Boolean Algebra : Y= A'BC+ B'CD+AC+A'B'CD'   5
8. a) State and prove De Morgan's Theorem.
   b) What do you mean by Positional weighting?   2½+2½