AC-3309
First Year B. Sc. (Sem. II) Examination
March/April – 2015
Electronics : Paper - II
(Old Course) (Digital Electronic Circuits)

Time : Hours] [Total Marks : 50
Instructions : (1)

(2) Figures to right indicate full marks.
(3) Q.1 is compulsory.

1 Answer in brief : 8
   (a) By how many variables the expression will be reduced in case of Quad and Octet in K-map.
   (b) Draw the truth table of 3-input XNOR gate.
   (c) What do you mean by "Don't care condition" ?
   (d) Convert Gray code 101101010111 to its Binary equivalent.

2 (a) Design and implement Binary to BCD code converter. 8
    (b) Design and implement Half and Full subtractor. 6

    OR

2 (a) Discuss, in detail, all the Boolean laws that are used for simplification of Boolean expression. 8
    (b) With suitable example, explain Hamming code in error detecting and correction. 6

3 (a) Design and implement Binary to Gray code converter. 8
    (b) Prove NAND and NOR as a Universal Logic gates. 6

    OR

AC-3309] 1 [ Contd......
3  (a) Perform the following:
   (i) \(23789_{10} = \ldots_{2} = \ldots_{8} = \ldots_{16}\)
   (ii) Add \((1101011011011)_{2}\) and \((1100101101111)_{2}\)
(b) Discuss the weighted and non-weighted codes.

4  Write short notes: (any two)
   (a) Applications of XOR and XNOR gate.
   (b) Error detecting and correcting codes.
   (c) Multiplexer and Demultiplexer
   (d) Excess-3 and BCD codes.