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)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **FIRST YEAR B. SC. (SEM. II)**

Name of the Subject :

☛ **ELECTRONICS : PAPER - II (OLD)**

☛ Subject Code No. : **3 3 0 9** ☛ Section No. (1, 2,.....) : **Nil**

Seat No. :

Student's Signature

(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

3 (a) Perform the following : 8

(i) 23789_{10} = _____$_2$ = _____$_8$ = _____$_{16}$

(ii) Add (1101011011011_2) and (110010110111_2)

(b) Discuss the weighted and non-weighted codes. 6

4 Write short notes : (any two) 14

(a) Applications of XOR and XNOR gate.

(b) Error detecting and correcting codes.

(c) Multiplexer and Demultiplexer

(d) Excess-3 and BCD codes.