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# B-211 <br> <br> B.C.A. EXAMINATION, May 2018 <br> <br> B.C.A. EXAMINATION, May 2018 <br> (Second Semester) <br> (B. Scheme) (Main \& Re-appear) <br> BCA102B <br> DIGITAL CIRCUITS AND LOGIC DESIGN 

Time : 3 Hours]
[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt Five questions from given eight and any one at least from each Section. All questions carry equal marks.

## Unit I

1. (a) Explain the floating point way of representation of numbers. 5
(b) Solve the following using K-Map : 10 $f(\mathrm{~A}, \mathrm{~B}, \mathrm{C}, \mathrm{D})=\Sigma(1,3,5,7,9,11,13)$ $+d(2,12)$.
2. Explain error detecting and correcting codes with the help of an example. 15

## Unit II

3. (a) State and explain De Morgan's theorem.
(b) Explain ASCII and EBCDIC Codes. 5
(c) What are the Venn diagrams ? Where these are used ? 5
4. Convert the following :

| $(10011.011)_{2}$ | $=($ | $)_{8}$ |
| :--- | :--- | :--- |
| $(245.61)_{8}$ | $=($ | $)_{16}$ |
| $(4 \mathrm{~F} 2.6 \mathrm{~A})_{16}$ | $=($ | $)_{12}$ |
| $(10101.1010)_{2}$ | $=($ | $)_{10}$ |

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## Unit III

5. (a) Realize OR, AND and NOT gates with the help of only NAND gates. 71/2
(b) Explain the working of multi level NAND and NOR Circuits.
6. (a) Realize a Excess three Code Converter.
(b) Realize Binary to Gray Code Converter.

## Unit IV

7. (a) Realize XOR gate with the help of only four NAND Gates. 5
(b) Explain working and design of BCD to Seven Segment decoder.10
8. Write short notes on the following :
(a) Demultiplexer
(b) Comparator.
