Roll No. | | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 16

BCA (2014 to 2018 Batch) (Sem.–3)

DIGITAL CIRCUITS AND LOGIC DESIGN

Subject Code : BSBC-303

M.Code : 10059

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**
3. **Use of non-programmable scientific calculator is allowed.**

SECTION-A

Answer briefly :

1. What is NAND gate?
2. What is half adder?
3. What is binary subtractor?
4. What is multiplexer?
5. Differentiate between RS and JK flip-flop.
6. Explain Synchronous counter.
7. What is race condition?
8. Covert octal 736.4 to decimal.
9. What is up-down counter?
10. What is 1's complement of 0001111?

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SECTION-B

11. Explain design of synchronous counters.

12. Explain different types of flip-flops.

13. Explain different types of logic gates.

14. Differentiate between :

    a. encoder and decoder.

    b. half adder and full adder

15. a. Explain MOD-N counters

    b. Convert the hexadecimal number F3A7C2 to binary and octal.

16. a. Simplify the Boolean function $F(A,B,C,D)= \sum(3,7,11,13,14,15)$ in sum-of-products form.

    b. Explain the concept of binary adder.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

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