

Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

BCA (2013 & Onward) (Sem.-3)
DIGITAL CIRCUITS AND LOGIC DESIGN
Subject Code : BSBC-303
M.Code : 10059

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION 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 a student has to attempt any **FOUR** questions.

SECTION-A

1) **Answer briefly :**

- a) Write the importance of Hexadecimal Numbers.
- b) Convert binary number 10011101 into hexadecimal number.
- c) Write about syntax of 2's complement.
- d) What is the purpose of a *K* Map?
- e) Give main objectives of POS.
- f) What is use of *T* Flip Flop?
- g) Define race condition in JK flip flop.
- h) What is Encoder?
- i) Draw block diagram of *up down* counter.
- j) Discuss 555 timer as monostable.

SECTION-B

2. Explain different logic gates families in digital circuits. Write a short note on Universal Gate.
3. Solve the following Boolean functions by using K-Map :
$$F = (w,x,y,z) = \Sigma (0,1,4,5,6,8,9,10,12,13,14)$$
4. Explain the full adder circuit using logic diagram and Truth Table.
5. What are sequential logic circuits? Draw the logic diagram of JK Flip Flop.
6. Define Multiplexer. Give the example of 4×1 multiplexer. Draw its truth table.
7. What is asynchronous counter? How would you design asynchronous counter?

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.