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
Paper ID : [B0230]

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

Q1) Answer briefly :

a) What are universal gates?

b) Draw circuit of full adder with truth table.

c) What are the steps of removing race condition?

d) Write a short note on decoder.

e) What are combinational circuits?

f) Convert $(274)_{10} = (?)_2$.

g) What is a latch?

h) What is parallel binary adder?

i) Write a short note on D flip flop.

j) What is the use of K maps?

SECTION-B

Q2) Explain half adder and full adder in detail.

Q3) What are multiplexers? Design and explain the working of 16 to 1 line multiplexer.

Q4) Discuss flip flops. What are its different types and applications?

Q5) Explain the internal architecture of 555 timer in detail.

Q6) What is number system? Explain l'^{s} complement and 2's complement with example.

Q7) Write a short note on Encoders. Discuss their applications. Design an 8- Input Priority Encoder using basic gates.