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

Total No. of Questions : 07

BCA (Sem.–3rd) (2011 Batch)
DIGITAL CIRCUITS & 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 students has to attempt any FOUR questions.**

SECTION-A

l. **Write briefly :**

a) Convert decimal number 25 to Binary system.

b) Draw the circuit of NAND and NOR gates.

c) Differentiate between Half adder & Full adder.

d) What is meant by sum of products?

e) What is the role of multiplexer?

f) Discuss the significance of race condition.

g) How asynchronous counter is designed?

h) What is meant by combinational circuits?

i) Write short notes on Boolean algebra.

j) Write short notes on 1's complement.

SECTION-B

2. What are the different types of number systems? Discuss the features of Octal and Hexadecimal number systems.

3. How Boolean expression can be realized using gates and how K-maps simplify Boolean Expressions? Explain.

4. Discuss the circuit diagram and truth table of D and T flip flops.

5. How clock pulse generator is designed using 555 timer as multivibrator? Explain.

6. Discuss the functioning of multiplexer and demultiplexer circuit using circuit diagrams.

7. Write short notes on the following :

   a) Encoder

   b) MOD-N counters