Visit **www.brpaper.com** for
downloading previous years question papers of B-tech,Diploma,BBA,BCA,
MBA,MCA,Bsc-IT,M-Tech,PGDCA,B-com

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

Total No. of Questions : 09

B.Tech.(CSE / IT) (Sem.–3)

DIGITAL CIRCUITS AND LOGIC DESIGN

Subject Code : CS-205

Paper ID : [A0453]

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 FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

brpaper.com

SECTION-A

Q1) Write briefly :

a) Differentiate between synchronous and asynchronous counters.

b) How do Demultiplexer differ from Decoder?

c) Subtract –26 from 67 using 2's complement.

d) Are CMOS memory chips better over bipolar memory chips? Comment.

e) Convert : $(153.513)_{10} = (\ )_8$

f) Outline two major applications of multi-vibrators?

g) What is meant by resolution of an A/D convertor?

h) Find x : $(BEE)_x = (2699)_{10}$

i) A preset able counter has sixteen flip-flops. If the preset number is 125, what is the modulus?

j) What is the minimum voltage value that is considered as high stage input for TTL logic family?

Visit **www.brpaper.com** for
downloading previous years question papers of B-tech,Diploma,BBA,BCA,
MBA,MCA,Bsc-IT,M-Tech,PGDCA,B-com

SECTION-B

Q2) Draw the logic symbol and construct the truth table for each of the following gates :

a. Three input NAND gate

b. Two input OR gate

c. Three input EX-NOR gate

Q3) What is an Encoder? Compare a decoder and a Multiplexer with suitable block diagrams.

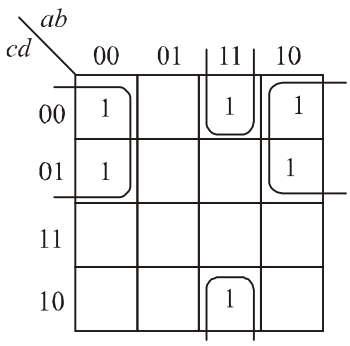
Q4) Design a MOD-3 synchronous counter using J-K Flip Flops.

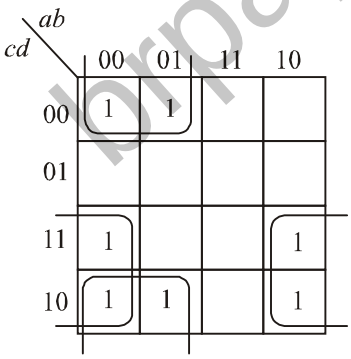
Q5) Differentiate between static MOS and Dynamic MOS RAM. Explain the working of a static MOS RAM cell with the help of a circuit diagram.

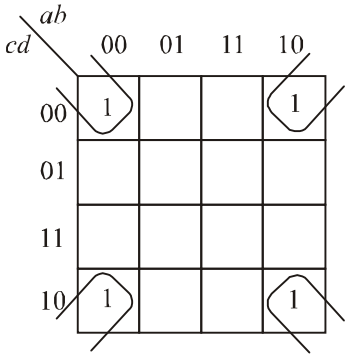
Q6) State and prove De-Morgan's Theorem for three variables.

SECTION-C

Q7) Write out the minimized Boolean Algebra Expression for each of the Karnaugh maps below. Also, Construct Truth tables for each of the maps.







Q8) Elaborate VLSI design with an example of custom and semi-custom design.

Q9) Write short notes on :

a) Semiconductor memories

b) Bus Structures

brpaper.com