

V.P. & R.P.T.P. Science College
S Y BSc (SEMESTER III) Internal EXAMINATION
US03ECSC01 : Digital Computer & Electronics

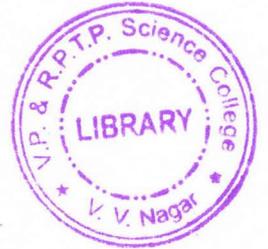
Date: 04/10/2013, FRIDAY

Time: 01.00PM to 02.00PM

Marks: 30

Q.1 Multiple Choice Questions [06]

1. The _____ gate has two or more input signals. All inputs must be high to get a high output.
[a] AND [b] OR [c] NAND [d] NOR
2. De Morgan's first theorem says that a NOR gate is equivalent to a _____.
[a] bubbled OR [b] bubbled NOR
[c] bubbled AND [d] AND bubbled
3. A _____ is a combinational circuit that converts binary information from the n coded inputs to a maximum of 2^n unique outputs.
[a] Half Adder [b] Decoder
[c] Encoder [d] Comparator
4. _____ is way to simplify the equation.
[a] Boolean Algebra [b] K-MAP [c] BOTH [d] None
5. Half adder consists of _____ & _____ Gates.
[a] XOR, AND [b] XOR, OR [c] XNOR, AND [d] XNOR, OR
6. The full adder circuit adds _____ digit at a time.
[a] 1 [b] 2 [c] 3 [d] None



Q.2 Answer the following in short (Any Three) [06]

1. Explain Associative law and distributive law.
2. Explain De'morgan second theorem.
3. Short note on comparator.
4. Explain sum of product (SOP).
5. Explain half adder in detail.
6. Draw the circuit and truth table of full adder.

Q.3 Explain NOR, NAND and XNOR gate. [06]
OR

Q.3 Simplify Boolean expression and draw circuit for [06]
[a] $AB'+C'D+AB+CD$ [b] $ABC'+ABC+A'BC$.

Q.4 Define encoder. Explain 8x3 Encoder in detail. [06]
OR

Q.4 Simplify the following using K-Map : [06]
[a] $F(A,B,C)=\Sigma(4,6,2)$ [b] $F(A,B,C,D)=\Sigma(1,3,5,6,8,11,15)$

Q.5 What is Multiplexer? Explain 4x1 multiplexer in detail. [06]
OR

Q.5 Explain binary adder-subtractor in detail. [06]

Best Of Luck