**Number System, Boolean algebra, Logic Gates**

Question 1: The output of a logic gate is 1 when all its inputs are at logic 0. the gate is either

A. a NAND or an EX-OR

B. an OR or an EX-NOR

C. an AND or an EX-OR

D. a NOR or an EX-NOR

Question 2: How many AND gates are required to realize Y = CD+EF+G

A. 4

B. 5

C. 3

D. 2

Question 3: The binary addition 1 + 1 + 1 gives

A. 111

B. 10

C. 110

D. 11

Question 4: The NAND gate output will be low if the two inputs are

A. 00

B. 01

C. 10

D. 11

Question 5: If a 3-input NOR gate has eight input possibilities, how many of those possibilities will result in a HIGH output?

A. 1

B. 2

C. 7

D. 8

Question 6: When an input signal A=11001 is applied to a NOT gate serially, its output signal is

A. 00111

B. 00110

C. 10101

D. 11001

Question 7: What is the minimum number of two-input NAND gates used to perform the function of two input OR gate

A. 1

B. 2

C. 3

D. 4

Question 8: The simplest equation which implements the K-map shown below is:

C’ C

|  |  |
| --- | --- |
| 0 | 0 |
| 1 | 1 |
| 1 | 1 |
| 0 | 1 |

A’B’

A’B

AB

AB’

A. X = AC +B

B. X = AC’

C. X = ABC + ABC’ + AB’C

D. X = AB +AB’

Question 9: Which gate is best used as a basic comparator?

1. NOR
2. OR
3. Exclusive-OR
4. AND