Digital Electronic Quiz - Answers

1. 182

2. 11111001

3. 10001101 103 + 38 = 141

4. Truth Tables

A	B	AND	OR	XOR	EQV	NAND	NOR
0	0	0	0	0	1	1	1
0	1	0	1	1	0	1	0
1	0	0	1	1	0	1	0
1	1	1	1	0	1	0	0

5A. DeMorgan $\overline{A \text{ AND } B} = \overline{A} \text{ OR } \overline{B}$

A	B	$\overline{A \text{ AND } B}$	$\overline{A}$ OR $\overline{B}$
0	0	1	1
0	1	1	1
1	0	1	1
1	1	0	0

5B. DeMorgan $\overline{A \text{ OR } B} = \overline{A} \text{ AND } \overline{B}$

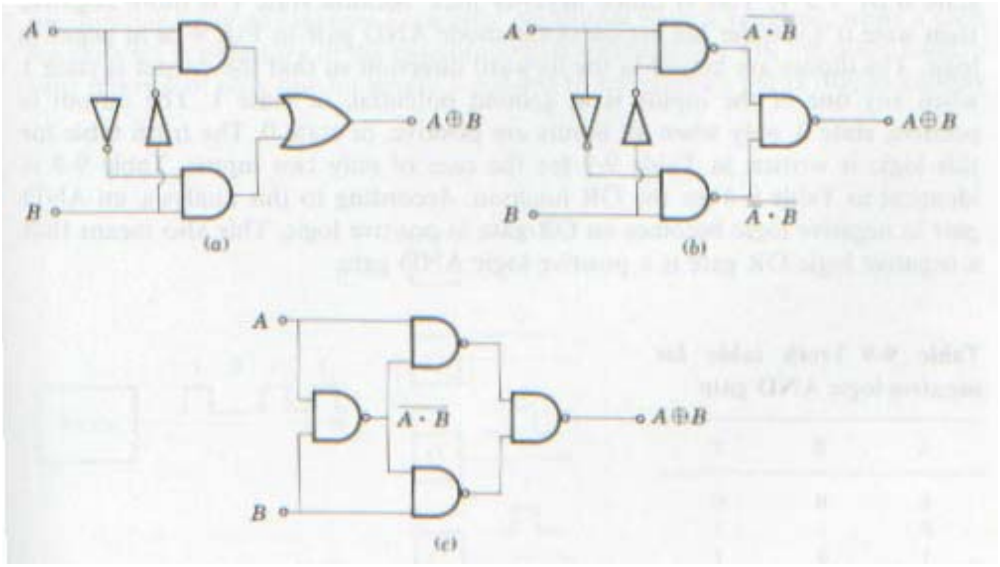
A	B	$\overline{A \text{ OR } B}$	$\overline{A}$ AND $\overline{B}$
0	0	1	1
0	1	0	0
1	0	0	0
1	1	0	0

6.

A	B	A XOR B	$\overline{A}B$	$A\overline{B}$	$\overline{A}B + A\overline{B}$
0	0	0	0	0	0
0	1	1	0	1	1
1	0	1	1	0	1
1	1	0	0	0	0

7. $\overline{\overline{A} + \overline{B}} = A \cdot B$

8 a. **AND** = Two NAND gates in series
b. **OR** = One NAND Gate with inverted inputs
c. **XOR**



d. **EQV** = Inverted XOR

9. For P = True Q = False

a.	P AND Q	False
b.	P AND NOT Q	True
c.	NOT P OR NOT Q	True
d.	NOT P XOR Q	False
e.	NOT P EQV Q	True