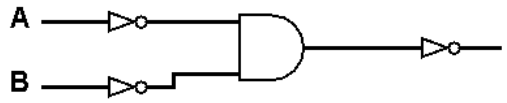
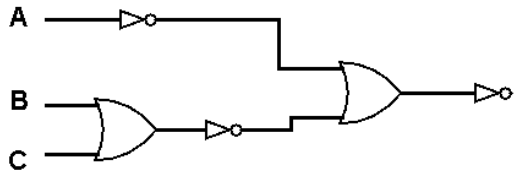
Review Questions 10

For the following logic diagrams, determine the final output, then reduce the output expression using the reference table and draw its equivalant, verify using truth table

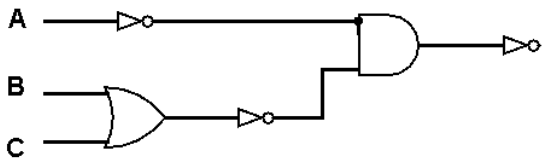
1.



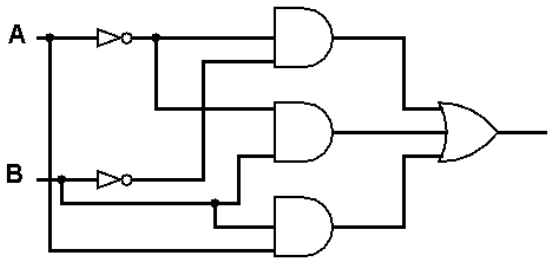
2.



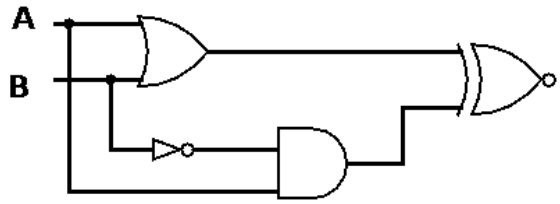
3.



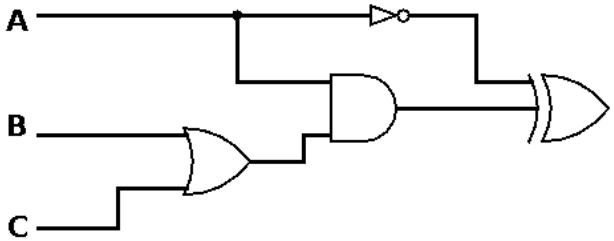
4.



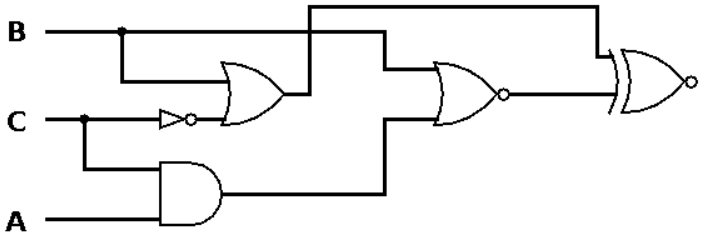
5.



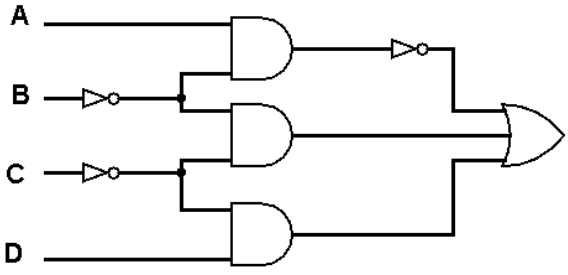
6.



7.



8.



Answers:

1. $\overline{\overline{A}\,\overline{B}}$ reduces to $A+B$

2. $\overline{\overline{A}+\overline{B+C}}$ reduces to $A(B+C)$

3. $\overline{\overline{A}(\overline{B+C})}$ reduces to $A+B+C$

4. $\overline{A}\,\overline{B}+\overline{A}\,B+AB$ reduces to $\overline{A}+AB$ further reduces to $\overline{A}+B$ using absorption theorem

5. $\overline{(A+B)\oplus(A\,\overline{B})}$ reduces to $\overline{B}$

6. $(\overline{A})\oplus[A(B+C)]$ reduces to $\overline{A}+A(B+C)$ further reduces to $\overline{A}+B+C$ using absorption theorem

7. $\overline{(B+\overline{C})\oplus(\overline{AC+B})}$ reduces to $\overline{B}\,\overline{C}+\overline{B}\,CA$ further reduces to $\overline{B}(\overline{C}+A)$ using absorption theorem

8. $\overline{A\,\overline{B}}+\overline{B}\,\overline{C}+\overline{C}\,D$ reduces to $\overline{A}+B+\overline{B}\,\overline{C}+\overline{C}\,D$ further reduces to $\overline{A}+B+\overline{C}$