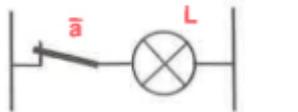
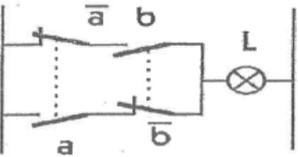
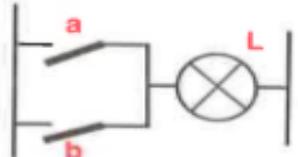


**Exercice 1 :**

1. Complétez le tableau suivant :

| Opérateur              | Schéma à contacts   | Symbole logique | Table vérité   | Equation logique |                |   |   |   |   |             |  |  |  |  |  |  |
|------------------------|---|-----------------|--|------------------|----------------|---|---|---|---|-------------|--|--|--|--|--|--|
|                        |   |                 | <table border="1"> <tr> <td>e</td> <td>S</td> </tr> <tr> <td>0</td> <td>0</td> </tr> <tr> <td>1</td> <td>1</td> </tr> </table>   | e                | S              | 0 | 0 | 1 | 1 | $S=e$       |  |  |  |  |  |  |
| e                      | S   |                 |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
| 0                      | 0   |                 |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
| 1                      | 1   |                 |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
|                        |    |                 | <table border="1"> <tr> <td>e</td> <td>S</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </table>   | e                | S              |   |   |   |   | $S=\bar{e}$ |  |  |  |  |  |  |
| e                      | S   |                 |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
|                        |   |                 |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
|                        |   |                 |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
| <b>ET</b>              |   |                 | <table border="1"> <tr> <td>e<sub>1</sub></td> <td>e<sub>2</sub></td> <td>S</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table> | e <sub>1</sub>   | e <sub>2</sub> | S |   |   |   |             |  |  |  |  |  |  |
| e <sub>1</sub>         | e <sub>2</sub>  | S               |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
|                        |   |                 |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
|                        |   |                 |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
|                        |   |                 |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
|                        |  |                 | <table border="1"> <tr> <td>e<sub>1</sub></td> <td>e<sub>2</sub></td> <td>S</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table> | e <sub>1</sub>   | e <sub>2</sub> | S |   |   |   |             |  |  |  |  |  |  |
| e <sub>1</sub>         | e <sub>2</sub>  | S               |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
|                        |   |                 |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
|                        |   |                 |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
|                        |   |                 |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
|                        |  |                 | <table border="1"> <tr> <td>e<sub>1</sub></td> <td>e<sub>2</sub></td> <td>S</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table> | e <sub>1</sub>   | e <sub>2</sub> | S |   |   |   |             |  |  |  |  |  |  |
| e <sub>1</sub>         | e <sub>2</sub>  | S               |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
|                        |   |                 |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
|                        |   |                 |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
|                        |   |                 |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
| <b>OU-NON Exclusif</b> |   |                 | <table border="1"> <tr> <td>e<sub>1</sub></td> <td>e<sub>2</sub></td> <td>S</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table> | e <sub>1</sub>   | e <sub>2</sub> | S |   |   |   |             |  |  |  |  |  |  |
| e <sub>1</sub>         | e <sub>2</sub>  | S               |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
|                        |   |                 |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
|                        |   |                 |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |
|                        |   |                 |  |                  |                |   |   |   |   |             |  |  |  |  |  |  |

**Corrigés**

1. Complétez le tableau suivant :

| Opérateur              | Schéma à contacts | Symbole logique | Table vérité  | Equation logique |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
|------------------------|-------------------|-----------------|---|------------------|----|---|---|---|---|-------------|---|---|---|---|---|---|---|---|---|
| <b>OUI</b>             |                   |                 | <table border="1"> <tr> <th>e</th> <th>S</th> </tr> <tr> <td>0</td> <td>0</td> </tr> <tr> <td>1</td> <td>1</td> </tr> </table>  | e                | S  | 0 | 0 | 1 | 1 | $S=e$       |   |   |   |   |   |   |   |   |   |
| e                      | S                 |                 |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 0                      | 0                 |                 |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 1                      | 1                 |                 |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| <b>NON</b>             |                   |                 | <table border="1"> <tr> <th>e</th> <th>S</th> </tr> <tr> <td>0</td> <td>1</td> </tr> <tr> <td>1</td> <td>0</td> </tr> </table>  | e                | S  | 0 | 1 | 1 | 0 | $S=\bar{e}$ |   |   |   |   |   |   |   |   |   |
| e                      | S                 |                 |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 0                      | 1                 |                 |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 1                      | 0                 |                 |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| <b>ET</b>              |                   |                 | <table border="1"> <tr> <th>e1</th> <th>e2</th> <th>S</th> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>1</td> <td>0</td> <td>0</td> </tr> <tr> <td>0</td> <td>1</td> <td>0</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> </tr> </table> | e1               | e2 | S | 0 | 0 | 0 | 1           | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | $S = e_1 \cdot e_2$   |
| e1                     | e2                | S               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 0                      | 0                 | 0               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 1                      | 0                 | 0               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 0                      | 1                 | 0               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 1                      | 1                 | 1               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
|                        |                   |                 | <table border="1"> <tr> <th>e1</th> <th>e2</th> <th>S</th> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>0</td> <td>1</td> <td>1</td> </tr> <tr> <td>1</td> <td>0</td> <td>1</td> </tr> <tr> <td>1</td> <td>1</td> <td>0</td> </tr> </table> | e1               | e2 | S | 0 | 0 | 0 | 0           | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | $S = e_1 \oplus e_2$<br>$S = \bar{e}_1.e_2 + e_1.\bar{e}_2$ |
| e1                     | e2                | S               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 0                      | 0                 | 0               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 0                      | 1                 | 1               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 1                      | 0                 | 1               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 1                      | 1                 | 0               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| <b>OU</b>              |                   |                 | <table border="1"> <tr> <th>e1</th> <th>e2</th> <th>S</th> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>0</td> <td>1</td> <td>1</td> </tr> <tr> <td>1</td> <td>0</td> <td>1</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> </tr> </table> | e1               | e2 | S | 0 | 0 | 0 | 0           | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | $S = e_1 + e_2$   |
| e1                     | e2                | S               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 0                      | 0                 | 0               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 0                      | 1                 | 1               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 1                      | 0                 | 1               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 1                      | 1                 | 1               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| <b>OU-NON Exclusif</b> |                   |                 | <table border="1"> <tr> <th>e1</th> <th>e2</th> <th>S</th> </tr> <tr> <td>0</td> <td>0</td> <td>1</td> </tr> <tr> <td>0</td> <td>1</td> <td>0</td> </tr> <tr> <td>1</td> <td>0</td> <td>0</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> </tr> </table> | e1               | e2 | S | 0 | 0 | 1 | 0           | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | $S = e_1 \odot e_2$<br>$S = \bar{e}_1.\bar{e}_2 + e_1.e_2$  |
| e1                     | e2                | S               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 0                      | 0                 | 1               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 0                      | 1                 | 0               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 1                      | 0                 | 0               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |
| 1                      | 1                 | 1               |   |                  |    |   |   |   |   |             |   |   |   |   |   |   |   |   |   |