**Devoir Maison – I22 : Architecture des ordinateurs**

**Diagramme d’états :**

Nord /0010

RE

RN

Sud /1000

Ouest /----

Est /0001

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Etats/Entrées | RN | RE | RS | RO | Sortie (MN, ME, MS, MO) |
| Nord | Est | - | - | - | 0010 |
| Est | - | Sud | - | - | 0001 |
| Sud | - | - | - | - | 1000 |
| Ouest | - | - | - | - | 0000 |

**Diagramme de Phases :**

Ouest /----

Sud /1000

Est /0001

Nord /0010

**Tables de Karnaugh :**

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**MS :** RN\*RS + RN\*RS = RN

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | RN RS | 00 | 01 | 11 | 10 |
| RE RO |  |  |  |  |  |
| 00 |  | 1 | 1 | 0 | 0 |
| 01 |  | 1 | 1 | 0 | 0 |
| 11  \_ | \_  \_ | 1  \_ | 1 | 0 | 0 |
| 10 |  | 1 | 1 | 0 | 0 |

**MO :** RE\*RO +RE\*RO = RE

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | RN RS | 00 | 01 | 11 | 10 |
| RE RO |  |  |  |  |  |
| 00 |  | 1 | 1 | 1 | 1 |
| 01 |  | 1 | 1 | 1 | 1 |
| 11 |  | 0 | 0 | 0 | 0 |
| 10 |  | 0 | 0 | 0 | 0 |

**MN :** RN\*RS + RN\*RS = RS

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|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | RN RS | 00 | 01 | 11 | 10 |
| RE RO |  |  |  |  |  |
| 00 |  | 1 | 0 | 0 | 1 |
| 01 |  | 1 | 0 | 0 | 1 |
| 11 |  | 1 | 0 | 0 | 1 |
| 10 |  | 1 | 0 | 0 | 1 |

**ME :**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | RN RS | 00 | 01 | 11 | 10 |
| RE RO |  |  |  |  |  |
| 00 |  | 0 | 0 | 0 | 0 |
| 01 |  | 0 | 0 | 0 | 0 |
| 11 |  | 0 | 0 | 0 | 0 |
| 10 |  | 0 | 0 | 0 | 0 |

**Schémas des circuits :**

**MS :**

RN

RS

RE

RO

**MO :**

RN

RS

RE

RO

**MN :**

RN

RS

RE

RO

**ME :**

RN

RS

RE

RO