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**DIRECCIÓN ACADÉMICA**

**DEPARTAMENTO DE ELECTRÓNICA**

**Respeto – Responsabilidad – Resiliencia – Tolerancia**

**6°GUÍA DE AUTOAPRENDIZAJE**

**MÓDULO : Proyectos y Ensamblaje
TEMA: “Diseño de Circuitos con Compuertas AND y OR”**

**Nombre: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Curso 3°B Fecha: \_\_\_\_/\_\_\_\_/2020**

**Objetivo:**

* **Reconocer el procedimiento para diseñar circuitos digitales**
* **Relacionar el funcionamiento de un circuito con compuertas AND y OR**

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| **Diseño de Circuitos Digitales con Compuertas And y Or** |
|  **1.- Considerar en la tabla de Verdad, solamente cuando hay un 1 en la Salida.**

|  |  |  |  |
| --- | --- | --- | --- |
| C | B | A | Salida |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | **1** |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | **1** |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | **1** |
| 1 | 1 | 1 | **1** |

  | **3.- Arma circuito con una columna de compuertas AND y todas hacia una compuerta OR.** |
| **2.- Considerar cada Combinación en la cual está un 1 en la salida**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | C | B | A | Salida |
|  |  |  |  | 0 |
|  |  |  |  | 0 |
| **C** B **A** | *0* | *1* | *0* | **①** |
|  |  |  |  | 0 |
| C **B A** | *1* | *0* | *0* | **①** |
|  |  |  |  | 0 |
| C B **Ā** | *1* | *1* | *0* | **①** |
| C B A | *1* | *1* | *1* | **①** |

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**Actividad 1** : Diseñar el Circuito del Semáforo según la siguiente tabla de verdad.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  |

|  |  |
| --- | --- |
| ENTRADAS | SALIDAS |
| C | B | A | Lv | La | Lr |
| 0 | 0 | 0 | **1** | 0 | 0 |
| 0 | 0 | 1 | **1** | 0 | 0 |
| 0 | 1 | 0 | **1** | 0 | 0 |
| 0 | 1 | 1 | 0 | **1** | 0 |
| 1 | 0 | 0 | 0 | **1** | 0 |
| 1 | 0 | 1 | 0 | 0 | **1** |
| 1 | 1 | 0 | 0 | 0 | **1** |
| 1 | 1 | 1 | 0 | 0 | **1** |

 |
| DISEÑO : |

**Actividad 1** : Diseñar el Circuito de las Luces Secuenciales de Fiestas según la siguiente tabla de verdad.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |

|  |  |
| --- | --- |
| Entradas | SALIDAS |
| D | C | B | A | Lv | Lr | La |
| 0 | 0 | 0 | 0 | *1* | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 | *1* | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | *1* |
| 0 | 0 | 1 | 1 | 0 | *1* | 0 |
| 0 | 1 | 0 | 0 | *1* | 0 | 0 |
| 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 1 | 0 | *1* | 0 | *1* |
| 0 | 1 | 1 | 1 | 0 | *1* | 0 |
| 1 | 0 | 0 | 0 | *1* | *1* | *1* |
| 1 | 0 | 0 | 1 | 0 | *1* | *1* |
| 1 | 0 | 1 | 0 | 0 | 0 | *1* |
| 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 0 | 0 | 0 | *1* |
| 1 | 1 | 0 | 1 | 0 | *1* | 0 |
| 1 | 1 | 1 | 0 | *1* | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 | 0 | 0 |

 |
| DISEÑO : |

***Recuerda consultar al Profesor Marco Guzmán ó Profesor Oscar Conejero al correo electrónico*** ***electronicacestarosa@gmail.com*** ***o también en Classroom de Electrónica Digital, si tienes algunas preguntas o dudas.***