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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** | |

**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.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | 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***](mailto:electronicacestarosa@gmail.com) ***o también en Classroom de Electrónica Digital, si tienes algunas preguntas o dudas.***