**Assignment**

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**Roll #:** 44

**Teacher:** Miss Maleeha Anwar

**Topic:** Decoder

**Section:** Sec A (Evening)

**Program:** BSSE

**Q1: Give any example of 3x8 Decoder.**

In 3x8 decoder no of inputs are 3 , so number of outputs will be ,

n = 3 , 2n= 23 = 8

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **I0** | **I1** | **I2** | **O0** | **O1** | **O2** | **O3** | **O4** | **O5** | **O6** | **O7** |
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

**Circuit Diagram:**

**I0 I1 I2**

**I’0 I’1 I’2**

**O0**

**O1**

**O2**

**O3**

**O4**

**O5**

**O6**

**O7­­**

**Block Diagram:**

I0 O0

O1

O2

I1 O3

O4

O5

I2  O6

O7

E

**Q2: Why we use decoder?**

The decoder is a circuit used to change the code into a set of signals. The name itself tells the decoder because it has the reverse of encoding.