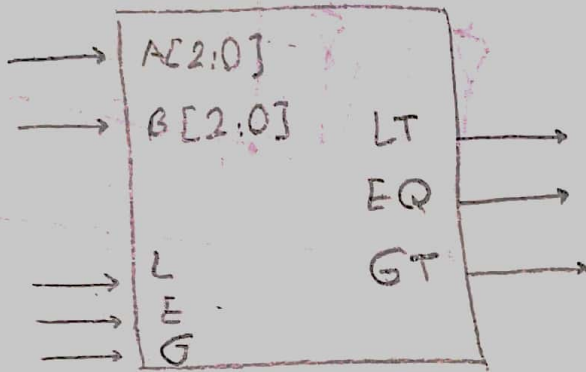


3-bit comparator

فرنی:



$$(C_2 \cdot C_1 \cdot C_0) = e$$

$$C_0 = A_0 \odot B_0$$

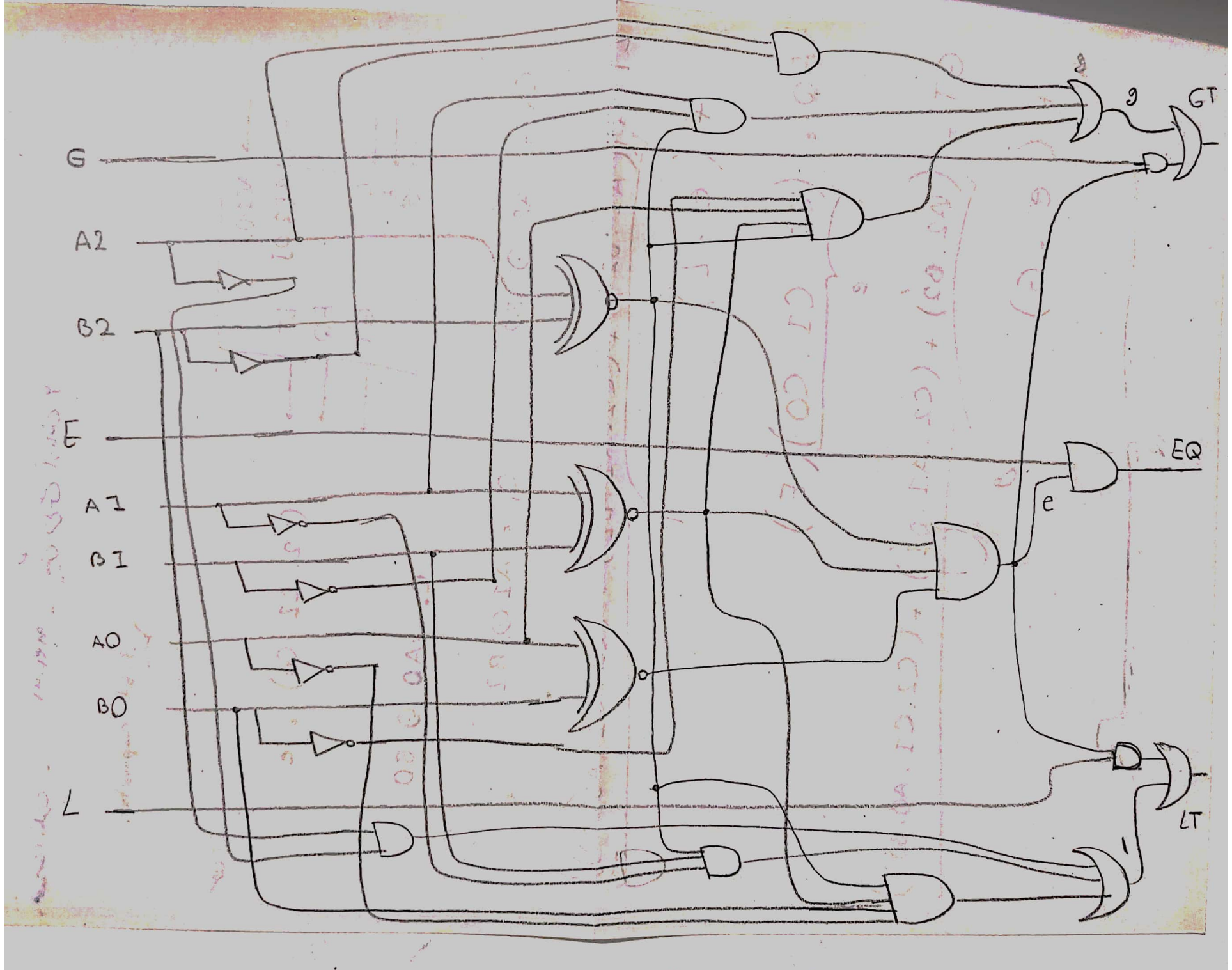
$$C_1 = A_1 \odot B_1$$

$$C_2 = A_2 \odot B_2$$

$$LT = \underbrace{((A_2' \cdot B_2) + (C_2 \cdot A_1' \cdot B_1) + (C_2 \cdot C_1 \cdot A_0' \cdot B_0))}_{e} + (e \cdot L)$$

$$EQ = \underbrace{(C_2 \cdot C_1 \cdot C_0)}_e (E)$$

$$GT = \underbrace{((A_2 \cdot B_2') + (C_2 \cdot A_1 \cdot B_1'))}_{e} + (e \cdot G)$$



```
module 3-bitComparator (GT, EQ, LT, A, B, G, E, L);
```

```
input [3:0] A, B;
```

```
input G, E, L;
```

```
output GT, EQ, LT;
```

```
wire g, e, l;
```

```
assign g = A > B;
```

```
assign e = A == B;
```

```
assign l = A < B;
```

```
assign GT = e ? G : g; l (e & G) | g;
```

```
assign EQ = e ? E : e; l (e & E);
```

```
assign LT = e ? L : l; l (e & L) | l;
```