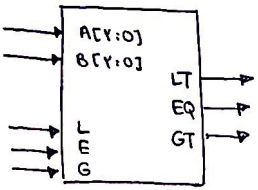
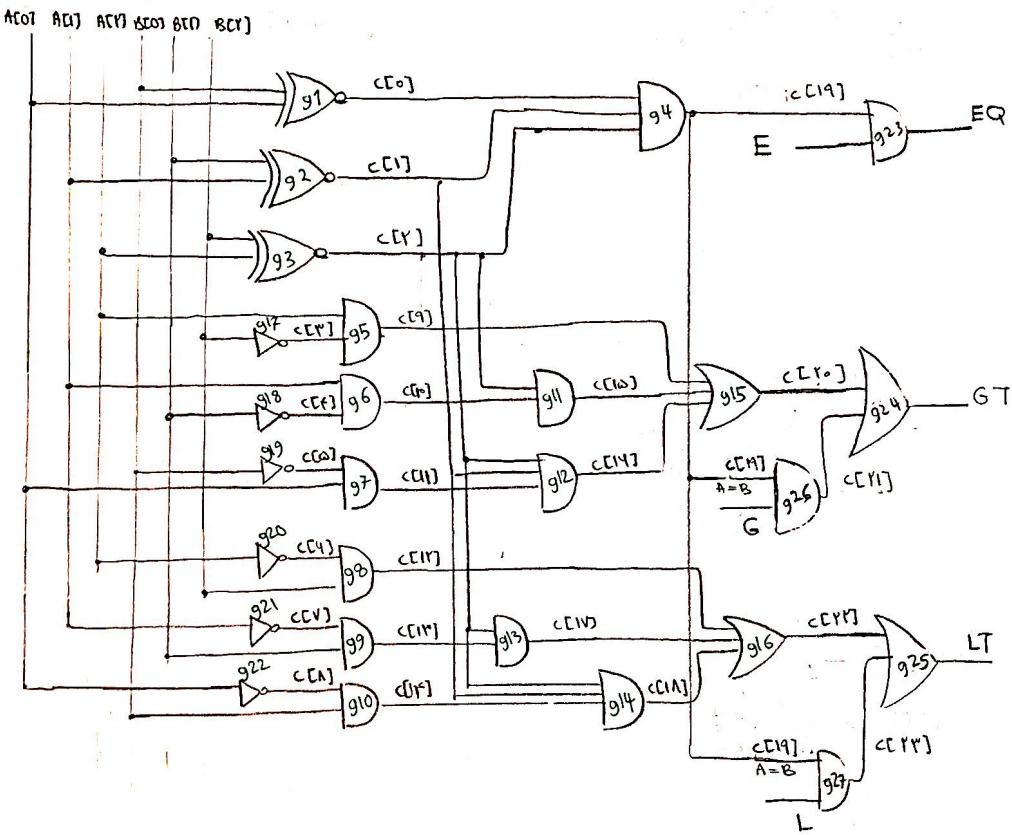


$$EQ = \underbrace{(A[0] \oplus B[0])'}_{c[0]} \cdot \underbrace{(A[1] \oplus B[1])'}_{c[1]} \cdot \underbrace{(A[2] \oplus B[2])'}_{c[2]}$$

$$GT = (A[2].B[2]') + c[2].(A[1].B[1]') + c[1].[2].(A[0].B[0]')$$

$$LT = (A'[2].B[2]) + c[2](A'[1].B[1]) + c[1].c[2].(A'[0].B[0])$$



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```
module comparator3(
        input [2:0] A;
        input [2:0] B;
        input       l,
        input       g,
        output      lt,
        output      et,
        output      gt
);

    wire c[19:0];
    xnor
            g1( c[0], A[0],B[0]),
            g2( c[1], A[1], B[1]),
            g3( c[2], A[2], B[2]);
    not
            g17( c[18], B[2] ),
            g18 ( c[5], B[1] );
            g19 ( c[3], B[0]),
            g20( c[4], A[2]),
            g21( c[6], A[1]),
            g22( c[8], A[0]);
    and
            g11 ( c[13], c[2], c[10]) ;
            g12 ( c[14], c[11], c[2],c[1]);
            g13 ( c[16], c[17],c[2]);
            g14 ( c[18] , c[1],c[2] ,c[15]);
            g5 ( c[9], c[2], A[2]);
            g6 (c[10], c[5], A[1]);
            g7 ( c[11], c[3], A[0]);
            g8 ( c[12], c[4], B[2]);
            g9 ( c[12], c[6], B[1]),
            g10 ( c[15], c[8] ,B[0]),
            g4 ( c[19], c[0], c[1],c[2]),
            g26( c[21], c[19], g),
            g27( c[23], c[19], l);
            g23( et, c[19], e); (2)
```

```
or  g15(c[6], c[13], c[14], c[9]) ;
    g16( gt, c[2], c[20]);
    g17( lt, c[22], c[12]);
    g16 (c[12], c[18], c[16], c[17]);
endmodule
```

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