```
`timescale 1ns / 1ps
//////////////////////////////////////////////////////////////////////////////////
// Company:
// Engineer:
//
// Create Date: 10/22/2020 02:40:39 PM
// Design Name:
// Module Name: Segment_Display
// Project Name:
// Target Devices:
// Tool Versions:
// Description:
//
// Dependencies:
//
// Revision:
// Revision 0.01 - File Created
// Additional Comments:
//
//////////////////////////////////////////////////////////////////////////////////


module Segment_Display(
    input [3:0] n, neg, state,
    output [6:0] sego
    );

    wire s0, s1, s2, s3, s4, s5, s6;

//    assign sego[0] = (s0&(~state|~neg))|(state|neg);
//    assign sego[1] = (s1&(~state|~neg))|(state|neg);
//    assign sego[2] = (s2&(~state|~neg))|(state|neg);
//    assign sego[3] = (s3&(~state|~neg))|(state|neg);
//    assign sego[4] = (s4&(~state|~neg))|(state|neg);
//    assign sego[5] = (s5&(~state|~neg))|(state|neg);
//    assign sego[6] = (s6&(~state|~neg));

    assign sego[0] = s0|neg;
    assign sego[1] = s1|neg;
    assign sego[2] = s2|neg;
    assign sego[3] = s3|neg;
    assign sego[4] = s4|neg;
    assign sego[5] = s5|neg;
    assign sego[6] = s6&~neg;

    MUX8_1 SegA(.in({1'b0, n[0], n[0], 1'b0, 1'b0, ~n[0], 1'b0, n[0]}),
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.sel(n[3:1]), .out(s0));
    MUX8_1 SegB(.in({1'b1, ~n[0], n[0], 1'b0, ~n[0], n[0], 1'b0, 1'b0}),
.sel(n[3:1]), .out(s1));
    MUX8_1 SegC(.in({1'b1, ~n[0], 1'b0, 1'b0, 1'b0, 1'b0, ~n[0], 1'b0}),
.sel(n[3:1]), .out(s2));
    MUX8_1 SegD(.in({n[0], 1'b0, ~n[0], n[0], n[0], ~n[0], 1'b0, n[0]}),
.sel(n[3:1]), .out(s3));
    MUX8_1 SegE(.in({1'b0, 1'b0, 1'b0, n[0], n[0], 1'b1, n[0], n[0]}), .sel(n[3:1]),
.out(s4));
    MUX8_1 SegF(.in({1'b0, n[0], 1'b0, 1'b0, n[0], 1'b0, 1'b1, n[0]}), .sel(n[3:1]),
.out(s5));
    MUX8_1 SegG(.in({1'b0, ~n[0], 1'b0, 1'b0, n[0], 1'b0, 1'b0, 1'b1}),
.sel(n[3:1]), .out(s6));

    //assign sego[6] = neg;

endmodule
```