DELD Theory Assignment.

PG-43. Jaynam Modi. G-3. August 9th, 2020.

Q.1 $F(A,B,C,D) = \sum m (1,3,5,7,8,10,13,15)$
$$+ d(0,2,4,6).$$

AB\CD	00	01	11	10	
00	×	1	1	×	← G1
01	×	1	1	×	
11	0	1	1	0	← G3
10	1	0	0	1	← G2

G2 (label on left side)

G1. -
A	B	C	D
0	0	0	0
0	0	0	1
0	0	1	1	$\Rightarrow \overline{A}$
0	0	1	0
0	1	0	0
0	1	0	1
0	1	1	1
0	1	1	0

G2 -
A	B	C	D
0	0	0	0
0	0	1	0	$\Rightarrow \overline{B}\overline{D}$
1	0	0	0
1	0	1	0

G3-
A	B	C	D
1	1	0	1
1	1	1	1

$\Rightarrow ABD$

hence, $F(A,B,C,D)$

$= \overline{A} + \overline{B}\overline{D} + ABD$

Q2. for A full adder,

A	B	C	carry	sum
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1

hence, sum = $\sum_m (1, 2, 4, 7)$

& carry = $\sum_m (3, 5, 6, 7)$

hence, the circuit is as follows