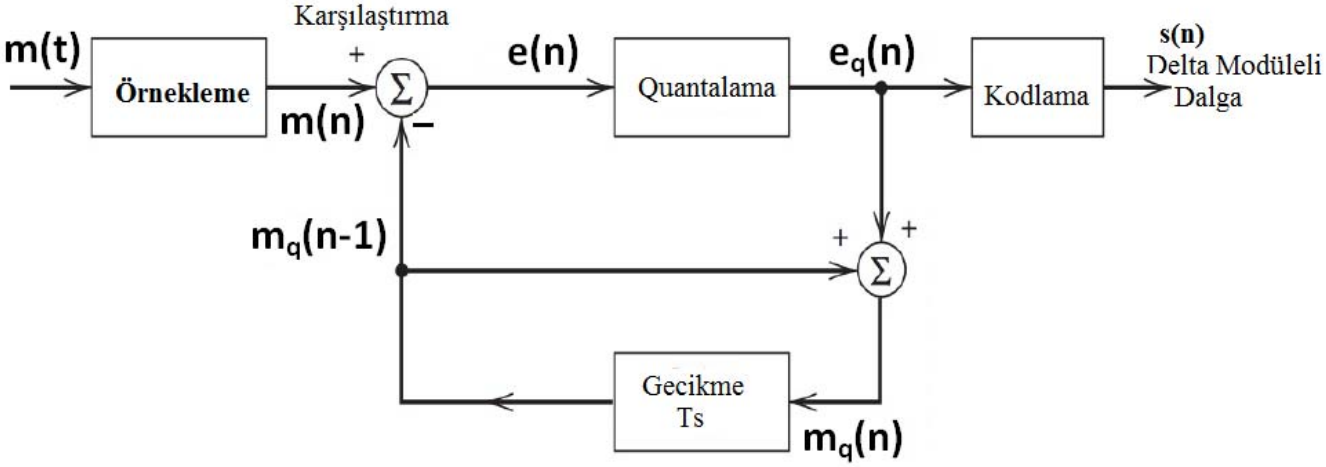
7) Delta Modulasyon devresinde m=[2 4 6 7 8 9 7 4 4 4 4 4 4]; şeklinde giriş olursa s(n) yi hesaplayın. Δ=1.5, mq(0)=0 alin.



Çözüm:

$e(n)=m(n)-m_q(n-1)$ (1)

$e_q(n)= \Delta\ sign(e(n))$ (2)

$m_q(n)= e_q(n)+ m_q(n-1)$ (3)

n	m(n)	e(n)	eq(n)	mq(n)	s(n)
1	2	2	1.5	1.5	1
2	4	2.5	1.5	3	1
3	6	3	1.5	4.5	1
4	7	2.5	1.5	6	1
5	8	2	1.5	7.5	1
6	9	1.5	1.5	9	1
7	7	-2	-1.5	7.5	0
8	4	-3.5	-1.5	6	0
9	4	-2	-1.5	4.5	0
10	4	-0.5	-1.5	3	0
11	4	1	1.5	4.5	1
12	4	-0.5	-1.5	3	0
13	4	1	1.5	4.5	1

8) Delta Modulasyon devresinde m(n)= [2 3 4 6 4 1 3 5 1 3 5] şeklinde giriş olursa s(n) yi hesaplayın. Δ=1.5, mq(0)=0 alin.

n	m(n)	e(n)	eq(n)	mq(n)	s(n)
1	2	2	1.5	1.5	1
2	3	1.5	1.5	3	1
3	4	1	1.5	4.5	1
4	6	1.5	1.5	6	1

5	4	-2	-1.5	4.5	0
6	1	-3.5	-1.5	3	0
7	3	0	0	3	0
8	5	2	1.5	4.5	1
9	1	-3.5	-1.5	3	0
10	3	0	0	3	0
11	5	2	1.5	4.5	1

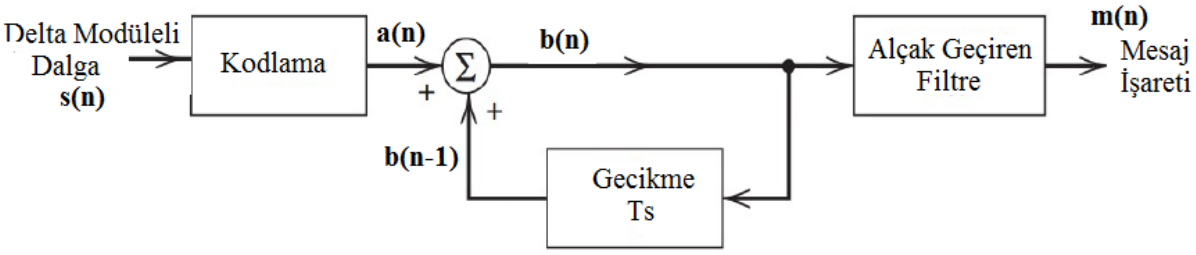
9) Delta Modulasyon devresinde m= [-3 -4 -6 -2 1 0 3 5 1 3 5] şeklinde giriş olursa s(n) yi hesaplayın. Δ=1.5, mq(0)=0 alin.

n	m(n)	e(n)	eq(n)	mq(n)	s(n)
1	-3	-3	-1.5	-1.5	0
2	-4	-2.5	-1.5	-3	0
3	-6	-3	-1.5	-4.5	0
4	-2	2.5	1.5	-3	1
5	1	4	1.5	-1.5	1
6	0	1.5	1.5	0	1
7	3	3	1.5	1.5	1
8	5	3.5	1.5	3	1
9	1	-2	-1.5	1.5	0
10	3	1.5	1.5	3	1
11	5	2	1.5	4.5	1

10)Delta Demodulasyon devresinin girisine

s=[1 1 1 1 1 1 0 0 0 0 1 0 1 0] seklinde giris isareti gelse m(n) yi hesaplayın.

Δ=1.5 V, b(0)=0 varsayin.



Çözüm:

Delta Demodulasyon devresinde b(n)=a(n)+b(n-1) dir.

s(n)=0 ise ➔ a(n)= - Δ= -1.5V

s(n)=1 ise ➔ a(n)= Δ =1.5V

olacaktir.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
s	1	1	1	1	1	1	0	0	0	0	1	0	1	0
a	1.5	1.5	1.5	1.5	1.5	1.5	-1.5	-1.5	-1.5	-1.5	1.5	-1.5	1.5	-1.5

b(0)=0 ise

b(1)=a(1)+b(0)=1.5

b(2)=a(2)+b(1)=1.5+1.5=3

b(3)=a(3)+b(2)=1.5+3=4.5

…….

n	s(n)	a(n)	b(n)
1	1	1.5	1.5
2	1	1.5	3
3	1	1.5	4.5
4	1	1.5	6
5	1	1.5	7.5
6	1	1.5	9
7	0	-1.5	7.5
8	0	-1.5	6
9	0	-1.5	4.5
10	0	-1.5	3
11	1	1.5	4.5
12	0	-1.5	3
13	1	1.5	4.5
14	0	-1.5	3

10)Delta Demodulasyon devresinin girisine

s=[1 1 1 1 0 0 0 1 0 0 1]] seklinde giris isareti gelse m(n) yi hesaplayın. Δ=1.5 V,

b(0)=0 varsayin.

n	s(n)	a(n)	b(n)
1	1	1.5	1.5
2	1	1.5	3
3	1	1.5	4.5
4	1	1.5	6
5	0	-1.5	4.5
6	0	-1.5	3
7	0	-1.5	1.5
8	1	1.5	3
9	0	-1.5	1.5
10	0	-1.5	0
11	1	1.5	1.5

11)Delta Demodulasyon devresinin girisine

s=[0 0 0 1 1 1 1 1 0 1 1]] seklinde giris isareti gelse m(n) yi hesaplayın. Δ=1.5 V,

b(0)=0 varsayin.

n	s(n)	a(n)	b(n)
1	0	-1.5	-1.5
2	0	-1.5	-3

3	0	-1.5	-4.5
4	1	1.5	-3
5	1	1.5	-1.5
6	1	1.5	0
7	1	1.5	1.5
8	1	1.5	3
9	0	-1.5	1.5
10	1	1.5	3
11	1	1.5	4.5