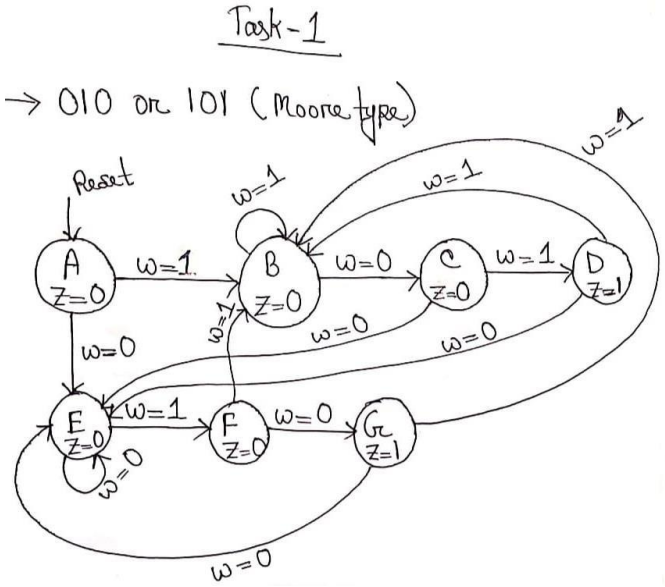
Problem: 1

State Diagram:



State table:

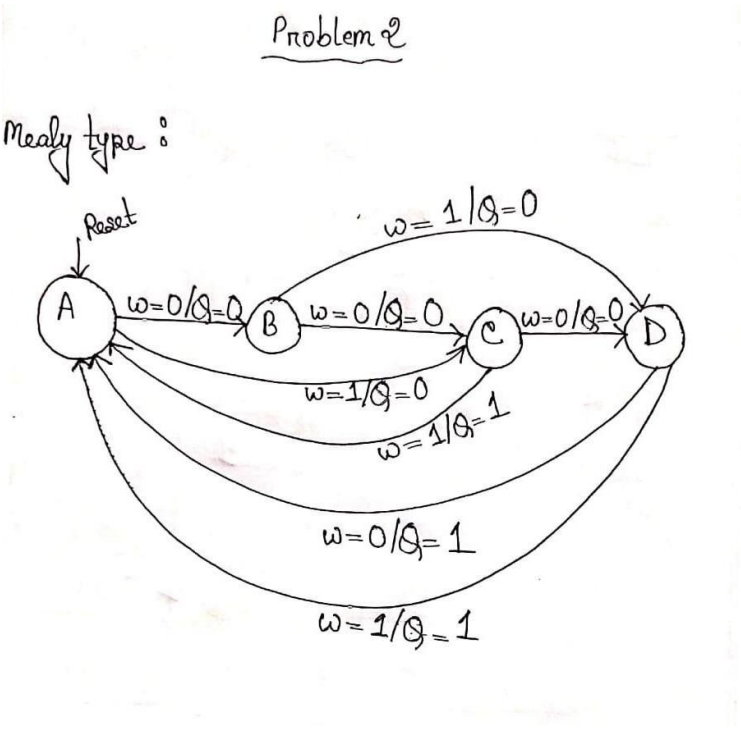
Present State	Next State		Output
	w = 0	w = 1	z
A	E	B	0
B	C	B	0
C	E	D	0
D	E	B	1
E	E	F	0
F	G	B	0
G	E	B	1

State Assigned Table:

Present State	Next State		Output
	w = 0	w = 1	z
y3y2y1	Y3Y2Y1	Y3Y2Y1	
000	100	001	0
001	010	001	0
010	100	011	0
011	100	001	1
100	100	101	0
101	110	001	0
110	100	001	1
111	ddd	ddd	d

Problem-2

State Diagram:



State Table:

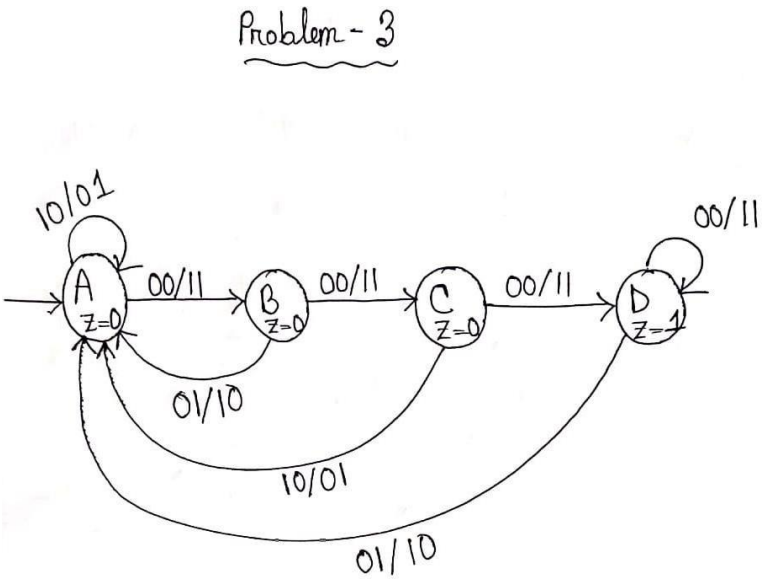
Present State	Next State		Output (Q)	
	w = 0	w = 1	w = 0	w = 1
A	B	C	0	0
B	C	D	0	0
C	D	A	0	1
D	A	A	1	1

State Assigned Table:

Present State	Next State		Output (Q)	
	w = 0	w = 1	w = 0	w = 1
y2y1	Y2Y1	Y2Y1		
00	01	10	0	0
01	10	11	0	0
10	11	00	0	1
11	00	00	1	1

Problem: 3

State Diagram:



State Table:

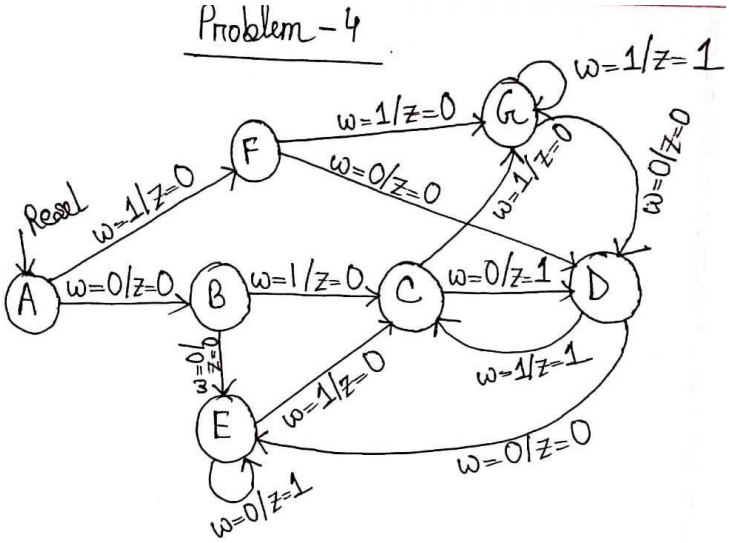
Present State	Next State				Output
	w1 w2 = 00	w1 w2 = 01	w1 w2 = 10	w1 w2 = 11	z
A	B	A	A	B	0
B	C	A	A	C	0
C	D	A	A	D	0
D	D	A	A	D	1

State Assigned Table:

Present State	Next State				Output
	w1 w2 = 00	w1 w2 = 01	w1 w2 = 10	w1 w2 = 11	z
y2y1	Y2Y1	Y2Y1	Y2Y1	Y2Y1	z
00	01	00	00	01	0
01	10	00	00	10	0
10	11	00	00	11	0
11	11	00	00	11	1

Problem: 4

State Diagram:



State Table:

Present State	Next State		Output (z)	
	w = 0	w = 1	w = 0	w = 1
A	B	F	0	0
B	E	C	0	0
C	D	G	1	0
D	E	C	0	1
E	E	C	1	0
F	D	G	0	0
G	D	G	0	1

State Assigned Table:

Present State	Next State		Output (z)	
	w = 0	w = 1	w = 0	w = 1
y3y2y1	Y3Y2Y1	Y3Y2Y1		
000	001	101	0	0
001	100	010	0	0
010	011	110	1	0
011	100	010	0	1
100	100	010	1	0
101	011	110	0	0
110	011	110	0	1
111	ddd	ddd	d	d