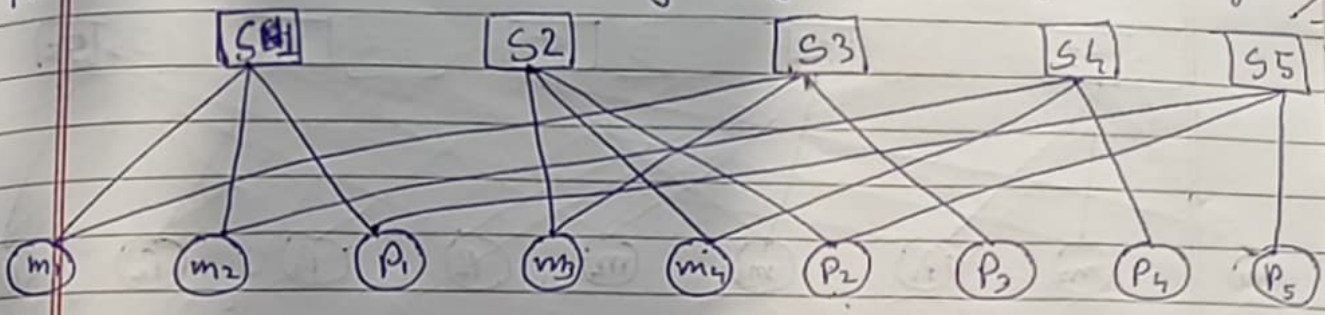
Product codes (9,4)

~~Hard decision decoding by BEC (Production~~

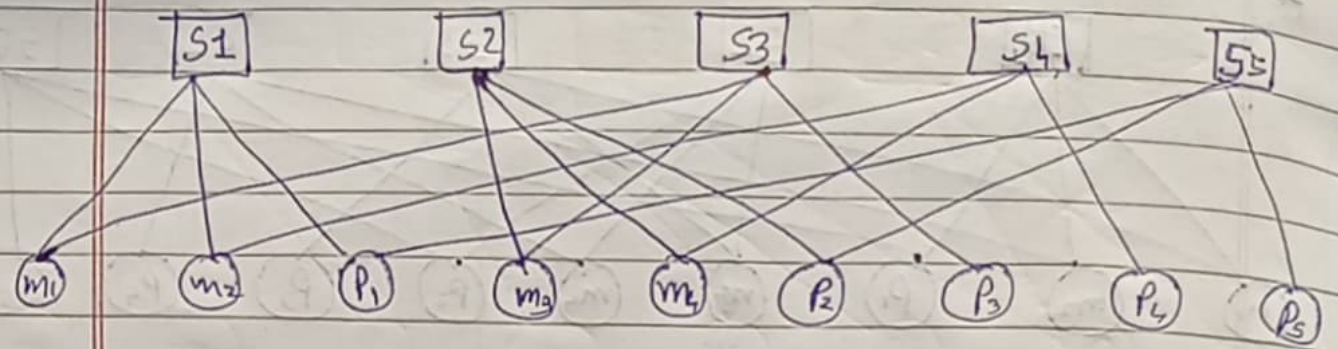


BEC	e	e	1	1	e	0	0	e	e

t=1

	S1	S2	S3	S4	S5
m_1	e	–	e	–	–
m_2	e	–	–	e	–
P_1	1	–	–	–	1
m_3	–	1	1	–	–
m_4	–	e	–	e	–
P_2	–	0	–	–	0
P_3	–	–	0	–	–
P_4	–	–	–	e	–
P_5	–	–	–	–	e

	m_1	m_2	P_1	m_3	m_4	P_2	P_3	P_4	P_5
S1	e	e	e	–	–	–	–	–	–
S2	–	–	–	e	1	e	–	–	–
S3	1	–	–	e	–	–	e	–	–
S4	–	e	–	–	e	–	–	e	–
S5	–	1	e	–	1	e	–	–	1
c	e	e	1	1	e	0	0	e	1



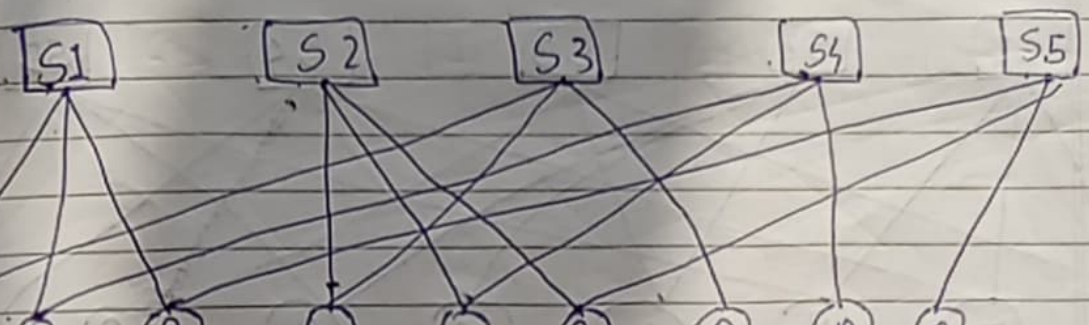
e	e	1	I	e	0	0	e	1

t=2

	S1	S2	S3	S4	S5
m_1	1	e	e	-	-
m_2	e	-	-	e	-
P_1	1	-	-	-	1
m_3	-	1	1	-	-
m_4	-	e	-	1	-
P_2	-	0	-	-	0
P_3	-	-	0	-	-
P_4	-	-	-	e	-
P_5	-	-	-	-	1

	m_1	m_2	P_1	m_3	m_4	P_2	P_3	P_4	P_5
S1	e	0	e	-	-	-	-	-	-
S2	-	-	-	1	e	1	e	-	-
S3	1	-	-	e	-	-	e	-	-
S4	-	e	-	-	e	-	-	e	-
S5	-	-	1	-	-	0	-	-	1

e	e	1	I	e	0	0	e	1

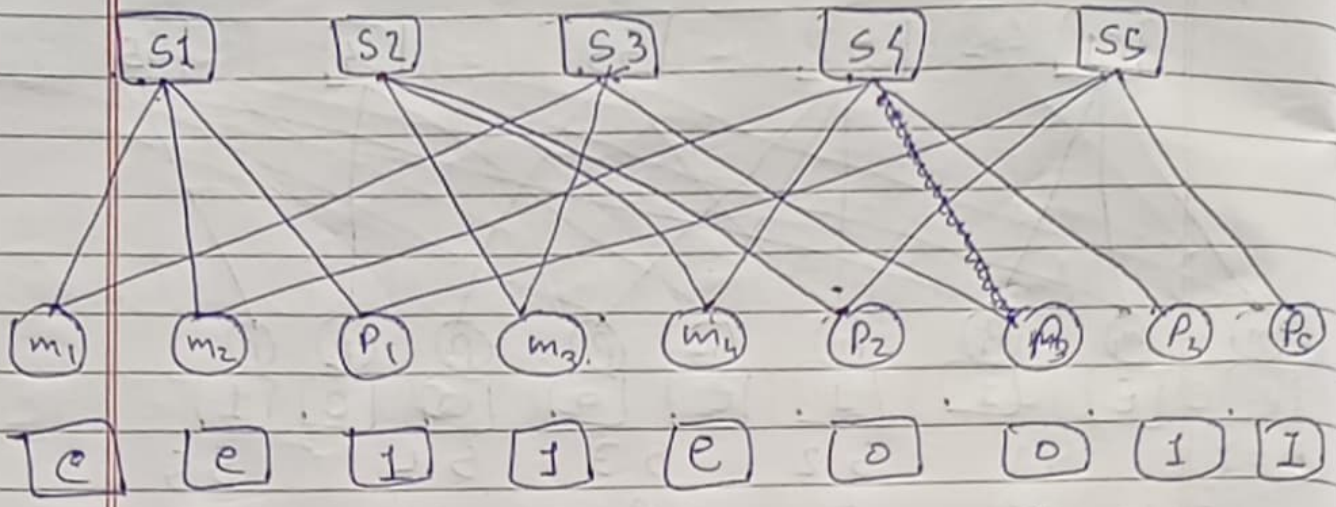


m_1	m_2	P_1	m_3	m_4	P_2	P_3	P_4	P_5
e	e	1	1	e	0	0	e	1

$t=3$

	S1	S2	S3	S4	S5
m_1	e	-	e	-	-
m_2	e	-	-	0	-
P_1	1	-	-	-	1
m_3	-	1	1	-	-
m_4	-	e	-	1	-
P_2	-	0	-	-	0
P_3	-	-	0	-	-
P_4	-	-	-	e	-
P_5	-	-	-	-	1

	m_1	m_2	P_1	m_3	m_4	P_2	P_3	P_4	P_5
S1	e	0	e	-	-	-	-	-	-
S2	-	-	-	e	1	e	-	-	-
S3	1	-	-	e	-	-	e	-	-
S4	-	e	-	-	e	-	-	1	-
S5	-	-	1	-	-	0	-	-	1
	e	e	1	1	e	0	0	1	1

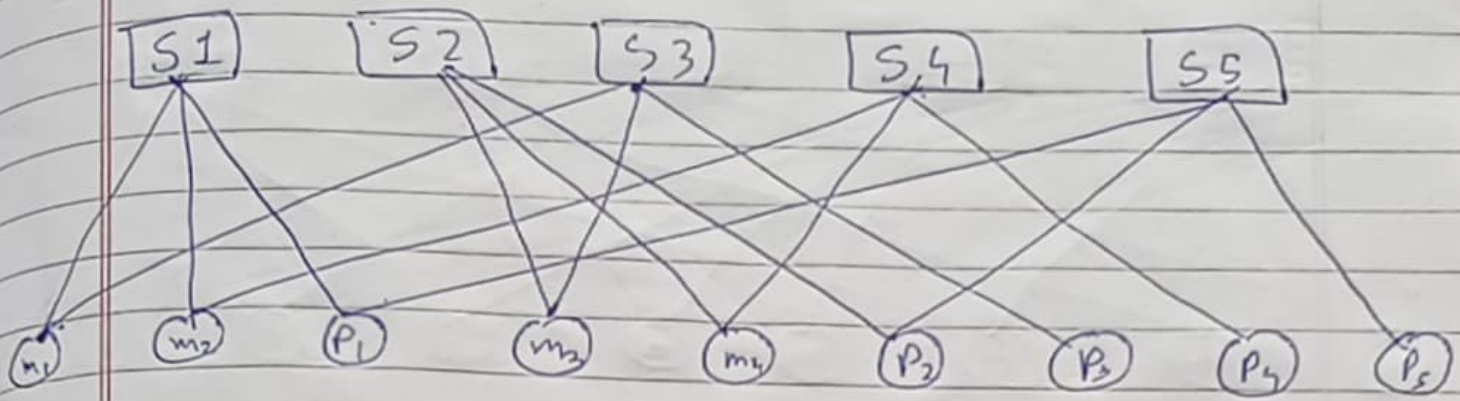


t=4

	S1	S2	S3	S4	S5
m_1	1	-	e	-	-
m_2	e	-	-	0	-
P_1	1	-	-	-	1
m_3	-	1	1	-	-
m_4	-	e	-	1	-
P_2	-	0	-	-	0
P_3	-	-	0	-	-
P_4	-	-	-	1	-
P_5	-	-	-	-	1

	m_1	m_2	P_1	m_3	m_4	P_2	P_3	P_4	P_5
S1	e	0	e	-	-	-	-	-	-
S2	-	-	-	e	1	e	-	-	-
S3	1	-	-	e	-	-	e	-	-
S4	-	0	-	-	1	-	-	1	-
S5	-	-	1	-	-	0	-	-	1

e 0 1 1 1 0 0 1 1



C	0	1	1	1	0	0	1	1

t=5

	S1	S2	S3	S4	S5
m_1	1	-	e	-	-
m_2	0	-	-	0	-
P_1	1	-	-	-	1
m_3	-	1	1	-	-
m_4	-	1	-	1	-
P_2	-	0	-	-	0
P_3	-	-	0	-	-
P_4	-	-	-	1	-
P_5	-	-	-	-	1

	m_1	m_2	P_1	m_3	m_4	P_2	P_3	P_4	P_5
S1	1	0	1	-	-	-	-	-	-
S2	-	-	-	1	1	0	-	-	-
S3	1	-	-	e	-	-	e	-	-
S4	-	0	-	-	1	-	-	1	-
S5	-	-	1	-	-	0	-	-	1

1	0	1	1	1	0	0	1	1

Rules for Hard decision decoding

	BEC	BSC
VN → CN	e only if all are e. else value other than e	Majority
CN → VN	e if any one is e. else XOR of other vals	XOR or %2
update after all iteration is output of respective channel	Majority wins	Majority wins