Reduced Density Matrix

Basis

2 a3 A → 2 |o>, 11>} $\frac{|\gamma\rangle}{AB} = \frac{|00\rangle + |11\rangle}{AB}$

{b,3B → { lo}, 11)}

100 X00 1 + 100 X 111 PAB = 14ABXYAB = + 111×100 | + 111×111

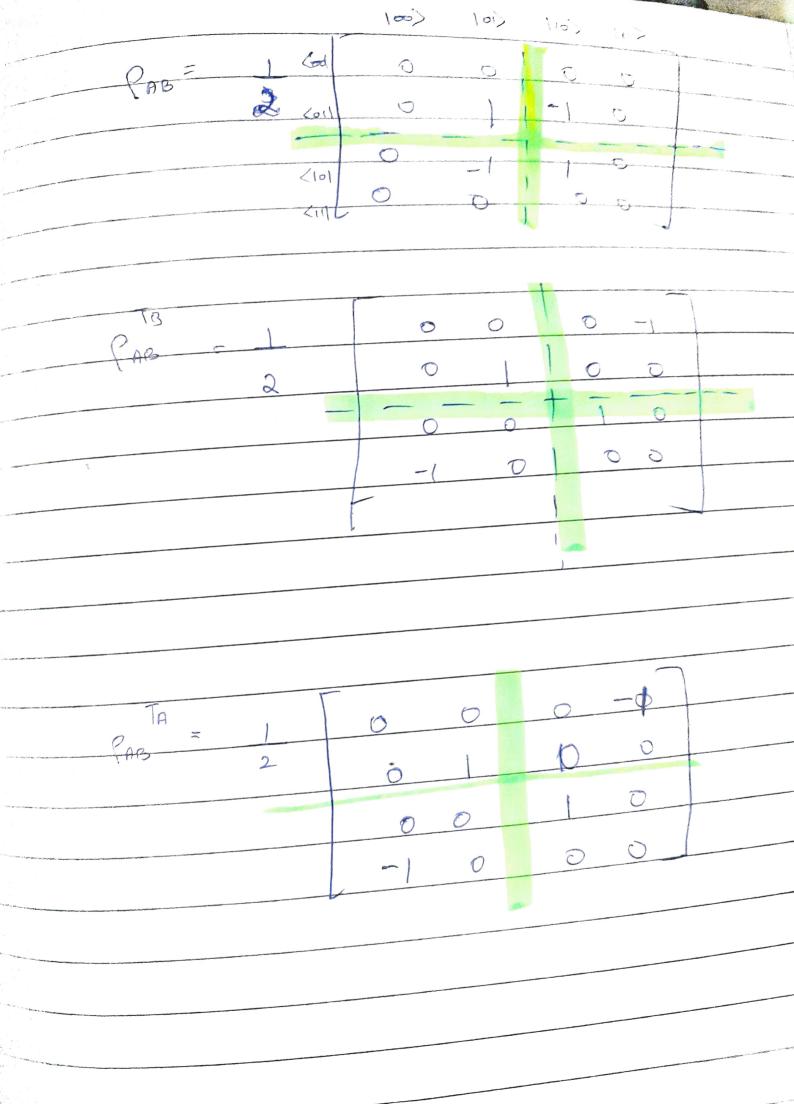
Idea -> fuid the density matrix of A.

PA = Tr E PAB]

= S. < bilPABlbi

= <00 | PABLOB > + <1BLPBLIB)

 $= \frac{1}{2} \left[10 \times 01 + 11 \times 11 \right]$



Problem det 2 $|\psi_0\rangle = |\psi_0\rangle = |\psi_0$ Second gubit is en state (1) after measurement; normalize!! $\frac{1}{\sqrt{5}} = \frac{i}{\sqrt{5}} \left(\frac{101}{2111} - 2111 \right)$ Now, probability that first gubit is in 11) is (2)2