```
(AB) = BtAt
 U = S(C \otimes 1)
|\psi_{\circ}\rangle = |c_{\circ}\rangle \otimes |p_{\circ}\rangle
 Trc VIVOXYOIU+ = Trc (SCO1 ICXCO101PXp1 C+04 St)
  S= 10X01 0 ≥; 1i+1Xi1 + 11X11 ≥; 1i-1 Xi1
                                                    St= 10X018 ≥ 11X1+11+11X118≥111X1-11
  C= 1/2 (10x01+10x11+11x01-11x11)
  C&1= C∞Zilixil
 S(cod) = 1/12 ( 10x0+ 10x11) & ≥; 1 i+ xi |+ (11x0|-11x11) & ≥; 1 i-1 x i | j
[S(C&IL)]+= (CT&IL)S+=1/12} (10x01+11x01) & Zilixi+1/+ (10x11-11x11) & Zilixi-1/
 trc UINXXXXIUT= <016 UINXXVo1U+10> + <16 UINXXVo1U+11>
⟨O|S(Co)|)|c>= 1/12((O|co)+⟨1/c)) ≥(1iμχ() = Ko
<1/c>((001) | Co) = 1/12 ((00) - (1100)) \(\int \text{ii-1xi} = K_1
(0/c S(C&1) 16> 1/2/Col (Cb1) St 10/2 = 1/2 ((0/6) + <1/6) \( \) [1+1/1]
 K+K= 1/2 (<G10) +<G11) (<016)+<116) = 1/2 (<G10) +<G11) (<016)+<116) = 1/2 (<G10) +<G11)+1Xj1
      = 1/2 ( ((016))2+ (<16) )2+ (61 ) (61 ) = 11 X()
KiK1= 1/2 ((C/0) - (C/1))((0/6)-(1/6)) Zin | ixi-11j-1xj1
     = 1/2 ( |<0/6>)12+ K116>12-<6/1X016>-<6/0X1/6>) \(\) i Xi
 K=K0+ K1+K1= 1 K: = (ilcS(CO1)|Co)
 U/46 = S(CO1) 1/12 (10) + i N) 1000 = 1/25 (10)+11/ + i 10/ - i 1/2 010)
      = \frac{1}{2}(101) + 11-1 + (101) - (11-1)
      = 1/2 { (1+i) |01) + (1-i) |1-1>} = 1/2 (ei74 |0,1) + ei14 |1,-1>)
     = ei#4/12(10,1>+e-1#/2 |1,-1>)= ei#4/12(10,1>-111,-1>)
```

```
|\psi_1\rangle = e^{i\pi/4}/\sqrt{2}(|0,1\rangle - i|1,-1\rangle) |\psi_1\rangle \psi_1| = \frac{1}{2}(|0,1\rangle \phi_1 |1 - i|1,-1\rangle \phi_1 |1
                                                        +ilo1X1-1+11-1X1-11)
   Tralyzywzl = Tra Ulwixyll Ut
     (10,1) = S(c⊗1) e<sup>iπ/4</sup>/√2 (10,1) - i11,-1)
          = e^{i\pi/4}/2 S(10,1)+11,1)-i(0,-1)+i(1,-1)
          = ei#4/2 (10,2)+11,0)-i(0,0)+i11,-2))
     T_{C}(U|\Psi_{1}\chi\Psi_{1}|U^{\dagger}) = \Lambda(\rho_{P}^{(1)}), \rho_{P}^{(1)} = T_{C}|\Psi_{1}\chi\Psi_{1}| d\Lambda?
                                            Trolyxy, > Trolyxyzl
                                              14x441 -> 122x421
    (4)= alo,-1)+blop)+clo,1)+d[1,-1)+e(1,0)+f[1,1)
    UNI)= 1/12 {a(10,0)+11,-2))+b(10,1)+(1,-1))+c(10,2)+11,0))
                  +d(10.0)-11.-2)+e(10.1)-11.-1)+f(10.2)-11.0)=142
    Trc/1/2/1/2/ =
           /NI) = nt/No)
       P0 - P1 - P1
     /No = 1/12 (10)+i11) 0 10)
                                             Ko= 1/2 (1/12 + i/2) Zi li+1xil
                                                = 1/2 (1+i) Zi lita Xil
                                             K1 = 1/2 (1-i) Zi |i-1xil
14)=()14)= 1/2 (10,1)+ 11,-1)+i10,1)- i11,-1)
```

Tre 14, x, 4,1 = 1/2 (1-1x-11+11x1)

$$K_0|0\rangle = \frac{1}{2}(1+i)|1\rangle$$
 $K_1 = \frac{1}{2}(1-i)|-1\rangle$ 
 $K_1 = \frac{1}{2}(1-i)|-1\rangle$ 
 $K_1 = \frac{1}{2}(1+i)|-1\rangle$ 

$$\mathcal{E}(|0X0|) = 1/2(1-1X-1) + |1X1|)$$

$$\frac{(1/4)}{120} = \frac{1}{20} \left( \frac{(1+i)(0,1)}{(10,0)} + \frac{(1-i)(1,-1)^3}{(1-i)(10,0)} - \frac{1}{(1-2)^3} \right)$$

$$= \frac{1}{20} \left( \frac{(1+i)(10,1)}{(10,1)} + \frac{(1-i)(10,0)}{(10,0)} - \frac{1}{(1-2)^3} \right)$$

$$|K_0|-1\rangle = \frac{1}{2}(1+i)|0\rangle$$
 $|K_1|-1\rangle = \frac{1}{2}(1-i)|-2\rangle$ 
 $|K_0|1\rangle = \frac{1}{2}(1-i)|0\rangle$ 
 $|K_1|-1\rangle = \frac{1}{2}(1-i)|0\rangle$