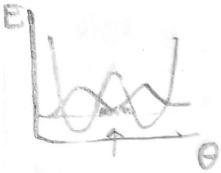
Lecture 15 review:

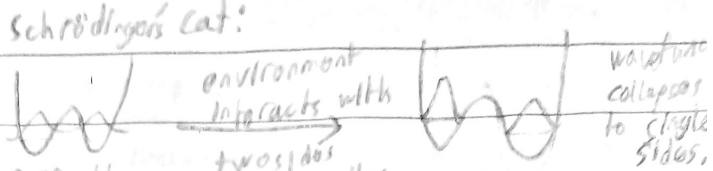


Possible states: ψ_0 "0+1" "0−1" ψ_1

qubits: $\psi_0+\psi_1$ "1" $\psi_0-\psi_1$ "0"

Q-computers can calculate with both values at once; classical computers can only process "0" and "1" sequentially

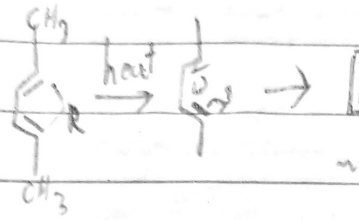
Schrödinger's cat:



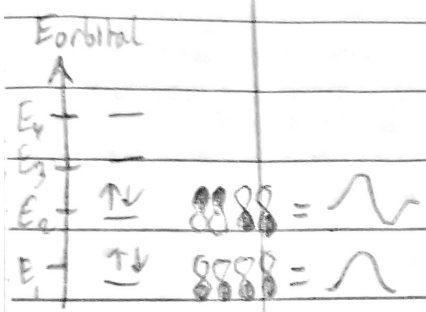
Lecture 16: QM and the outcome of chemical rxns.

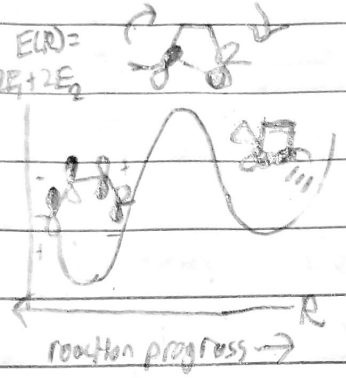
ex:

2,4-hexadiene

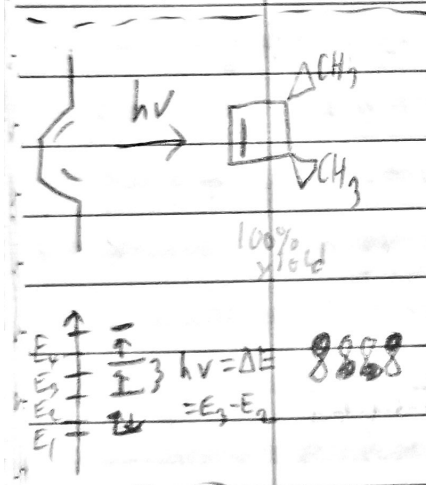


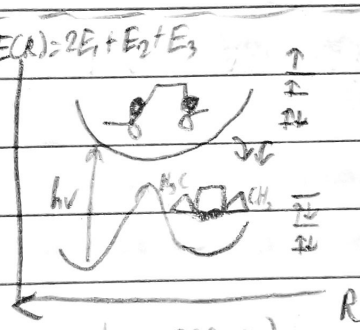
How does QM explain this?



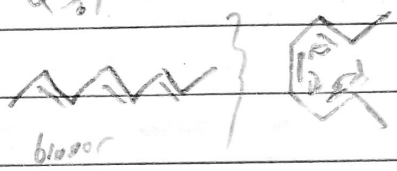


Rotation 1 direction brings same sign orbital together. The other direction, opposite sign. Bonding vs. antibonding.





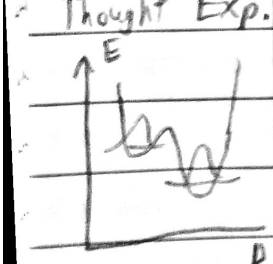
Q 5 4

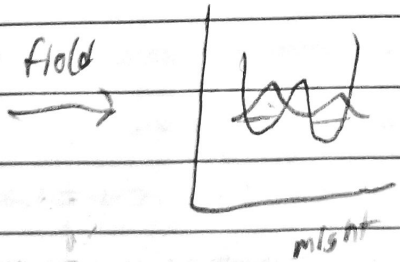


bigger

smaller

Thought Exp:





might be cheaper than inputting E & letting it release afterward

Differences in energy level means the 2 states are localized. This means tunneling won't happen for high enough ΔE.

(instantaneous probability) from the other state.