

Polkinghorne Questions

Chapter 4

1. What is quantum tunneling?
2. Why do you suppose that Polkinghorne tells us about delayed choice experiments?
3. According to the section *Sums over histories*, how does Feynman suggest that one should picture a quantum particle moving from A to B?
4. Who is responsible for the relativistic quantum theory described in this chapter? Do you get the idea that Polkinghorne likes this person?
5. What is the difference between a particle and a field?
6. In quantum field theory, the superposition principle allows states with an indefinite number of particles. Where does Polkinghorne first discuss the superposition principle? What is the superposition principle?
7. The vacuum in quantum field theory is not just emptiness. How does Polkinghorne describe the quantum vacuum?
8. Do quantum computers exist, or are they more of a hopeful idea?