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Quiz

1. The mass of a photo is massless
2. Subatomic level -> 10^-18
3. Color charge is a property of quarks and gluons that is related to particle's strong interaction in the theory of quantum thermodynamic. In QCD, a quarks color change can take one of three colors: red, green, or blue
   Electrical charge expresses the extent to which it has more or fewer electrons than protons in the nucleus from the number of electrons surrounding the nucleus.
4. Bosons have no problem occupying the same place at the same time. Two or more bosons may be described by the same quantum number. Gluons, photons and W, Z and Higgs are bosons. Bosons have a quantum spin of integer values. (0, 1, -1, -2).Fermions cannot occupy the same space at the same time. No two fermions may be described by the same atomic number. Leptons and Quarks are fermions. Fermions have half-integer spin of ½, -1/2, -3/2…
5. Hadrons are defined as strong interaction composite particles. Hadrons are either composite fermions or composite bosons. Hadrons are categorized into families: baryons, made of three quarks, and mesons, made of one quark and one antiquark. Protons and neutrons are examples of Baryons.
   Bosons are one of the two fundamental classes of particles with integer spins. It can be elementary like photons or composite like mesons.
6. The bubble chamber is an apparatus for determining the movement of charged particles, consisting of a chamber containing a super-heated transparent liquid that by boiling and producing bubbles in the path of an ionizing particle creates the path of the particle.
7. There are six different kinds of leptons. Three negatively charged and three neutrally charged. The electron, muon and tauon are examples of neutrons. They have no electric charge, very little mass, and they are very hard to find.
8. Examples of leptons are muon neutrino and tau neutrino. Examples of Baryons are lambda particles and Sigma particles.
9. The Feynman diagram is an expression describing the behavior of subatomic particles. In a typical Feynman diagram the left vertex includes a negative electron entering and a positive one exiting. On the right side, an antiquark enters and a quark exists. Moreover, a Feynman diagram often represents the Gluon interactions. In the left vertex, green enters and blue exits, and on the right vertex, blue enters and green exits.
10. Exchange particles lead to the exchange of photons in the electromagnetic force between two particles. The Gluon can be considered the fundamental exchange particle underlying the strong interaction between protons and neutrons in the nucleus.