

UNIT 28 PARTICLE PHYSICS

MULTIPLE CHOICE QUESTION MCQs

- 1 The Standard Model classifies elementary particles into two main groups:
(a) Baryons and Leptons
(b) **Fermions and Bosons**
(c) Quarks and Gluons
(d) Hadrons and Mesons
2. The following is NOT a flavor of quark:
(a) Up
(b) Down
(c) **Electron**
(d) Top
- 3 The charge of an up quark is:
(a) $+1/2e$
(b) $-1/2 e$
(c) **$+2/3e$**
(d) $-2/3e$
- 4 The concept of "quark confinement" implies that:
(a) **Quarks cannot exist as free particles outside of hadrons.**
(b) Quarks are always found in pairs with opposite charges.
(c) Quarks have a strong affinity for gluons.
(d) Quarks are the fundamental building blocks of all matter.
- 5 The primary role of the Higgs boson in the Standard Model is:
(a) Mediating electromagnetic interactions
(b) **Providing mass to other particles**
(c) Transmitting the strong nuclear force
(d) Creating dark matter
- 6 According to the Standard Model, the term "color" refers to:
(a) Visible light spectrum
(b) **Charge property of quarks**
(c) Mass of particles
(d) Spin of particles
- 7 A particle made up of a quark and an antiquark is called:
(a) Lepton
(b) Baryon
(c) **Meson**
(d) Neutrino
- 8 An elementary particle that feels all three fundamental forces (electromagnetic, weak, and strong nuclear forces) is:
(a) Lepton
(b) **Quark**
(c) Electron
(d) Neutrino
- 9 The primary function of a Geiger-Muller counter in particle physics is to:
(a) Measure the velocity of particles
(b) **Detect and count ionizing radiation**
(c) Create antimatter particles
(d) Generate magnetic fields
- 10 In a Geiger-Muller counter, the gas commonly used to detect ionizing radiation is:
(a) Oxygen
(b) Neon
(c) **Argon**
(d) Helium

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EXAMS PRACTICE MULTIPLE CHOICE QUESTION MCQs

1. What type of particles are made up of quarks?
(a) Leptons
(c) Fermions
(b) Bosons
(d) Hadron
2. How many flavors of quarks exist in nature?
(a) 2
(c) 4
(b) 6
(d) 5
3. Which quarks has the highest mass?
(a) Up quark
(c) Charm quark
(b) Down quark
(d) Top quark
4. What type of hadron is composed of three quarks?
(a) Baryon
(c) Lambda baryon
(b) Neutron
(d) Pion
5. Which flavor of quark is found in the neutron?
(a) Up quark
(c) Charm quark
(b) Down quark
(d) Top quark
6. To what color must quarks combine for a particle to be constructed?
(a) blue
(c) red
(b) green
(d) white
7. Name the Particle Which is Made up of 1 up Quark and 2 Down Quarks?
(a) Electron
(c) Tachyon
(b) Proton
(d) Neutron
8. What is a Geiger Counter used to measure?
(a) Radioactivity
(a) Water flow
(a) Pressure
(a) temperature
9. GM Counter uses
(a) Alcohol only
(c) Argon only
(b) Argon and Alcohol
d) None of these
10. The thin wire at the cathode of the GM counter tube acts as
(a) Cathode
(c) Neutral
(b) Anode
(d) all of these