

Chapter 21: Nuclear Physics

- 1: The number of protons in any atom are always equal to the number of
a) Electrons b) neutrons c) positrons d) mesons
- 2: When a radioactive nucleus emits a β -particles, the proton-neutron ratio:
a) Remains the same b) Increase c) decrease d) equal
- 3: The amount of energy released in the fusion of four hydrogen nuclei to form an alpha particle is equal to
a) 2Mev b) 25Mev c)100Mev d) 200Mev
- 4: A positron is
a) Electron b) proton c) antiparticle of proton d) antiparticle of electron
- 5: Alpha rays of energy more than 0.5 Mev can produce
a) Pair production b) Compton's effect c) photoelectric effect d) fission process
- 6: Neutron was discovered in 1932 by
a) Bohr b) Chadwick c) Dirac d) Fermi
- 7: A positron is a particle having
a) Mass equal to electron b) charge equal to electron
c) Equal mass but opposite charge to electron d) mass equal to proton
- 8: In nuclear fission reaction, when the products are Xe^{140} and Sr^{94} , the number of neutrons emitted is
a) 4 b) 3 c) 2 d) 1
- 9: Energy given out per nucleon in P-P reaction is
a) 5.2 Mev b) 6 Mev c) 6,4 Mev d) 7.7 Mev
- 10: Which of the following are elementary particles
a) Protons b) neutrons c) photons d) mesons
- 11: When alpha particle is emitted from any nucleus, its mass number -----and its charge number-----
a) Increases by 2, increases by 2 b) Decreases by 4, increases by 2
c) Decreases by 4, decreases by 2 d) Increases by 4, decreases by 2
- 12: The number of protons in an atom is always equal to number of
a) Electron b) neutron c) positron d) mesons

- 13: A pair of quark and antiquark makes
 a) Mesons b) baryon c) photon d) protons
- 14: Which of following has no charge
 a) Alpha b) beta c) gamma d) cathode
 rays
- 15: A positron is antiparticle of
 a) Proton b) electron c) neutron d) photon
- 16: Mass of meson is
 a) Greater than proton b) less than proton c) equal to proton d) equal to
 neutron
- 17: Which is true for both alpha and gamma particles
 a) They can ionize in air b) They can deflected by electric field
 c) They can deflected by magnetic field d) They can penetrate a few millimeter
 of aluminum
- 18: The amount of energy acquired or lost by an alpha particle as it moves through p.d of
 1V is
 a) 3.2×10^{-19} J b) 6.4×10^{-19} J c) 1.6×10^{-19} J d) zero
- 19: The charge on beta particle is
 a) $+e$ b) $-e$ c) $+2e$ d) none of
 these
- 20: Which one belongs to Lepton's group
 a) Electron b) mueons c) neutrinos d) all of
 them