

MDCAT Physics Chapter 16 Nuclear Physics MCQ's Test

Sr	Questions	Answers Choice
1	The mother and daughter elements with the emission of α - α particles, are called:	A. Isotopes B. Isobars C. Isomers D. Isodiapheres
2	The number of electrons in a nucleus X of atomic number Z and mass number A is:	A. A B. W C. Z D. Y
3	Nuclear fission experiments show that the neutrons the uranium nuclei into two fragment of about the same size. This process is accompanied by the emission of several:	A. Protons and positrons B. α -partilces C. neutrons D. Protons and α -partilces
4	When the radioactive nucleus emits a beta particle, the proton neutron ration:	A. increases by one B. Remains same C. Decreases by one D. Decreases by four
5	Due to emission of α + α - α particles:	A. Mass of the nucleus increases B. Mass of the nucleus decreases C. Charge on the nucleus increases D. Charge number decreases
6	A count rate 240 per minute reduces to 30 counts per min in 1 hour. The half-life of source is:	A. 20min B. 60min C. 80min D. 90min
7	The phenomenon of radioactivity is associated with:	A. Fission of nucleus B. Disintegration of neutrons C. Emission of spectral lines D. Spontaneous disintegration of the nuclei of atoms
8	The activity of a radioactive sample is 1.6 curie and half-life is 2.5 days. Its activity after 10 days will be:	A. 0.8 Curie B. 0.1Curie C. 0.4 Curie D. 0.16 Curie
9	If the radioactive substance reduces to $\frac{1}{16}$ PHYSICS of its original mass in 40 days then its half-life is:	A. 10days B. 20days C. 40days D. 4days
10	The rate of decay radioactive substance:	A. Is constant B. Decrease exponentially with time C. Varies inversely with time D. Decrease linearly with time
11	A radioactive isotope α α α decays consecutively to α α α the particles emitted are:	A. One α and one α B. Two α and one α C. e α and two α D. Two α and two α
12	The binding energy per nucleon is:	A. Greater for heavy nuclei B. Least for heavy nuclei C. Greatest for light nuclei D. Greatest for medium nuclei
13	For atomic nucleus, the binding energy per nucleon with increase in mass number:	A. Increases continuously B. Remains same C. Decrease continuously D. First increases and then decreases with increase in mass number
14	Three quarks make up a:	A. Leptons B. Mesons C. Baryons D. Quark
		A. Produces larger nuclei

15	Which row is correct for fission and for fusion?	B. Produces larger nuclei C. Produces smaller nuclei D. Produces smaller nuclei
16	Beta particles have penetration of about:	A. 100 times more than that of the gamma particles B. 100 times less than that of an alpha ray C. 100 times more than that of an alpha ray D. 10 times more than that of an alpha particle
17	The more readily fissionable isotope of uranium has an atomic mass of:	A. 220 B. 230 C. 235 D. 240
18	When a radioactive nucleus emits a beta particle, the proton neutron ratio:	A. Decreases B. Increases C. Remain same D. None of the above
19	During a negative β -decay	A. An atomic electron is ejected B. A neutron in the nucleus decays emitting an electron C. An electron which already present within the nucleus is ejected D. A part of binding energy of nuclei is converted into electron
20	The half-life of a radioactive element which has only $1/32$ of its original mass left after a lapse of 60 days is:	A. 12days B. 10days C. 22days D. 36days