

MDCAT Physics Chapter 16 Nuclear Physics MCQ's Test

Sr	Questions	Answers Choice
1	The uranium Nucleus ${}_{92}^{238}\text{U}$ undergoes successive decays, emitting respectively α - β , α - β β - α . What is the atomic number and atomic mass of the resulting nucleus:	A. 90, 238 B. 91, 234 C. 92, 236 D. 92, 238
2	A radioactive nucleus can emit:	A. Electron B. α particles C. Positron D. Any of these
3	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
4	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
5	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
6	Half-life of radon gas is:	A. 1620 years B. 3.8 days C. 7 days D. 11 days
7	The example of nuclear fusion is:	A. Formation of barium and krypton from uranium B. Formation of plutonium -235 from uranium -235 C. Formation of helium from hydrogen D. Formation of water from hydrogen and oxygen
8	In nuclear fission reaction, when the products are ${}_{140}\text{X}$ and ${}_{94}\text{Sr}$, the number of neutrons emitted is	A. 1 B. 2 C. 5 D. 9
9	Which of the following have maximum ionization power?	A. α -rays B. β -rays C. γ -rays D. Same for all
10	Because of large mass when α -particle enters the atom or molecule it:	A. Moves in zigzag path B. Moves along straight line C. Moves along circular path D. None of these
11	A thorium nucleus is formed when a uranium nucleus emits an α -particles. Atomic number of thorium is :	A. 23 B. 60 C. 90 D. 70
12	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
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13	During a negative β -decay	<p>emitting an electron</p> <p>C. An electron which already present within the nucleus is ejected</p> <p>D. A part of binding energy of nuclei is converted into electron</p>
14	The number of electrons in a nucleus X of atomic number Z and mass number A is:	<p>A. A</p> <p>B. W</p> <p>C. Z</p> <p>D. Y</p>
15	Three quarks make up a:	<p>A. Leptons</p> <p>B. Mesons</p> <p>C. Baryons</p> <p>D. Quark</p>
16	A radioactive isotope A_ZX decays consecutively to A_ZX the particles emitted are:	<p>A. One α and one β</p> <p>B. Two α and one β</p> <p>C. e β and two α</p> <p>D. Two α and two β</p>
17	When a radioactive nucleus emits a beta particle, the proton neutron ratio:	<p>A. Decreases</p> <p>B. Increases</p> <p>C. Remain same</p> <p>D. None of the above</p>
18	The half-life of a certain element is 3.5 days at STP. If the temperature is doubled and pressure is reduced to half then half-life of the same element will be:	<p>A. 1.75 days</p> <p>B. 3.5 days</p> <p>C. 7 days</p> <p>D. 14 days</p>
19	α , β , γ radiations come out of radioactive substance:	<p>A. Spontaneously</p> <p>B. When it is put in a reactor</p> <p>C. When it is heated</p> <p>D. Under pressure</p>
20	The rate of decay radioactive substance:	<p>A. Is constant</p> <p>B. Decrease exponentially with time</p> <p>C. Varies inversely with time</p> <p>D. Decrease linearly with time</p>