

MDCAT Physics Chapter 13 Nuclear Physics of Solids Online Test

Sr	Questions	Answers Choice
1	Half-life of radon gas is:	A. 1620 years B. 3.8 days C. 7 days D. 11 days
2	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
3	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
4	α , β , γ radiations come out of radioactive substance:	A. Spontaneously B. When it is put in a reactor C. When it is heated D. Under pressure
5	A radioactive substance has a half-life of 4 months. Three-fourths of the substance will decay in:	A. 5months B. 6months C. 8months D. 7months
6	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
7	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
8	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
9	The mother and daughter elements with the emission of α - β , are called:	A. Isotopes B. Isobars C. Isomers D. Isodiapheres
10	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
11	In 420 days, the activity of a sample of polonium (Po) fell to one-eight of its initial value. The half-life of polonium is :	A. 140days B. 45days C. 87days D. 90days
12	A radioactive isotope α β decays consecutively to α β the particles emitted are:	A. One α and one β B. Two α and one β C. e β and two α D. Two α and two β
13	The uranium Nucleus α β undergoes successive decays, emitting respectively α - β , β - α β - α β . What is the atomic number and atomic mass of the resulting nucleus:	A. 90, 238 B. 91, 234 C. 92, 236 D. 92, 238
14	A radioactive nucleus can emit:	A. Electron B. α particles C. Positron D. γ rays

D. Any of these

15 Which of the following have maximum ionization power?

- A. α -rays
- B. β -rays
- C. γ -rays
- D. Same for all

16 Due to emission of α - β rays:

- A. Mass of the nucleus increases
- B. Mass of the nucleus decreases
- C. Charge on the nucleus increases
- D. Charge number decreases

17 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

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:

- A. 1.75 days
- B. 3.5 days
- C. 7 days
- D. 14 days

19 If the radioactive substance reduces to $1/16$ of its original mass in 40 days then its half-life is:

- A. 10days
- B. 20days
- C. 40days
- D. 4days