

## MDCAT Physics Chapter 16 Nuclear Physics MCQ's Test

| Sr | Questions   | Answers Choice   |
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| 1  | In nuclear fission reaction, when the products are 140X and 94Sr, the number of neutrons emitted is | A. 1<br>B. 2<br>C. 5<br>D. 9   |
| 2  | Because of large mass when □ −paricle 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   |
| 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  | A radioactive nucleus can emit:   | A. Electron B. □ particles C. Positron D. Any of these   |
| 5  | When a radioactive nucleus emits a $\hfill\Box$ -paritcles, the mass number of the atom:            | A. Increases by one B. Decreases by one C. Remains the same D. Decreases by four   |
| 6  | Due to emission of □+ - □□□□:   | A. Mass of the nucleus increases B. Mass of the nucleus decreases C. Charge on the nucleus increases D. Charge number decreases  |
| 7  | 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  |
| 8  | The particles equal in mass or greater than mass of protons are called:                             | A. Leptons B. Mesons C. Baryons D. Quarks  |
| 9  | The mother and daughter elements with the emission of $\Box$ – $\Box\Box\Box\Box$ , are called:     | A. Isotopes B. Isobars C. Isomers D. Isodiapheres  |
| 10 | The most penetrating radiations out of the following is that of                                     | A. □-rays B. β-rays C. α-particles D. X-rays   |
| 11 | □, □ □□□ radiations come out of radioactive substance:  | A. Spontaneously B. When it is put in a reactor C. When it is heated D. Under pressure   |
| 12 | Half-life of radon gas is:  | A. 1620 years B. 3.8 days C. 7 days D. 11 days   |
| 13 | The rate of decay radioactive substance:  | A. Is constant B. Decrease exponentially with time C. Varies inversely with time D. Decrease linearly with time  |
| 14 | The number of electrons in a nucleus X of atomic number Z and mass number A is:                     | A. A<br>B. W<br>C. Z<br>D. Y   |
|    |   | · <del>-</del> · · · · · · · · · · · · · · · · · · ·   |

| 15 | In an □ -decay:  | A. The parent and daughter nuclei have same number of protons B. The daughter nucleus has one proton more than parent nucleus C. The daughter nucleus has two protons less than parent nucleus D. The daughter nucleus has two neutrons more than parent nucleus |
|----|--|--|
| 16 | A radioactive isotope $\Box \Box \Box \Box$ decays consecutively to $\Box \Box \Box$ the particles emitted are:    | A. One  and one  B. Two  and one  C. e and two  D. Two and two   |
| 17 | The fusion of hydrogen into helium is more likely to take place:   | A. At high temperature and high pressure B. At high temperature and low pressure C. At low temperature and low pressure D. At low temperature and high pressure  |
| 18 | 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<br>B. 0.1Curie<br>C. 0.4 Curie<br>D. 0.16 Curie   |
| 19 | 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<br>B. 10days<br>C. 22days<br>D. 36days   |
| 20 | During a negative β-decayv   | 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                         |