# MDCAT Physics Chapter 13 Nuclear Physics of Solids Online Test

| Sr | Questions | Answers Choice |
|---|---|---|
| 1 | Beta particles have less ionizing power than that of alpha particles because: | A. Their smaller energy<br>B. Their smaller mass<br>C. Their smaller density<br>D. Their smaller charge |
| 2 | Beta particles have penetration of about: | A. 100 times more than that of the gamma particles<br>B. 100 times less than that of an alpha ray<br>C. 100 times more than that of an alpha ray<br>D. 10 times more than that of an alpha particle |
| 3 | Which row is correct for fission and for fusion? | A. Produces larger nuclei<br>B. Produces larger nuclei<br>C. Produces smaller nuclei<br>D. Produces smaller nuclei |
| 4 | The most penetrating radiations out of the following is that of | A. □-rays<br>B. β-rays<br>C. α-particles<br>D. X-rays |
| 5 | During a negative β-decay | A. An atomic electron is ejected<br>B. A neutron in the nucleus decays emitting an electron<br>C. An electron which already present within the nucleus is ejected<br>D. A part of binding energy of nuclei is converted into electron |
| 6 | During a negative β-decayv | A. An atomic electron is ejected<br>B. A neutron in the nucleus decays emitting an electron<br>C. An electron which already present within the nucleus is ejected<br>D. A part of binding energy of nuclei is converted into electron |
| 7 | When a radioactive nucleus remits a beta particle, the proton neutron ratio: | A. Decreases<br>B. Increases<br>C. Remain same<br>D. None of the above |
| 8 | When the radioactive nucleus emits a beta particle, the proton neutron ration: | A. increases by one<br>B. Remains same<br>C. Decreases by one<br>D. Decreases by four |
| 9 | The binding energy per nucleon is: | A. Greater for heavy nuclei<br>B. Least for heavy nuclei<br>C. Greatest for light nuclei<br>D. Greatest for medium nuclei |
| 10 | The rate of decay radioactive substance: | A. Is constant<br>B. Decrease exponentially with time<br>C. Varies inversely with time<br>D. Decrease linearly with time |
| 11 | Three quarks make up a: | A. Leptons<br>B. Mesons<br>C. Baryons<br>D. Quark |
| 12 | The particles equal in mass or greater than mass of protons are called: | A. Leptons<br>B. Mesons<br>C. Baryons<br>D. Quarks |
| 13 | 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 |

| | | |
|---|---|---|
| 14 | Because of large mass when □ −paricle enters the atom or molecule it: | A. Moves in zigzag path<br>B. Moves along straight line<br>C. Moves along circular path<br>D. None of these |
| 15 | The fusion of hydrogen into helium is more likely to take place: | A. At high temperature and high pressure<br>B. At high temperature and low pressure<br>C. At low temperature and low pressure<br>D. At low temperature and high pressure |
| 16 | The more readily fissionable isotope of uranium has an atomic mass of: | A. 220<br>B. 230<br>C. 235<br>D. 240 |
| 17 | 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 |
| 18 | A thorium nucleus is formed when a uranium nucleus emits an □ −particles. Atomic number of thorium is : | A. 23<br>B. 60<br>C. 90<br>D. 70 |
| 19 | When a radioactive nucleus emits a □ −paritcles, the mass number of the atom: | A. Increases by one<br>B. Decreases by one<br>C. Remains the same<br>D. Decreases by four |
| 20 | In an □ −decay: | A. The parent and daughter nuclei have same number of protons<br>B. The daughter nucleus has one proton more than parent nucleus<br>C. The daughter nucleus has two protons less than parent nucleus<br>D. The daughter nucleus has two neutrons more than parent nucleus |