## Physics ECAT Pre Engineering Chapter 21 Nuclear Physics

| Sr | Questions | Answers Choice |
|----|-----------|----------------|
| 1 | Charge on neutron is | A. $1.6 \times 10^{-19}$ C<br>B. zero<br>C. $-1.6 \times 10^{-19}$ C<br>D. $1.2 \times 10^{-19}$ C |
| 2 | When radioactive nucleus emits aβ-particle, the proton-neutron ratio | A. decrease<br>B. increase<br>C. same<br>D. none of these |
| 3 | Radioactivity is | A. self disruptive activity<br>B. spontaneous activity<br>C. exhibited by all elements under proper conditions<br>D. both 'a' and 'b' |
| 4 | For an atom having atomic number Z and atomic weight A, the charge on the nucleus is | A. A - Z<br>B. A + Z<br>C. Z<br>D. A |
| 5 | When certain nucleus emits aβ-particles, is mass number: | A. Remain same<br>B. Increases by one<br>C. Decreases by one<br>D. Decreases by four<br>E. None of these |
| 6 | Which are not the elementary particles? | A. Photons<br>B. Leptons<br>C. Hadrons<br>D. Quarks<br>E. None of these |
| 7 | The most abundant isotope of neon is | A. neon-20<br>B. neon-21<br>C. neon-22<br>D. neon-23 |
| 8 | The nucleus left after the emission of some radiation is called: | A. Parent nucleus<br>B. Daughter necleus<br>C. Mother necleus<br>D. Any of these<br>E. None of these |
| 9 | When a nucleus emits an alpha particles, its charge number decreases by | A. 3<br>B. 2<br>C. 6<br>D. 5 |
| 10 | The missing mass which is converted to energy in the formation of nucleus, is called | A. packing fraction<br>B. mass defect<br>C. binding energy<br>D. none of these |
| 11 | The amount of energy equivalent to 1 a.m.u is | A. 9.315 Mev<br>B. 93.15 Mev<br>C. 931.5 Mev<br>D. 2.22 Mev |
| 12 | The reciprocal of decay constant λ of a radioactive material is: | A. Frequency<br>B. Half life<br>C. Year<br>D. Mean life<br>E. None of these |
| 13 | The mass of the nucleus is always less than the total man of the protons and neutron that make up the nucleus. The difference of the two masses is called | A. nuclear fission<br>B. nuclear fusion<br>C. man defect<br>D. radioactivity |
| 14 | Rutherford performed an experiment on nuclear reactions in: | A. 1718 A.D<br>B. 1818 A.D<br>C. 1918 A.D<br>D. 2001 A.D.<br>E. 1701 A.D. |

| 15 | The number of isotopes of hydrogen are | A. 2<br>B. 1<br>C. 3<br>D. 4 |
|----|----------------------------------------|------|
| 16 | Different radioactive material have | A. same half lives<br>B. different half lives<br>C. same mean lives<br>D. same total lives |
| 17 | Radioactivity was discovered by: | A. Becquerel<br>B. Marie curie<br>C. Pierre curie<br>D. All of them<br>E. None of these |
| 18 | Alfa particles are | A. hydrogen nuclei<br>B. helium nuclei<br>C. electrons<br>D. photons |
| 19 | The time required for a radioactive material to decrease in active by one half is called | A. half time<br>B. half life<br>C. disintegration time<br>D. mean life |
| 20 | β-particles are easily deflected by collisions than heavy | A. <span style="color: rgb(34, 34, 34); font-family: arial, sans-serif; font-size: small;">α-particles</span><br>B. <span style="color: rgb(34, 34, 34); font-family: arial, sans-serif; font-size: small;">β-particles</span><br>C. <span style="color: rgb(34, 34, 34); font-family: arial, sans-serif; font-size: small;">γ-particles</span><br>D. none of these |