ECAT Pre General Science Physics Chapter 21 Nuclear Physics Online Test

Sr	Questions	Answers Choice
1	Proton was discovered by Rutherford in	A. 1915 B. 1906 C. 1910 D. 1920
2	Neutron was discovered in	A. 1915 B. 1920 C. 1925 D. 1932
3	Neutron was discovered by	A. Curie B. Roentgen C. Chadwick D. Rutherford
4	In 1932 Chadwick discovered	A. proton B. neutron C. photon D. electron
5	Charge on neutron is	A. 1.6 x 10⁻¹⁹C B. zero C. -1.6 x 10⁻¹⁹C D. 1.2 x 10⁻¹⁹C
6	A particle having the mass of electron and charge of a proton is called a	A. photon B. position C. antiproton D. antineutrino
7	Nucleus consists of	A. proton and neutron B. protons and electron C. electron and neutron D. protons only
8	Mass of neutron is	A. 1.67 x 10⁻³¹kg B. 1.67 x 10⁻²⁷kg C. 9.1 x 10⁻³¹kg D. 1.67 x 10⁻19kg
9	Mass of proton is	A. 1.67 x 10⁻²⁷kg B. 1.67 x 10⁻³¹kg C. 1.66 x 10⁻³⁴kg D. 1.67 x 10⁻¹⁷kg
10	1 amu is equal to	A. 1.66 x 10⁻²⁴kg B. 1.66 x 10⁻¹⁹kg C. 1.66 x 10⁻³⁴kg D. 1.66 x 10⁻²⁷kg
11	The chemical behaviour of an atom is determined by	A. binding energy B. atomic number C. mass number D. number of isotopes
12	According to Rutherford atomic model, the positive charge in an atom	A. is concentrated at its centre B. is in the form of positive electron at same distance from its centre C. is spread uniformly through its volume D. none of these
13	For an atom having atomic number 'Z' and atomic weight 'A', the number of neutrons in the nucleous is	A. A - Z B. A C. Z D. A + Z
14	The nucleous of uranium -235 differs from a nucleous of a uranium -238 in that the later contains	A. 3 more neutrons B. 3 more electrons C. 3 more protons D. 3 more ions
15	The total charge of any nucleus is given as	A. Ze² B. Z²e C. Z/e

		D. Ze
16	The number of protons inside a nucleus is called	A. mass number B. atomic weight C. atomic number D. none of these
17	The number of all the protons and neutrons in a nucleus is known as	A. atomic number B. mass number C. charge number D. none of these
18	For an atom having atomic number Z and atomic weight A, the charge on the nucleus is	A. A - Z B. A + Z C. Z D. A
19	For an atom having atomic number Z and atomic weight A, the number of electron in an atoms	A. A - Z B. A + Z C. Z D. A
20	The number if neutrons in the nucleus of $_{92}U^{235}$are	A. Infinite B. 92 C. 235 D. 143
21	Mass of proton is of order of	A. 10⁻³¹gm B. 10⁻²⁷kg C. 10⁻²⁴gm D. 10⁺²⁷kg
22	Charge on proton is	A. 1.59 x 10⁻⁹C B. 1.59 x 10⁻⁷C C. -1.59 x 10⁻¹⁹C D. 1.59 x 10⁻¹⁹C
23	Structure of the nucleus was explained by	A. J.J Thomson B. Bohr C. Millikan D. Rutherford
24	The diameter of an atom is of the order	A. 10⁻¹²⁵m B. 10⁻¹¹m C. 10⁻¹⁰m D. 10⁻⁹m
25	Neutrons are	A. positive charge B. negatively charged C. massless D. neutral
26	Electrons are	A. positive charged B. negatively charged C. massless D. neutral
27	Nuclei that have the same charge number but different mass number are called	A. isotones B. isomers C. isotopes D. isobars
28	The number of isotopes of hydrogen are	A. 2 B. 1 C. 3 D. 4
29	How many isotopes of helium are present?	A. 1 B. 2 C. 3 D. 4
30	Hydrogen atom with only one proton in its nucleus, and one electron in its orbit is called	A. deuteron B. deterium C. protium D. tritium
31	Hydrogen atom with only one proton and one neutron in its nucleus, and one electron, is called	A. deuterium B. protium C. tritium D. none of these
32	The chemical properties of all the isotopes of an elements are	A. same B. different C. slightly different D. none of these
		A. electron B. position

33	The chemical properties of an element depends upon the number of	B. position C. photons D. neutrons
34	A mass spectrograph sort out	A. molecules B. atoms C. elements D. isotopes
35	The most abundant isotope of neon is	A. neon-20 B. neon-21 C. neon-22 D. neon-23
36	Neon gas have three isotopes whose atomic numbers are	A. 20, 24 , 23 B. 20, 21 , 22 C. 20, 19 , 21 D. none of these
37	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 B. nuclear fusion C. man defect D. radioactivity
38	1 amu is equal to.	A. 1.66 x 10⁻²⁴kg B. 1.66 x 10⁻¹⁹kg C. 1.66 x 10⁻²⁴kg D. 1.66 x 10⁻²⁷kg
39	If 'V' is the relativistic speed and 'C' is the speed of light then according to Einstien the factor V/C must always be	A. Equal to 1 B. Less than 1 C. Greater than 1 D. Infinity
40	The energy acquired by a mass of 1g moving with the speed of light is	A. 3 x 10⁸J B. 9 x 10¹³J C. 3 x 10¹³J D. 9 x 10¹⁶J
41	The missing mass which is converted to energy in the formation of nucleus, is called	A. packing fraction B. mass defect C. binding energy D. none of these
42	The energy is found from Einstein's mass energy relation is called	A. binding energy of electron B. binding energy of proton C. binding energy of neutron D. binding energy of nucleus
43	The amount of energy equivalent to 1 a.m.u is	A. 9.315 Mev B. 93.15 Mev C. 931.5 Mev D. 2.22 Mev
44	Binding energy per nucleus is	A. greater for heavy nucleus B. least for heavy nucleus C. greatest for light nuclei D. decreases for medium weight niclei
45	Radioactivity	A. is exhibited more by semiconductors in general B. in exhibited more by the element when they are coupled C. with other radioactive elements by a covalent bond D. is an atomic property of radioactive elements
46	Radioactivity was discovered by	A. Rutherford B. Henri Becqureal C. Maxwell D. James Chadwick
47	Maric Curie and Pieree Curie discovered two new radioactive elements, which are called	A. polonium uranium B. uranium and radium C. polonium and radium D. none of these
48	Beta particles are	A. hydrogen nuclei B. helium nuclei C. electrons D. photons
49	Alfa particles are	A. hydrogen nuclei B. helium nuclei C. electrons D. photons
		A. electron

50	Gamma rays consist of steam of	B. proton C. photons D. all of these
51	Alfa , beta and gamma rays are emitted from a radio-active substance	A. spontaneously B. when it is heated C. when it is exposed to light D. When it interacts with the other particle
52	Curie is a unit of	A. reluctance B. resistivity C. binding energy D. radioactivity
53	Radioactivity is	A. self disruptive activity B. spontaneous activity C. exhibited by all elements under proper conditions D. both 'a' and 'b'
54	When a nucleus emits an alpha particle, it atomic mass decreased by	A. 2 B. 1 C. 4 D. 3
55	When a nucleus emits an alpha particles, its charge number decreases by	A. 3 B. 2 C. 6 D. 5
56	An alpha particle has a charge of	A. +2e B. -2e C. -e D. +3e
57	If a nucleus emits an alpha particle, its mass number decreases by 4 while charge number decreased by	A. -4 B. 4 C. 2 D. 1
58	The rate of decay of radioactive substance	A. is constant B. decrease exponentially with time C. varies inversely as time D. decreases linearly with time
59	A curie represents a very strong source of	A. α-particle B. β-particle C. γ-particle D. none of these
60	Phenomenon of radioactivity is due to disintegration of	A. nucleus B. neutron C. proton D. molecule
61	When radioactive nucleus emits aβ-particle, the proton-neutron ratio	A. decrease B. increase C. same D. none of these
62	After alpha decay the atomic number of the atom	A. increase by four B. decreases by two C. increases by two D. decrease by four
63	The rate of decay of a radioactive substance	A. decrease exponentially with time B. decreases linearly with time C. increases linearly with time D. increases exponentially with time
64	Different radioactive material have	A. same half lives B. different half lives C. same mean lives D. same total lives
65	The half life of radioactive substances depends upon	A. amount of substance B. energy of substance C. state of substance D. temperature of substance
66	The time required for a radioactive material to decrease in active by one half is called	A. half time B. half life

66	The time required for a radioactive material to decrease in active by one half is called	C. disintegration time D. mean life
67	The emission of radiations take place in elements, having charge number greater than	A. 109 B. 82 C. 69 D. 52
68	In radio-active decay, the original element which disintegrate to another element is called	A. element B. daughter element C. parent element D. none of these
69	In radioactive decay, the new element which is formed due to the disintegration of original element is called	A. element B. daughter element C. parent element D. none of these
70	Fraction of the decaying atoms per unit time is called	A. decay atom B. decay element C. decay constant D. decay
71	The unit of decay constant is	A. sex B. sec² C. sec⁻¹ D. sec⁻²
72	The half lie of radium-226 is	A. 238 years B. 4.5 x 10⁹days C. 1620 years D. 332 years
73	The half life of uranium-238 is	A. 6.2 x 10⁹years B. 4.5 x 10⁹days C. 4.5 x 10⁹years D. 1.3 x 10⁶years
74	Which of the following material has longer half life	A. radium B. polonium C. radium D. uranium
75	Which of the following material has smaller has life	A. uranium B. polonium C. radium D. radian
76	The distance travelled byα-particle in a medium before coming to rest, is called	A. range ofγ-particle B. range of neutrons C. range of particle D. none of these
77	The range of particle depends upon the factor	A. charge, mass and energy of particle B. density of medium C. ionization potential of the atoms D. all the above
78	How much time, theα-particle more massive than an electron	A. 600 B. 7000 C. 5000 D. 15000
79	β-particles are easily deflected by collisions than heavy	A. α-particles B. β-particles C. γ-particles D. none of these
80	The range ofβ-particle in air is greater than that ofα-particle by	A. 1000 times B. 100 times C. 15 times D. 10 times
81	The mass of the rest of particle is	A. zero B. less thanα-particle C. equal to<span style="color:

81	The penetration power ofβ-particle is	rgb(34, 34, 34); font-family: arial, sans-serif; font-size: small;">α-particle D. greater thanα-particle
82	γ-rays are	A. electrostatic waves B. electromagnetic waves C. heavy particles D. longitudinal waves
83	γ-rays behave like a particle because they explain the	A. Compton effect B. Photoelectric effect C. Pair-production D. all the above
84	Pair production take place when energy ofγ-rays photon is	A. equal to 1.02 Mev- B. greater than 1.02 Mev C. less than 1.02 Mev D. none of these
85	Radiation detector are used to	A. measure intensity of radiation B. measure energy of radiation C. difference between different types of radiation D. all the above
86	When a charged particle passes through matter, it produces ionization, this effect is used in	A. fission reaction B. reactor C. radiation detector D. fusion reaction
87	Which of these is not a radiation detector	A. Wilson cloud chamber B. cyclotron acceleration C. Geiger Miller counter D. solid state detector
88	Neutron was suggested to be in the nucleus by:	A. Rutherford in 1920 B. Bohar in 1913 C. Dirac in 1928 D. Anderson in 1932 E. None of these
89	Neutron was disvovered by:	A. Rutherford in 1920 B. Chadwick in 1922 C. Bohr in 1913 D. Compton in 1927 E. None of these
90	Nucleon means:	A. Only electrons B. Only neutrons C. Only protons D. Both (A) and (C) E. Both (B) and (C)
91	The figure 1.007276μ shows the mass of an:	A. Atom B. Positron C. Electron D. Neutron E. Proton
92	Nucleus of a hydrogen atom may contain:	A. One neutron only B. Two protons and one neutron C. Two protons and two neutrons D. Aany of above E. One proton only
93	The nuclei of an element having the same charge number but different mass numbers are called:	A. Isobars B. Isotopes C. Isomers D. Isobaric E. Isothermal
94	The isotope/s of hydrogen is /are:	A. Protium B. Deuterium C. Tritium D. Both (A) and (B) E. All of these
95	The nucleus/nuclei of hydrogen is/are:	A. Proton B. Deuteron C. Triton D. All of these E. None of these
96	For Protium, the mass defect is:	A. Infinite B. Zero C. Very large

96	For Protium, the mass defect is:	C. Very large D. A few grams E. None of these
97	Referring to the above figure, we can say that of all the elements, the most stable element is	A. Phosphours B. Iron C. uranium D. Lithium E. Bismuth
98	Referring to the above figure, the binding energy per nucleon increases upto mass number equal to:	A. 50 B. 100 C. 150 D. 200 E. 250
99	Radioactivity was discovered by:	A. Becquerel B. Marie curie C. Pierre curie D. All of them E. None of these
100	Radium was discovered by:	A. Becquerel B. Marie curie C. Pierre curie D. Rutherford E. Both (B) and (C)
101	Marie curie and Pierre curie discovered:	A. Uranium B. Polonium C. Radium D. Both (A) and (C) E. Plutonium
102	The nucleus left after the emission of some radiation is called:	A. Parent nucleus B. Daughter necleus C. Mother necleus D. Any of these E. None of these
103	During the nuclear changes, the law/s of conservation that hold/s are that of:	A. Charge B. energy C. Momentum D. Mass E. All of these
104	When certain nucleus emits anα particle, its mass number:	A. Increases by one B. Decreases by one C. Remain same D. Decreases by four E. None of these
105	When certain nucleus emits aβ-particles, is mass number:	A. Remain same B. Increases by one C. Decreases by one D. Decreases by four E. None of these
106	When thorium nucleus emits aβ-particle, the daughter nucleus is called:	A. Protactinium B. Actinium C. Uranium D. Radium E. Redon
107	Rate of decay is actually described by.	A. Half line B. Decay constant C. Mean life D. Total life E. None of these
108	The reciprocal of decay constant λ of a radioactive material is:	A. Frequency B. Half life C. Year D. Mean life E. None of these
109	The unit of decay constant is:	A. Second B. Metre C. Hour D. Year E. Second⁻¹
110	In wilson cloud chamber, the air becomes saturated with:	A. Alcohol vapours B. Water C. Helium gas D. Nitrogen gas E. None of these
		A. Thin mica window

111	The counter, which also provides the power to the G.M. tube is called:	A. Thin mica window B. thin glass window C. Airy window D. Wooden window E. None of these
112	Rutherford performed an experiment on nuclear reactions in:	A. 1718 A.D B. 1818 A.D C. 1918 A.D D. 2001 A.D. E. 1701 A.D.
113	In his experiment on nuclear reactions, Rutherford bombardedα particles on:	A. Nitrogen B. Hydrogen C. Lead D. Oxygen E. Krypton
114	A mass difference of 0.0012 u is equivalent to and energy of:	A. 0.5 Me V B. 1.13 MeV C. 5.13 MeV D. 1.13 keV E. 1.13 eV
115	There is present in paraffin a large amount of:	A. Nitrogen B. Hydrogen C. Carbon D. Baryllium E. Lithium
116	Examples of moderators used in a fission reactor is/are:	A. Water B. Heavy water C. Carbon D. Hydrocarbon E. All of these
117	Heavy water is made of one oxygen atom and two atoms of:	A. Protium B. Deuterium C. Tritium D. Any of these E. None of these
118	U-238 present in the natural uranium is about:	A. 59% B. 0.007% C. 99% D. 39% E. 19%
119	Which are not the elementary particles?	A. Photons B. Leptons C. Hadrons D. Quarks E. None of these
120	A pair of quark and antiquark makes a:	A. Meson B. Baryon C. Proton D. Neutron E. None of these
121	Three quarks make:	A. An electron B. A meson C. A baryon D. A photon E. None of these