

## ECAT 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. $1.6 \times 10^{-19}$ C B. zero C. $-1.6 \times 10^{-19}$ C D. $1.2 \times 10^{-19}$ C
6	A particle having the mass of electron and charge of a proton is called a	A. photon B. positron 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. $1.67 \times 10^{-31}$ kg B. $1.67 \times 10^{-27}$ kg C. $9.1 \times 10^{-31}$ kg D. $1.67 \times 10^{-19}$ kg
9	Mass of proton is	A. $1.67 \times 10^{-27}$ kg B. $1.67 \times 10^{-31}$ kg C. $1.66 \times 10^{-34}$ kg D. $1.67 \times 10^{-17}$ kg
10	1 amu is equal to	A. $1.66 \times 10^{-24}$ kg B. $1.66 \times 10^{-19}$ kg C. $1.66 \times 10^{-34}$ kg D. $1.66 \times 10^{-27}$ kg
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 nucleus is	A. $A - Z$ B. A C. Z D. $A + Z$
14	The nucleus of uranium-235 differs from a nucleus 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. $Ze$ B. $Z^2e$ C. $Z/e$ D. $-Ze$

		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 ${}_{92}\text{U}^{235}$ are	A. Infinite B. 92 C. 235 D. 143
21	Mass of proton is of order of	A. $10^{-31}$ gm B. $10^{-27}$ kg C. $10^{-24}$ gm D. $10^{-27}$ kg
22	Charge on proton is	A. $1.59 \times 10^{-9}$ C B. $1.59 \times 10^{-7}$ C C. $-1.59 \times 10^{-19}$ C D. $1.59 \times 10^{-19}$ C
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. $10^{-125}$ m B. $10^{-11}$ m C. $10^{-10}$ m D. $10^{-9}$ m
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. $1.66 \times 10^{-24}$ kg B. $1.66 \times 10^{-19}$ kg C. $1.66 \times 10^{-24}$ kg D. $1.66 \times 10^{-27}$ kg
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. $3 \times 10^{8}$ J B. $9 \times 10^{13}$ J C. $3 \times 10^{13}$ J D. $9 \times 10^{16}$ J
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 Becquereal 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. $\alpha$ -particle B. $\beta$ -particle C. $\gamma$ -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 $\alpha$ -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. $\text{sec}^{-2}$ C. $\text{sec}^{-1}$ D. $\text{sec}^{-2}$
72	The half lie of radium-226 is	A. 238 years B. $4.5 \times 10^9$ days C. 1620 years D. 332 years
73	The half life of uranium-238 is	A. $6.2 \times 10^9$ years B. $4.5 \times 10^9$ days C. $4.5 \times 10^9$ years D. $1.3 \times 10^6$ years
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 by $\alpha$ -particle in a medium before coming to rest, is called	A. range of $\gamma$ -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, the $\alpha$ -particle more massive than an electron	A. 600 B. 7000 C. 5000 D. 15000
79	$\beta$ -particles are easily deflected by collisions than heavy	A. $\alpha$ -particles B. $\beta$ -particles C. $\gamma$ -particles D. none of these
80	The range of $\beta$ -particle in air is greater than that of $\alpha$ -particle by	A. 1000 times B. 100 times C. 15 times D. 10 times
81	The range of $\alpha$ -particle in air is greater than that of $\beta$ -particle by	A. zero B. less than $\alpha$ -particle C. equal to $\alpha$ -particle D. more than $\alpha$ -particle

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

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 nucleus C. Mother nucleus 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 $\alpha$ 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 $\alpha$ -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 $\alpha$ -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 $\lambda$ 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 <sup>-1</sup>
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:	<p>A. Thin glass window</p> <p>B. thin glass window</p> <p>C. Airy window</p> <p>D. Wooden window</p> <p>E. None of these</p>
112	Rutherford performed an experiment on nuclear reactions in:	<p>A. 1718 A.D</p> <p>B. 1818 A.D</p> <p>C. 1918 A.D</p> <p>D. 2001 A.D.</p> <p>E. 1701 A.D.</p>
113	In his experiment on nuclear reactions, Rutherford bombarded particles on:	<p>A. Nitrogen</p> <p>B. Hydrogen</p> <p>C. Lead</p> <p>D. Oxygen</p> <p>E. Krypton</p>
114	A mass difference of 0.0012 u is equivalent to and energy of:	<p>A. 0.5 Me V</p> <p>B. 1.13 MeV</p> <p>C. 5.13 MeV</p> <p>D. 1.13 keV</p> <p>E. 1.13 eV</p>
115	There is present in paraffin a large amount of:	<p>A. Nitrogen</p> <p>B. Hydrogen</p> <p>C. Carbon</p> <p>D. Beryllium</p> <p>E. Lithium</p>
116	Examples of moderators used in a fission reactor is/are:	<p>A. Water</p> <p>B. Heavy water</p> <p>C. Carbon</p> <p>D. Hydrocarbon</p> <p>E. All of these</p>
117	Heavy water is made of one oxygen atom and two atoms of:	<p>A. Protium</p> <p>B. Deuterium</p> <p>C. Tritium</p> <p>D. Any of these</p> <p>E. None of these</p>
118	U-238 present in the natural uranium is about:	<p>A. 59%</p> <p>B. 0.007%</p> <p>C. 99%</p> <p>D. 39%</p> <p>E. 19%</p>
119	Which are not the elementary particles?	<p>A. Photons</p> <p>B. Leptons</p> <p>C. Hadrons</p> <p>D. Quarks</p> <p>E. None of these</p>
120	A pair of quark and antiquark makes a:	<p>A. Meson</p> <p>B. Baryon</p> <p>C. Proton</p> <p>D. Neutron</p> <p>E. None of these</p>
121	Three quarks make:	<p>A. An electron</p> <p>B. A meson</p> <p>C. A baryon</p> <p>D. A photon</p> <p>E. None of these</p>
122	Proton was discovered by Rutherford in	<p>A. 1915</p> <p>B. 1906</p> <p>C. 1910</p> <p>D. 1920</p>
123	Neutron was discovered in	<p>A. 1915</p> <p>B. 1920</p> <p>C. 1925</p> <p>D. 1932</p>
124	Neutron was discovered by	<p>A. Curie</p> <p>B. Roentgen</p> <p>C. Chadwick</p> <p>D. Rutherford</p>
125	In 1932 Chadwick discovered	<p>A. proton</p> <p>B. neutron</p> <p>C. photon</p> <p>D. electron</p>
126	Charge on neutron is	<p>A. <math>1.6 \times 10^{-19}</math> C</p> <p>B. zero</p> <p>C. <math>-1.6 \times 10^{-19}</math> C</p>



		D. $1.2 \times 10^{-19}$ C
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182	When radioactive nucleus emits a $\beta$ -particle, the proton-neutron ratio	A. decrease B. increase C. same D. none of these
183	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
184	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
185	Different radioactive material have	A. same half lives B. different half lives C. same mean lives D. same total lives
186	The half life of radioactive substances depends upon	A. amount of substance B. energy of substance C. state of substance D. temperature of substance
187	The time required for a radioactive material to decrease in active by one half is called	A. half time B. half life C. disintegration time D. mean life
188	The emission of radiations take place in elements, having atomic number greater than	A. 109 B. 82 C. 69 D. 52
189	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
190	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
191	Fraction of the decaying atoms per unit time is called	A. decay atom B. decay element C. decay constant D. decay
192	The unit of decay constant is	A. $\text{sec}^{-2}$ B. $\text{sec}^{-1}$ C. $\text{sec}^{-1}$ D. $\text{sec}^{-2}$
193	The half life of radium-226 is	A. 238 years B. $4.5 \times 10^9$ days C. 1620 years D. 332 years
194	The half life of uranium-238 is	A. $6.2 \times 10^9$ years B. $4.5 \times 10^9$ days C. $4.5 \times 10^9$ years D. $1.3 \times 10^6$ years

195	Which of the following material has longer half life	A. radium B. polonium C. radium D. uranium
196	Which of the following material has smaller has life	A. uranium B. polonium C. radium D. radian
197	The distance travelled by $\alpha$ -particle in a medium before coming to rest, is called	A. range of $\gamma$ -particle B. range of neutrons C. range of particle D. none of these
198	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
199	How much time, the $\alpha$ -particle more massive than an electron	A. 600 B. 7000 C. 5000 D. 15000
200	$\beta$ -particles are easily deflected by collisions than heavy	A. $\alpha$ -particles B. $\beta$ -particles C. $\gamma$ -particles D. none of these
201	The range of $\beta$ -particle in air is greater than that of $\alpha$ -particle by	A. 1000 times B. 100 times C. 15 times D. 10 times
202	The penetration power of $\beta$ -particle is	A. zero B. less than $\alpha$ -particle C. equal to $\alpha$ -particle D. greater than $\alpha$ -particle
203	$\gamma$ -rays are	A. electrostatic waves B. electromagnetic waves C. heavy particles D. longitudinal waves
204	$\gamma$ -rays behave like a particle because they explain the	A. Compton effect B. Photoelectric effect C. Pair-production D. all the above
205	Pair production take place when energy of $\gamma$ -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
206	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
207	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
208	Which of these is not a radiation detector	A. Wilson cloud chamber B. cyclotron acceleration C. Geiger Miller counter

		D. solid state detector
209	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
210	Neutron was discovered by:	A. Rutherford in 1920 B. Chadwick in 1922 C. Bohr in 1913 D. Compton in 1927 E. None of these
211	Nucleon means:	A. Only electrons B. Only neutrons C. Only protons D. Both (A ) and (C) E. Both (B) and (C)
212	The figure 1.007276 $\mu$ shows the mass of an:	A. Atom B. Positron C. Electron D. Neutron E. Proton
213	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
214	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
215	The isotope/s of hydrogen is /are:	A. Protium B. Deuterium C. Tritium D. Both (A) and (B) E. All of these
216	The nucleus/nuclei of hydrogen is/are:	A. Proton B. Deuteron C. Triton D. All of these E. None of these
217	For Protium, the mass defect is:	A. Infinite B. Zero C. Very large D. A few grams E. None of these
218	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
219	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
220	Radioactivity was discovered by:	A. Becquerel B. Marie curie C. Pierre curie D. All of them E. None of these
221	Radium was discovered by:	A. Becquerel B. Marie curie C. Pierre curie D. Rutherford E. Both (B) and (C)
222	Marie curie and Pierre curie discovered:	A. Uranium B. Polonium C. Radium D. Both (A) and (C) E. Plutonium
223	The nucleus left after the emission of some radiation is called:	A. Parent nucleus B. Daughter nucleus C. Mother nucleus

223	The nucleus left after the emission of some radiation is called:	C. Mother nucleus D. Any of these E. None of these
224	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
225	When certain nucleus emits $\alpha$ particle, its mass number:	A. Increases by one B. Decreases by one C. Remain same D. Decreases by four E. None of these
226	When certain nucleus emits $\alpha\beta$ -particles, its mass number:	A. Remain same B. Increases by one C. Decreases by one D. Decreases by four E. None of these
227	When thorium nucleus emits $\alpha\beta$ -particle, the daughter nucleus is called:	A. Protactinium B. Actinium C. Uranium D. Radium E. Redon
228	Rate of decay is actually described by.	A. Half line B. Decay constant C. Mean life D. Total life E. None of these
229	The reciprocal of decay constant $\lambda$ of a radioactive material is:	A. Frequency B. Half life C. Year D. Mean life E. None of these
230	The unit of decay constant is:	A. Second B. Metre C. Hour D. Year E. Second <sup>-1</sup>
231	In wilson cloud chamber, the air becomes saturated with:	A. Alcohol vapours B. Water C. Helium gas D. Nitrogen gas E. None of these
232	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
233	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.
234	In his experiment on nuclear reactions, Rutherford bombarded $\alpha$ particles on:	A. Nitrogen B. Hydrogen C. Lead D. Oxygen E. Krypton
235	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
236	There is present in paraffin a large amount of:	A. Nitrogen B. Hydrogen C. Carbon D. Baryllium E. Lithium
237	Examples of moderators used in a fission reactor is/are:	A. Water B. Heavy water C. Carbon D. Hydrocarbon E. All of these
		A. Protium B. Deuterium

238	Heavy water is made of one oxygen atom and two atoms of:	C. Tritium D. Any of these E. None of these
239	U-238 present in the natural uranium is about:	A. 59% B. 0.007% C. 99% D. 39% E. 19%
240	Which are not the elementary particles?	A. Photons B. Leptons C. Hadrons D. Quarks E. None of these
241	A pair of quark and antiquark makes a:	A. Meson B. Baryon C. Proton D. Neutron E. None of these
242	Three quarks make:	A. An electron B. A meson C. A baryon D. A photon E. None of these