

ECAT Chemistry Online Test

Sr	Questions	Answers Choice
1	The number of de-electrons retained in Fe^{2+} (At.No. of Fe = 26) ions is	A. 3 B. 4 C. 5 D. 6
2	The configuration $1s^2 2s^2 2p^5 3s^1$ shows	A. Excited state of O^{2-} B. Excited state of neon C. Excited state of fluorine D. Ground state of fluorine atom
3	The energy of the first electron is helium will be	A. -13.6 eV B. -54.4 eV C. -5.44 eV D. zero
4	Which of the following is not isoelectronic?	A. Na^{+} B. Mg^{2+} C. O^{2-} D. Cl^{-}
5	The spectrum of He is expected to be similar to that of	A. H B. Na C. He^{+} D. Li^{+}
6	Which of the following element's outermost orbits last electron has magnetic quantum number $m=0$?	A. Na B. O C. Cl D. N
7	Which is not true with respect to cathode rays?	A. A stream of electrons B. Charged particles C. Move with speed as that of light D. Can be deflected by magnetic fields
8	In the ground state, an element has 13 electrons in its M shell. The element is	A. Copper B. Chromium C. Nickel D. Iron
9	Rutherford's atomic model suggests the existence of	A. Atom B. Nucleus C. alpha particle D. Measens
10	The third line of the Balmer series, in the emission spectrum of the hydrogen atom, is due to the transition from the	A. Fourth Bohr orbit to the first Bohr orbit B. Fifth Bohr orbit to the second Bohr orbit C. Sixth Bohr orbit to the third Bohr orbit D. Seventh Bohr orbit to the third Bohr orbit
11	In which of the following pairs, the numbers of electrons in the outermost shell are different?	A. As, Sb B. Ge, Sn C. In, Pt D. Se, Te
12	The total number of orbitals possible for the quantum number n is	A. n B. n^2 C. $2n$ D. $2n^2$
13	A 4f orbital has	A. one node B. two node C. three node D. four nodes
14	1 erg of energy corresponds to	A. $6.02 \times 10^{23} \text{ J/mol}$ B. $6.02 \times 10^{16} \text{ J/mol}$ C. 1 erg/mol D. 10^{-7} J/mol

15	The de-Broglie wavelength of a particle with mass 1g and velocity 100 m/s is	A. $6.63 \times 10^{-33} \text{ m}$ B. $6.63 \times 10^{-34} \text{ m}$ C. $6.63 \times 10^{-35} \text{ m}$ D. $6.65 \times 10^{-35} \text{ m}$
16	Which of the following has more unpaired d-electrons?	A. Zn^{+2} B. Fe^{+2} C. Ni^{+3} D. Cu^{+2}
17	Heaviest particle is	A. Meson B. Neutron C. Proton D. Electron
18	The four quantum numbers of the valency electron of potassium are	A. 4,1,1,1/2 B. 4,0,0,1/2 C. 4,1,0,1/2 D. 4,4,0,1/2
19	An electron has principal quantum number 3. The number of its 1 subshell and 2 orbitals would be respectively	A. 3 and 5 B. 3 and 7 C. 3 and 9 D. 2 and 5
20	If the radius of first Bohr orbit be a_0 , then the radius of third Bohr orbit would be	A. $3 \times a_0$ B. $6 \times a_0$ C. $9 \times a_0$ D. $1/2 \times a_0$
21	The quantum number which determines the shape of the orbital is	A. principal B. azimuthal C. magnetic D. spin
22	Which of the following orbitals have a dumb bell shape?	A. s B. p C. d D. f
23	The total number of orbitals in a shell with principal quantum number 'n' is	A. 2n B. $2n^2$ C. n^2 D. n + 1
24	Rutherford's experiment led to the discovery of	A. Nucleus B. Electron C. Proton D. alpha particle
25	Azimuthal quantum number of last electron of ${}_{11}\text{Na}$ is	A. 1 B. 2 C. 3 D. 0
26	For which of the following sets of quantum numbers and electron will have the highest energy?	A. 3,2,1,1/2 B. 4,2,-1,1/2 C. 4,1,0,-1/2 D. 5,0,0,1/2
27	The radius of second Bohr's orbit is	A. 0.053 nm B. 0.053/4 nm C. $0.053 \times 4 \text{ nm}$ D. $0.053 \times 20 \text{ nm}$
28	The electron in an atom	A. moves randomly around the nucleus B. has fixed space around the nucleus C. is stationary in various energy levels D. moves around its nucleus in definite energy levels
29	If the value of principal quantum number is 3. the total possible values for magnetic quantum number will be	A. 1 B. 4 C. 9 D. 12
30	The total number of possible values of magnetic quantum number for the value of $l=3$ is	A. 3 B. 1 C. 5 D. 7