Quantum number, Electronic configuration and Shape of orbitals

211. The electrons would go to lower energy levels first and then to higher energy levels according to which of the following
(a) Aufbau principle
(b) Pauli's exclusion principle
(c) Hund's rule of maximum multiplicity
(d) Heisenberg's uncertainty principle

212. Energy of atomic orbitals in a particular shell is in the order
(a) $s < p < d < f$
(b) $s > p > d > f$
(c) $p < d < f < s$
(d) $f > d > s > p$

213. Aufbau principle is not satisfied by
(a) Cr and Cl (b) Cu and Ag
(c) Cr and Mg (d) Cu and Na

214. Which of the following explains the sequence of filling the electrons in different shells
(a) Hund's rule (b) Octet rule
(c) Aufbau principle (d) All of these

215. Aufbau principle is obeyed in which of the following electronic configurations
(a) $1s^2 2s^2 2p^6$ (b) $1s^2 3p^3 3s^2$
(c) $1s^2 3s^2 3p^6$ (d) $1s^2 2s^2 3s^2$

216. Following Hund's rule which element contains six unpaired electron
(a) *Fe* (b) *Co*
(c) *Ni* (d) *Cr*

217. Electron enters the sub-shell for which $(n + l)$ value is minimum. This is enunciated as
(a) Hund's rule
(b) Aufbau principle
(c) Heisenberg uncertainty principle
(d) Pauli's exclusion principle

218. The atomic orbitals are progressively filled in order of increasing energy. This principle is called as
(a) Hund's rule
(b) Aufbau principle
(c) Exclusion principle
(d) de-Broglie rule

219. The correct order of increasing energy of atomic orbitals is
(a) $5p < 4f < 6s < 5d$
(b) $5p < 6s < 4f < 5d$
(c) $4f < 5p < 5d < 6s$
(d) $5p < 5d < 4f < 6s$

220. The orbital with maximum energy is
(a) 3*d* (b) 5*p*
(c) 4*s* (d) 6*d*

221. *p*-orbitals of an atom in presence of magnetic field are

(a) Two fold degenerate
(b) Non degenerate
(c) Three fold degenerate
(d) None of these

222. Orbital angular momentum for a *d*-electron is

(a) $\frac{6h}{2\pi}$ (b) $\frac{\sqrt{6}h}{2\pi}$

(c) $\frac{12h}{2\pi}$ (d) $\frac{\sqrt{12}h}{2\pi}$

223. Number of nodal centres for 2*s* orbital

(a) 1 (b) 0
(c) 4 (d) 3

224. The orbital angular momentum of an electron in $2s$-orbital is

(a) $\frac{1}{2}\frac{h}{2\pi}$ (b) $\frac{h}{2\pi}$

(c) $\sqrt{2}\frac{h}{2\pi}$ (d) Zero

225. The maximum number of electrons present in an orbit $l = 3$, is

(a) 6 (b) 8
(c) 10 (d) 14

226. Number of unpaired electrons in Mn^{4+} is

(a) 3 (b) 5
(c) 6 (d) 4

227. Which of the following sequence is correct as per Aufbau principle

(a) $3s < 3d < 4s < 4p$
(b) $1s < 2p < 4s < 3d$
(c) $2s < 5s < 4p < 5d$
(d) $2s < 2p < 3d < 3p$

228. Electronic configuration of deuterium atom is

(a) $1s^1$ (b) $2s^2$
(c) $2s^1$ (d) $1s^2$