## **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) 
$$s$$

(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)  $1s^23p^33s^2$
- (c)  $1s^23s^23p^6$
- (d)  $1s^22s^23s^2$

- 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) 3d
- (b) 5p
- (c) 4s
- (d) 6d
- 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 2s orbital
  - (a) 1

(b) 0

(c) 4

- (d) 3
- **224.** The orbital angular momentum of an electron in 2*s*-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  $Mn^{4+}$

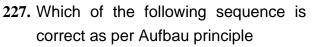
is

(a) 3

(b) 5

(c) 6

(d) 4



(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)  $1s^2$

