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Chemistry Class - 11: Chapter – 2. Structure of Atom – Part-3

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Multiple Choice Questions

Questions 11:

Total number of orbitals associated with third shell will be _____.

- (i)
- (ii)
- (iii)
- (iv)

Answer: (iii)

Solution:

Questions 12:

Orbital angular momentum depends on _____.

- (i)
- (ii) n and l
- (iii) n and m
- (iv) m and s

Answer: (i)

Solution:

Questions 13:

Chlorine exists in two isotopic forms, $Cl - 37$ and $Cl - 35$ but its atomic mass is 35.5. This indicates the ratio of $Cl - 37$ and $Cl - 35$ is approximately

- (i) 1 : 2
- (ii) 1 : 1
- (iii) 1 : 3
- (iv) 3 : 1

Answer: (iii)

Solution:

Questions 14:

The pair of ions having same electronic configuration is _____.

- (i) Cr^{3+}, Fe^{3+}
- (ii) Fe^{3+}, Mn^{2+}
- (iii) Fe^{3+}, CO^{3+}
- (iv) Sc^{3+}, Cr^{3+}

Answer: (ii)

Solution:

Questions 15:

For the electrons of oxygen atom, which of the following statements is correct?

- (i) Z_{eff} for an electron in a $2s$ orbital is the same as Z_{eff} for an electron in a $2p$ orbital.
- (ii) An electron in the $2s$ orbital has the same energy as an electron in the $2p$ orbital.
- (iii) Z_{eff} for an electron in a $1s$ orbital is the same as Z_{eff} for an electron in a $2s$ orbital.
- (iv) The two electrons present in the $2s$ orbital have spin quantum numbers m_s but of opposite sign.

Answer: (iv)

Solution:

Questions 16:

If travelling at same speeds, which of the following matter waves have the shortest wavelength?

- (i) Electron
- (ii) Alpha particle (He^{2+})
- (iii) Neutron
- (iv) Proton

Answer: (ii)

Solution: