

Chapter 2 Structure Of Atom

Assignment 3

Class 11

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DPP

DAILY PRACTICE PROBLEMS

CLASS : XIth

DATE :

SUBJECT : CHEMISTRY

DPP No. : 3

Topic :- STRUCTURE OF ATOM

- The energy of an electron in first Bohr orbit of H-atom is -13.6 eV. The possible energy value of electron in the excited state of Li^{2+} is
a) -122.4 eV b) 30.6 eV c) -30.6 eV d) 13.6 eV
- When the azimuthal quantum number has the value of 2, the number of orbitals possible are
a) 7 b) 5 c) 3 d) 0
- Compared to the lightest atom the heaviest atom weighs:
a) 200 times b) 238 times c) 92 times d) 16 times
- If the following particles travel with equal speed, then for which particle the wavelength will be longest?
a) Proton b) Neutron c) α -particle d) β -particle
- The orbital cylindrically symmetrical about x -axis is:
a) p_z b) p_y c) p_x d) d_{xz}
- The orbital with maximum number of possible orientations is:
a) s b) p c) d d) f
- Einstein's photoelectric equation states that $E_k = h\nu - W$
Here, E_k refers to
a) Kinetic energy of all ejected electrons b) Mean kinetic energy of emitted electrons

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- c) Minimum kinetic energy of emitted electrons d) Maximum kinetic energy of emitted electrons
8. The orbital closest to the nucleus is:
- a) $7s$ b) $3d$ c) $6p$ d) $4s$
9. Isoelectronic pair among the following is
- a) Ca and K b) Ar and Ca^{2+} c) K and Ca^{2+} d) Ar and K
10. We can say that the energy of a photon of frequency ν is given by $E = h\nu$, where h is Planck's constant. The momentum of a photon is $p = h/\lambda$, where λ is the wavelength of photon. Then we may conclude that velocity of light is equal to:
- a) $(E/p)^{1/2}$ b) E/p c) Ep d) $(E/p)^2$
11. Uncertainty in position of a particle of 25 g in space is 10^{-5} m. Hence, uncertainty in velocity (ms^{-1}) is (Planck's constant $h = 6.6 \times 10^{-34}$ Js)
- a) 2.1×10^{-28} b) 2.1×10^{-34} c) 0.5×10^{-34} d) 5.0×10^{-24}
12. The mass of a neutron is of the order of:
- a) 10^{-23} kg b) 10^{-24} kg c) 10^{-26} kg d) 10^{-27} kg
13. The de Broglie wavelength of a 66 kg man skiing down Kufri Hill in Shimla at $1 \times 10^3 \text{ m sec}^{-1}$ is:
- a) 1×10^{-36} m b) 1×10^{-37} m c) 1×10^{-38} m d) 1×10^{-39} m
14. The Z – component of angular momentum of an electron in an atomic orbital is governed by the
- a) Magnetic quantum number b) Azimuthal quantum number
c) Spin quantum number d) Principal quantum number

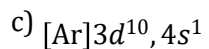
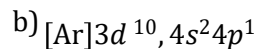
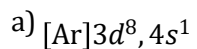
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15. An electron with values 4, 2, -2 and $+1/2$ for the set of four quantum numbers n , l , m_l and s respectively, belongs to
- a) $4s$ -orbital b) $4p$ -orbital c) $4d$ -orbital d) $4f$ -orbital
16. Consider the following statements :
1. Electron density in xy plane in $3d_{x^2-y^2}$ orbital is zero
 2. Electron density in xy plane in $3d_{z^2}$ orbital is zero
 3. $2s$ orbital has only one spherical node
 4. For $2p_z$ orbital yz is the nodal plane
- The correct statements are
- a) 2 and 3 b) 1,2,3,4 c) Only 2 d) 1 and 3
17. The maximum probability of finding electron in the d_{xy} orbital is:
- a) Along the x -axis
- b) Along the y -axis
- c) At an angle of 45° from the x - and y -axes
- d) At an angle of 90° from the x - and y -axes
18. Two electron in an atom of an element cannot have:
- a) The same principle quantum number
- b) The same azimuthal quantum number
- c) The same magnetic quantum number
- d) An identical set of quantum numbers
19. The energy of electromagnetic radiation depends on:
- a) Amplitude and wavelength
- b) Wavelength
- c) Amplitude

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d) Temperature of medium through which it passes

20. Correct electronic configuration of Cu^{2+} is:



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