

## **Chapter 2 Structure Of Atom**

### **Assignment 2**

### **Class 11**

Prerna Edu

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## DPP

DAILY PRACTICE PROBLEMS

CLASS : XI<sup>th</sup>

DATE :

SUBJECT : CHEMISTRY

DPP No. : 2

### Topic :- STRUCTURE OF ATOM

- In the ground state of the H-atom, the electron is :
  - In the second shell
  - In the nucleus
  - Nearest to the nucleus
  - Farthest from the nucleus
- Atoms consist of electrons, protons and neutrons. If the mass attributed to neutron was halved and that attributed to the electrons was doubled, the atomic mass of  ${}_6\text{C}^{12}$  would be approximately:
  - Same
  - Doubled
  - Halved
  - Reduced by 25%
- The number of electrons in a neutral atom of an element is equal to its:
  - Atomic weight
  - Atomic number
  - Equivalent weight
  - Electron affinity
- Which particle contains 2 neutrons and 1 proton?
  - ${}_1\text{H}^2$
  - ${}_2\text{He}^4$
  - ${}_1\text{T}^3$
  - ${}_1\text{D}^2$
- The highest number of unpaired electrons are in
  - Fe
  - $\text{Fe}^{2+}$
  - $\text{Fe}^{3+}$
  - All have equal number of unpaired electrons

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6. Maximum number of electrons in an orbit is given by:
- a)  $n^2$                       b)  $2n^2$                       c)  $n^2/2$                       d) None of these
7. The wave nature of electron is verified by
- a) De-Broglie    b) Davisson and Germer  
c) Rutherford    d) All of these
8. Compared to the mass of lightest nuclei, the mass of an electron is only (app.)
- a) 1/80                      b) 1/800                      c) 1/1800                      d) 1/2800
9. Which one of the following pair of atoms/atom-ion have identical ground state configuration?
- a)  $\text{Li}^+$  and  $\text{He}^+$                       b)  $\text{Cl}^-$  and Ar                      c)  $\text{Na}^+$  and  $\text{K}^+$                       d)  $\text{F}^+$  and Ne
10. The total number of orbitals in a shell with principal quantum number 'n' is:
- a)  $2n$                       b)  $2n^2$                       c)  $n^2$                       d)  $n + 1$
11. Which of the following statements does not form a part of Bohr's model of hydrogen atom?
- a) Energy of the electrons in the orbit is quantised  
b) The electron in the orbit nearest the nucleus has the lowest energy  
c) Electrons revolve in different orbits around the nucleus  
d) The position and velocity of the electrons in the orbit cannot be determined simultaneously
12. Penetration power of proton is:
- a) Greater than  $e$                       b) Less than electron                      c) Greater than 'n'                      d) None of these
13. Bohr's theory is applicable to

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- a) He                      b)  $\text{Li}^{2+}$                       c)  $\text{He}^{2+}$                       d) None of these

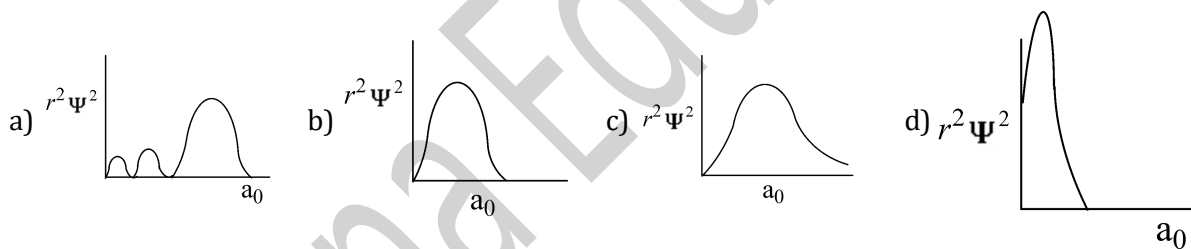
14. Which set of quantum numbers is possible for the last electron of  $\text{Mg}^+$  ion?

- a)  $n = 3, l = 2, m = 0, s = +1/2$   
b)  $n = 2, l = 3, m = 0, s = +1/2$   
c)  $n = 1, l = 0, m = 0, s = +1/2$   
d)  $n = 3, l = 0, m = 0, s = +1/2$

15. The electronic configuration for  ${}_{26}\text{Fe}$  is:

- a)  $[\text{Ar}]3d^6, 4s^2$                       b)  $[\text{Ar}]3d^7, 4s^2$                       c)  $[\text{Ar}]3d^5, 4s^2$                       d)  $[\text{Ar}]3d^7, 4s^1$

16. Which of the following radial distribution graphs correspond to  $n = 3, l = 2$  for an atom?



17. In which orbital electron is most tightly bound to the nucleus?

- a)  $5s$                       b)  $4p$                       c)  $4d$                       d)  $5d$

18.  $\text{Ca}^{2+}$  is isoelectronic with

- a) Na                      b) Ar                      c)  $\text{Mg}^{2+}$                       d) Kr

19. Threshold wavelength depends upon :

- a) Frequency of incident radiation  
b) Velocity of electrons

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- c) Work function
- d) None of the above

20. The electrons identified by quantum numbers

- I.  $n = 4, l = 1$
- II.  $n = 4, l = 0$
- III.  $n = 3, l = 2$
- IV.  $n = 2, l = 1$

Can be placed in order of increasing energy from the lowest to highest as

- a)  $IV < II < III < I$
- b)  $II < IV < I < III$
- c)  $I < III < II < IV$
- d)  $III < I < IV < II$