

DPP

DAILY PRACTICE PROBLEMS

CLASS : XIth
DATE :

SUBJECT : CHEMISTRY
DPP No. : 4

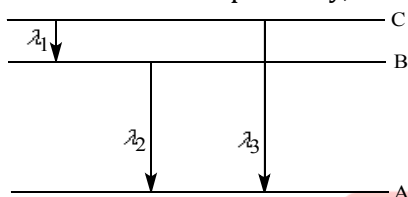
Topic :- STRUCTURE OF ATOM

- The difference between ions and atoms is of:
a) Relative size b) Configuration c) Presence of charge d) All of these
- Electronic configuration of H^- is:
a) $1s^0$ b) $1s^1$ c) $1s^2$ d) $1s^1, 2s^2$
- The ground state term symbol for an electronic state is governed by
a) Heisenberg's principle b) Hund's rule
c) Aufbau principle d) Pauli exclusion principle
- The electronic transitions from $n=2$ to $n=1$ will produce shortest wavelength in (where n = principle quantum state)
a) Li^{2+} b) He^+ c) H d) H^+
- The atomic number of an element is 17. The number of orbitals containing electron pairs in the valency shell is:
a) 8 b) 2 c) 3 d) 6
- The number of electrons in an atom with atomic number 105 having $(n + l) = 8$ are:
a) 30 b) 17 c) 15 d) Unpredictable
- Three isotopes of an element have mass numbers, $m, (m + 1)$ and $(m + 2)$. If the mean mass number is $(m + 0.5)$ then which of the following ratios may be accepted for $m, (m + 1), (m + 2)$ in that order:
a) 1 : 1 : 1 b) 4 : 1 : 1 c) 3 : 2 : 1 d) 2 : 1 : 1
- According to Bohr's theory the radius of electron in an orbit described by principle quantum number n and atomic number Z is proportional to :
a) $Z^2 n^2$ b) $\frac{Z^2}{n^2}$ c) $\frac{Z^2}{n}$ d) $\frac{n^2}{Z}$

9. The radius of the first Bohr orbit of hydrogen atom is 0.529 \AA . The radius of the third orbit of H^+ will be
 a) 8.46 \AA b) 0.705 \AA c) 1.59 \AA d) 4.76 \AA

10. The de Broglie wavelength associated with a material particle is:
 a) Inversely proportional to momentum
 b) Inversely proportional to its energy
 c) Directly proportional to momentum
 d) Directly proportional to its energy

11. Energy levels A, B, C of a certain atom corresponds to increasing values of energy, *i.e.*, $E_A < E_B < E_C$. If λ_1, λ_2 and λ_3 are the wavelengths of radiations corresponding to the transitions C to B, B to A and C to A respectively, which of the following statements is correct?



- a) $\lambda_3 = \lambda_1 + \lambda_2$ b) $\lambda_3 = \frac{\lambda_1 \lambda_2}{\lambda_1 + \lambda_2}$ c) $\lambda_1 + \lambda_2 + \lambda_3 = 0$ d) $\lambda_3^2 = \lambda_1^2 + \lambda_2^2$
12. Naturally occurring elements are mixtures of:
 a) Isotone b) Isobars c) Isotopes d) Isomers
13. Krypton (${}_{36}\text{Kr}$) has the electronic configuration $({}_{18}\text{Ar})4s^23d^{10}4p^6$, the 37th electron will go into which of the following subshells?
 a) $4f$ b) $4d$ c) $3p$ d) $5s$
14. 1 fermi is equal to :
 a) 10^{-13} cm b) 10^{-10} cm c) 10^{-4} cm d) 10^{-8} cm
15. When an electron moves from higher orbit to a lower orbit ... is produced
 a) Absorption spectra b) Emission spectra c) α -particle d) None of these
16. A photon in X region is more energetic than in the visible region X is:
 a) Infrared b) Ultraviolet c) Microwave d) Radiowave
17. According to aufbau principle, the correct order of energy of $3d, 4s$ and $4p$ -orbitals is
 a) $4p < 3d < 4s$ b) $4s < 4p < 3d$ c) $4s < 3d < 4p$ d) $3d < 4s < 4p$
18. The total number of valency electrons for NH_4^+ is :
 a) 9 b) 8 c) 6 d) 11

19. According to Bohr's model of hydrogen atom
- a) Total energy of the electron is quantized
 - b) Angular momentum of electron is quantised
 - c) Both (a) and (b)
 - d) None of the above
20. The H-spectrum show
- a) Heisenberg's uncertainty principle
 - b) Diffraction
 - c) Polarisation
 - d) Presence of quantised energy level

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