

CLASS : XIth DATE : SUBJECT : CHEMISTRY DPP No. : 6

## Topic :- STRUCTURE OF ATOM

- 1. The energy of a photon is  $3 \times 10^{-12}$  ergs. What is its wavelength in nm?

    $(h = 6.62 \times 10^{-27}$  ergs,  $c = 3 \times 10^{10}$  cm/s)

   a) 662
   b) 1324
   c) 66.2
   d) 6.62
- 2. In a multi-electron atom, which of the following orbitals described by the three quantum numbers will have the same energy in the absence of magnetic and electric fields?



- 3. Zeeman effect refers to the
  - a) Splitting up of the lines in an emission spectrum in the presence of an external electrostatic field
  - b) Random scattering of light by colloidal particles
  - c) Splitting up of the lines in an emission spectrum in a magnetic field
  - d) Emission of electrons from metals when light falls upon them
- 4. Bohr's radius of 2nd orbit of Be<sup>3+</sup> is equal to that of
  a) 4th orbit of hydrogen
  b) 2nd orbit of He<sup>+</sup>
  c) 3rd orbit of Li<sup>2+</sup>
  d) First orbit of hydrogen
- 5. The velocity of an electron must possess to acquire a momentum equal to the photon of wavelength 5200 Å<sup>°</sup>, will be
  a) 1398 ms<sup>-1</sup>
  b) 1298 ms<sup>-1</sup>
  c) 1400 ms<sup>-1</sup>
  d) 1300 ms<sup>-1</sup>
- 6. In potassium the order of energy level for 19th electron is: a) 3s > 3d b) 4s < 3d c) 4s > 4p d) 4s = 3d

7.	[Ar]3 $d^{10}$ , 4 $s^1$ electronic a) Ti	c configuration belongs t b) Tl	c) Cu	d) V
8.	The charge on an electra a) $4.8 \times 10^{-10}$ esu	con is 4.8 × 10 <sup>-10</sup> esu. W b) 9.6 × 10 <sup>-10</sup> esu	hat is the value of charg c) $1.44  imes 10^{-9}$ esu	e in Li <sup>+</sup> ion? d) $2.4 \times 10^{-10}$ esu
9.	What is the ration of m a) 1:2	ass of an electron to the b) 1:1	mass of a proton? c) 1:1837	d)1:3
10.	As the number of orbit increase from the nucleus, the difference between the adjacent energy levels:			
	a) Increases	b) Remains constant	c) Decreases	d)None of these
11.	The potential energy of an electron present in the ground state of Li <sup>2+</sup> ion is			
	a) $+\frac{3e^2}{2}$	b) $-\frac{3e}{3e}$	c) $-\frac{3e^2}{2}$	d) $-\frac{3e^2}{2}$
	$4\pi\varepsilon_0 r$	$4\pi\varepsilon_0 r$	$4\pi\varepsilon_0 r$	$4\pi\varepsilon_0 r^2$
12.	The orbital angular momentum of a <i>p</i> -electron is given as:			
	h b	$h = \frac{1}{2}h$	3h	h
	a) $\frac{1}{\sqrt{2\pi}}$	$bJ\sqrt{3}\frac{1}{2\pi}$	$\sqrt{2\pi}$	$dJ\sqrt{6}\cdot\frac{1}{2\pi}$
12	Transition from $n - 2$	345 to $n = 1$ is called		
15.	a) Lyman series	b) Paschen series	c) Balmer series	d)Bracket series
14.	If the total energy of an electron in a hydrogen like atom in an excited state is $-3.4$ eV, then the			
	a) $6.6 \times 10^{-10}$	b) $3 \times 10^{-10}$	c) $5 \times 10^{-9}$	d) $9.3 \times 10^{-12}$
15.	Which <i>d</i> -orbital does n	ot have four lobes?	a) d a	a) d
	a) $u_{x^2-y^2}$	$DJu_{xy}$	$C \int u_Z^2$	$u_{J}u_{\chi_{Z}}$
16. The nucleus of an atom contains				
	a) Proton and electron		b) Neutron and electron	
	c) Proton and neutron all electron			
17.	Total number of electrons present in acetylene molecule is:			
	a) 14	b)26	c) 18	d)16
18.	An ion which has 18 electrons in the outermost shell is:			
	a) Cu <sup>+</sup>	b)Th <sup>4+</sup>	c) Cs <sup>+</sup>	d) K <sup>+</sup>

19. The maximum number of electrons in a *p*-orbital with n = 6 and m = 0 can be:







