HoardQ

Subject: Chemistry

Topics: •Atomic structure

Difficulty: Easy

Multiple Choice Questions

Q1) The radius of the second Bohr orbit for the hydrogen atom is :

Options:

1) 1.65 A

2) 4.76 A

3) 0.529 A

4) 2.12 A

Q2) In a hydrogen atom, if the energy of an electron in the ground state is 13.6 eV, then that in the 2nd excited state is

Options:

1) 1.51 eV

2) 3.4 eV

3) 6.04 eV

4) 13.6 eV

True/False

Q1) Dalton stated that “atoms are indivisible”.

Q2) A nonpolar bond is formed when two atoms share electrons unequally.

Match the following

Q1) Match the atomic number with their blocks

Column A	Column B
62	s
47	f
56	p
53	d

Q2) Match the following

Column A	Column B
O	7
N	17
CL	8
Mg	12

Solutions

Multiple Choice Questions

1) Option 4

Solution:

Radius of nth Bohr orbit in H atom = 0.53 n2/Z

For hydrogen Z = 1

Radius of 2nd Bohr orbit in H atom = 0.53 ×22/1 = 2.12

2) Option 1

Solution:

The 3rd energy level is the 2nd excited state.

n=3

En = 13.6/n2 = 13.6/9 = 1.5 eV

True/False

1) True

Solution:

The above statement is true according to Dalton's atomic theory. But further discoveries on atom proved this theory wrong as atoms can be further subdivided into subatomic particles i.e atoms can be divided into electrons, protons and neutrons.

2) False

Solution:

There are two types of covalent bonding:
1. Non-polar bonding with an equal sharing of electrons.
2. Polar bonding with an unequal sharing of electrons. The number of shared electrons depends on the number of electrons needed to complete the octet.

Polarity occurs because one of the atoms in a covalent bond has a greater electronegativity than the other, which makes it attract the shared electrons more strongly. The uneven sharing of the electrons creates a dipole shift, which means that the side with the more electronegative atom has a slightly negative charge and the end with the less electronegative atom has a slightly positive charge.

Match the following

1)

Column A	Column B
62	d
47	p
56	f
53	s

2)

Column A	Column B
O	7
N	8
CL	12
Mg	17