CT 2-18CYB101J- CHEMISTRY

* Required

Part – A (16 X 1 = 16 marks)

Answer all the questions (MCQ)

The different types of energies associated with a molecule are_____ 1 point *

- (●) Electronic, Vibrational and Rotational energies
- ( ) Dissociation energy
- ( ) Potential energy
- ( ) Kinetic energy

The region of electromagnetic spectrum for nuclear magnetic resonance is_____ 1 point *

- ( ) Microwave
- (●) Radio frequency
- ( ) Infrared
- ( ) UV-rays

Which of the following molecules will not display an infrared spectrum? * 1 point

- CO2
- N2
- H2O
- SO2

The selection rule for vibrational transition in simple harmonic oscillation is_____ * 1 point

- ΔJ = ±1
- ΔV = ±1
- ΔJ = +1
- ΔV = +1

The wavenumbers are expressed in_____ * 1 point

- sec-1
- cm-1
- cm.sec-1
- cm2.Sec-1

In a rotational spectrum transitions are only observed between rotational levels of ΔJ = ? * 1 point

- (●) ± 1
- ( ) ±2
- ( ) ± ½
- ( ) ± 3

The spin only formula (μs) for octahedral complexes is_____ * 1 point

- (●) (4S(S+1))1/2
- ( ) (4S(S+1))1/2 + (L (L+1))1/2
- ( ) (L (L+1))1/2
- ( ) L(L+1)

The allowed electronic transition of hydrogen atom_____ * 1 point

- ( ) 3d- to 1s
- (●) 2p -to 1s
- ( ) 2pz-to 2py
- ( ) 2py- to 2px

Which of the following is also known as X-ray photoelectron spectroscopy? * 1 point

- ○ Auger electron spectroscopy
- ○ Electron impact spectroscopy
- ◉ Electron spectroscopy for chemical analysis
- ○ Secondary ion mass spectroscopy

In XPS, the primary and secondary beams consist of_____ * 1 point

- ◉ X-ray photon, electron
- ○ electrons, X-ray photon
- ○ electrons, electrons
- ○ UV-photons, electrons

The energy required to remove an electron from the highest occupied atomic orbital is known as _____ * 1 point

- ◉ Ionization energy
- ○ Kinetic energy
- ○ Binding energy
- ○ Vibrational energy

Choose the correct statement * 1 point

- (●) As shielding effect increases electro negativity decreases
- ( ) As shielding effect increases electro negativity increases
- ( ) As ionization potential increases metallic property increases
- ( ) As +ve charge on species increases ionic radii increases

In a period with increase in atomic number, the metallic character of an element * 1 point

- (●) Decrease across period increases in group
- ( ) increase across period& decreases in group
- ( ) increase across period& increases in group
- ( ) Decrease across period& decreases in group

Which of the following species has the highest ionization potential? * 1 point

- (●) Li+
- ( ) Mg+
- ( ) Al+
- ( ) Ne

The source for XPS is _____ *

1 point

- ○ Mercury - arc
- ○ Nernst glower
- ○ Globar source
- ◉ AlKα

The correction factor for modified Van der Waals equation of state is _____ *

1 point

- ○ a/b
- ◉ a/V2
- ○ a/V
- ○ V-nb

Back Next

Never submit passwords through Google Forms.

This form was created inside of SRM Institute of Science and Technology. Report Abuse

Google Forms