CLA 1-Chemistry -18CYB101J

Part -A- 13 MCQs [13*1=13 Marks]

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CO has 10 bonding electrons and 4 anti-bonding electrons and its bond order is

- (●) 3
- ( ) 7
- ( ) 1
- ( ) 5/2

Clear selection

The filling up of Molecular orbital takes place according to

- ( ) Huckel's rule
- (●) Hund's rule
- ( ) Fajan's rule
- ( ) Cahn Ingold Prelog rule

Clear selection

The antiaromatic molecule doesnot follow the

- (●) Huckel's rule
- ( ) Hund's rule
- ( ) Planarity
- ( ) Conjucation

Clear selection

What is 1D box Potential energy inside the box

- ( ) 1
- (●) 0
- ( ) Infinity
- ( ) undetermined

Clear selection

In the molecular orbital diagram of NO molecule, how many unpaired electrons would be present?

- ( ) 3
- ( ) 2
- ( ) 0
- (●) 1

Clear selection

What is the CFSE value for d7 octahedral high spin and low spin complexes?

- ○ 1.8 and 0.8
- ○ 0 and 2
- ◉ 0.8 and 1.8
- ○ 0 and 1

Clear selection

What is the de broglie wavelength of a 75g of a ball moving with a speed of 42m/s?

- ○ 21 x -34 m
- ◉ 2.1 x -34 m
- ○ 21 x 34 m
- ○ 2.1 x 34 m

Clear selection

The crystal field splitting energy for octahedral and tetrahedral complexes is related as

- ◉ $\Delta t \approx 4/9\ \Delta o$
- ○ $\Delta t \approx 1/2\ \Delta o$
- ○ $\Delta o \approx 2\ \Delta t$
- ○ $\Delta o \approx 4/9\ \Delta t$

Clear selection

Identify the molecule possessing paramagnetic property from the list shown below.

- ○ Li2
- ○ CO
- ○ N2
- ◉ O2

Clear selection

How many unpaired electrons are present in [CoF6]3- complex?

- ◉ 4
- ○ zero
- ○ 2
- ○ 3

Clear selection

What is the angular eigen function for hydrogen atom

- ○ $1/\sqrt{2\pi}$
- ○ $1/\sqrt{3\pi}$
- ◉ $1/\sqrt{4\pi}$
- ○ $1/\sqrt{\pi}$

Clear selection

The calculated spin only magnetic moment of Cr 2+ ion is

- ○ 2.84
- ○ 5.92
- ○ 3.87
- ◉ 4.9

Clear selection

Strong field ligands such as CN-:

- ○ usually produce high spin complexes and small crystal field splittings.
- ○ usually produce low spin complexes and small crystal field splittings.
- ◉ usually produce low spin complexes and high crystal field splittings.
- ○ usually produce high spin complexes and high crystal field splittings.

Clear selection

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