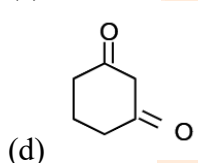
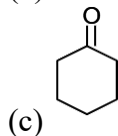
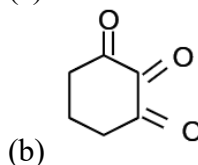
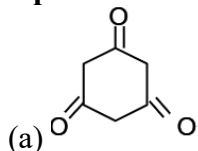


JEE-Main-27-01-2024 (Memory Based)
[MORNING SHIFT]

Chemistry

Question: Which of the following has the highest enol content?

Options:



Answer: (a)

Solution: Option A as enol form will become aromatic in this case

Question: Which of the following can not show variable oxidation state?

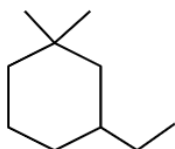
Options:

- (a) Chlorine
- (b) Fluorine
- (c) Bromine
- (d) Iodine

Answer: (c)

Solution: Variable O.S is not possible in F.

Question: IUPAC name of this compound is?

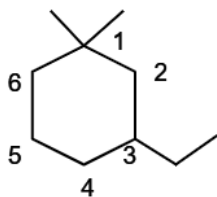


Options:

- (a) 1-ethyl-3, 3-dimethyl cyclohexane
- (b) 3-ethyl-1, 1-dimethyl cyclohexane
- (c) 1-ethyl-3, 3-dimethyl cyclohexene
- (d) 3-ethyl-1,1-dimethyl cyclohexene

Answer: (b)

Solution:



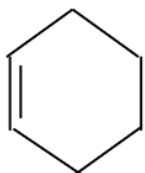
Question: Electronic configuration of neodymium is?

Options:

- (a) $[\text{Xe}]6s^25d^24f^3$
- (b) $[\text{Xe}]6s^25d^04f^4$
- (c) $[\text{Xe}]6s^15d^14f^4$
- (d) $[\text{Xe}]6s^15d^04f^5$

Answer: (b)

Question: The compound given below is:



Options:

- (a) Alicyclic
- (b) Aromatic
- (c) Antiaromatic
- (d) Acyclic

Answer: (a)

Solution: Alicyclic compounds are organic compounds that are both aliphatic and cyclic. These are the saturated or unsaturated hydrocarbons containing non-aromatic rings of carbon atoms.

Question: Which of the following is polar molecule

Options:

- (a) $\text{CH}_2 = \text{CH}_2$
- (b) CHCl_3
- (c) CCl_4
- (d) CH_4

Answer: (b)

Solution: In CHCl_3 dipole moment is not equal to zero

Question: Bond order sum of NO^+ and CO is ?

Solution: NO^+ & CO bond order sum = $3 + 3 = 6$.

Question: Nucleotides are joined by?

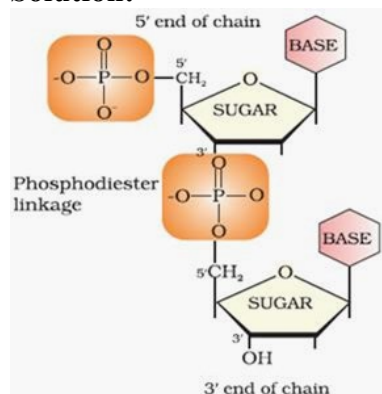
Options:

- (a) Glycosidic Link
- (b) Peptide Link
- (c) Phosphodiester Link

(d) O-O Link

Answer: (c)

Solution:



Question: Which of the following has yellow color ?

Options:

- (a) $K_2Cr_2O_7$
- (b) K_2CrO_4
- (c) $KMnO_4$
- (d) none of these

Answer: (b)

Solution: K_2CrO_4 is yellow in colour whereas $K_2Cr_2O_7$ is orange coloured, $KMnO_4$ colour is purple

Question: How many compounds have S in +4 O.S.

SO_3 , $BaSO_4$, $H_2S_2O_7$, $SOCl_2$, SF_4 , $H_2S_2O_3$

Solution: 3 compounds have S in +4 O.S.

SO_3 - +6

$BaSO_4$ - +6

$H_2S_2O_7$ - +6

$SOCl_2$ - +4

SF_4 - +4

$H_2S_2O_3$ - +4

Question: I - Ethanol given Lucas test

S II - Para nitrophenol is more acidic than meta and ortho nitro phenol.

Options:

- (a) Statement I is incorrect but statement II is correct
- (b) Both statement I and II are correct
- (c) Both statement I and II are incorrect
- (d) Statement I is correct but statement II is incorrect

Answer: (b)

Solution: Both statement I and II are correct

Question: $n = 4$ and $s = +1/2$

How many electrons in all the subshell with this configuration.

Solution: $n = 4$ there are 16 orbital and 16 electrons with $+1/2$.

Question: Which of the following reaction is correct with enzyme.

Options:

- (a) Sucrose \rightarrow Glucose + fructose, Invertase
 (b) Glucose \rightarrow CO₂ + Ethanol, Maltase
 (c) Protein \rightarrow Amino Acid, zymase
 (d) Starch \rightarrow Maltose, Pepsin

Answer: (a)

Solution: Invertase enzyme catalyzes the hydrolysis of the disaccharide sucrose into glucose and fructose

Question: Order of Magnetic moment of the following compound is $[\text{FeF}_6]^{3-}$, Q = $[\text{V}(\text{H}_2\text{O})_6]^{2+}$, R = $[\text{Fe}(\text{H}_2\text{O})_6]^{2+}$

Options:

- (a) $R > P > Q$
 (b) $Q > P > R$
 (c) $P > Q > R$
 (d) $P > R > Q$

Answer: (d)

Solution: More the number of unpaired electron, more will be the magnetic moment

$[\text{FeF}_6]^{3-}$ - 5 unpaired electron - P

$[\text{V}(\text{H}_2\text{O})_6]^{2+}$ - 3 unpaired electron - Q

$[\text{Fe}(\text{H}_2\text{O})_6]^{2+}$ - 4 unpaired electron - R

Question: Which of the following has highest magnetic moment

Options:

- (a) d^7
 (b) d^8
 (c) d^3
 (d) d^6

Answer: (d)**Solution:**

Magnetic moment increases with the increase in number of unpaired electrons.

d^3 has 3 unpaired electrons.

d^6 has 4 unpaired electrons

d^7 has 3 unpaired electrons

d^8 has 2 unpaired electrons.

Question: $\text{CrO}_2\text{Cl}_2 + 4 \text{NaOH} \rightarrow \text{A} + \text{B} + \text{C}$

A, B, C is ?

Options:

- (a) A = Na_2CrO_4 , B = NaCl, C = H_2O
 (b) A = Na_2CrO_4 , B = NaOH, C = H_2O
 (c) A = $\text{K}_2\text{Cr}_2\text{O}_7$, B = NaCl, C = H_2O
 (d) None of the above

Answer: (a)

Solution: $\text{CrO}_2\text{Cl}_2 + 4 \text{NaOH} \rightarrow \text{Na}_2\text{CrO}_4 + 2 \text{NaCl} + \text{H}_2\text{O}$

Question: Statement-1: Boron have high melting point in the group (2453k)

Statement-2: Boron have extremely high crystalline lattice.

Options:

- (a) Statement I is incorrect but statement II is correct

- (b) Both statement I and II are correct
- (c) Both statement I and II are incorrect
- (d) Statement I is correct but statement II is incorrect

Answer: (b)

Solution: Boron has very high melting point because of its small atomic size and very strong crystalline lattice.

It forms strong covalent bonds with the neighbouring atoms. Thus boron atoms are closely packed in its solid state, so a large amount of heat is needed to break the bonds between atoms.

