Chemistry

Question: Which will not form when PbS react with dil HNO₃
Options:
(a) NO
(b) NO₂
(c) S
(d) None
Answer: (b)

Question: For the reaction :

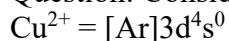Product (P) is :
Options:

(a)

(b)

(c)

(d)

Answer: (a)

Question: Which of the following has sp^2 hybridisation ?
Options:
(a) BF_3
(b) H_2SO_4
(c) NH_4^+
(d) NH_3
Answer: (a)

Question: Consider the following electronic configuration :

$Cu^{2+} = [Ar]3d^4s^0$

$Cu^+ = [Ar]3d^{10}4s^0$

Which option is correct ?

Options:

(a) Cu^{2+} is more stable in aqueous solution

(b) Cu^+ is more stable in aqueous solution

(c) Cu^{2+} and Cu^{2+} are equally stable in aqueous solution

(d) Depends upon copper salt

Answer: (a)

Question: Chemical formula of compound present in tooth enamel ?

Options:

(a) $Ca_{10}(PO_4)_6(OH)_2$

(b) $Ca_8(PO_4)(OH)_2$

(c) $Ca_6(PO_4)_2(OH)_2$

(d) $Ca_8(PO_4)_6(OH)_2$

Answer: (a)

Question: Equal volume of 1 M HCl and 1 M H_2SO_4 neutralized by dil. NaOH and heat released is x and y kcal respectively, then which is correct ?

Options:

(a) x= y

(b) x = 0.5 y

(c) x = 0.4 y

(d) x = 2y

Answer: (b)

Question: Number of ambidentate nucleophiles among the following is CN^-, SCN^- ,NO^-_2 , CH_3COO^-, NH^-_2 , SO^{2-}_4 :

Options:

Answer: (3)
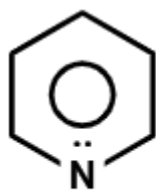
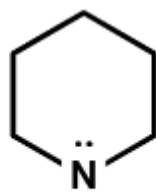Question:Which of the following orbitals has the highest energy ?

Options:

(a) n = 6, l = 0

(b) n = 5, l = 2

(c) n = 4, l = 2

(d) n = 3, l = 1

Answer: (b)

Question: Arrange the following compounds on the Basis of basic strengths

(a) (b) (c)

Options:
(a) a > b > c
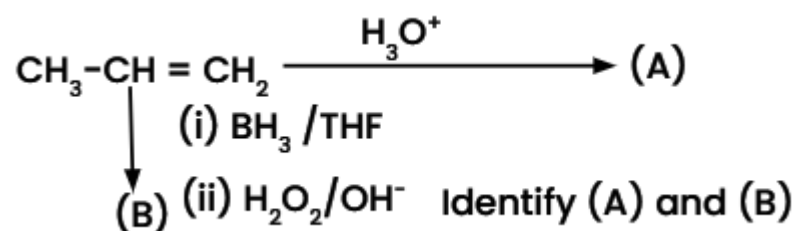(b) b > a > c
(c) c > a > b
(d) b > c > a
Answer: (a)

Question: Find number of Geometrical Isomer in $[M(AH)_2a_2]$
Options:
(a) 4
(b) 3
(c) 2
(d) 1
Answer: (c)

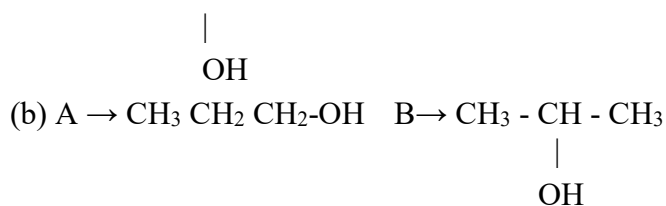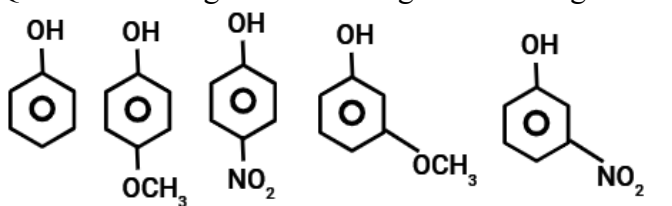Question:

$$CH_3-CH = CH_2 \xrightarrow{H_3O^+} (A)$$

(i) BH_3/THF

(B) (ii) H_2O_2/OH⁻ Identify (A) and (B)

Options:
(a) A → CH₃ - CH - CH₃   B → CH₃ - CH₂ - CH₂ - OH

|
          OH
(b) A → CH$_3$ CH$_2$ CH$_2$-OH   B→ CH$_3$ - CH - CH$_3$
                                      |
                                     OH

(c) A → CH$_3$ CH$_2$ CH$_3$ B→ CH$_3$CH$_2$CH$_2$-OH
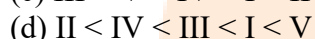(d) A → CH$_3$ CH$_2$ CH$_2$ OH   B→ CH$_3$CH$_2$CH$_3$
Answer: (a)

Question: Arrange the following in increasing order of acidity.

Options:
(a) I < II < III < IV < V
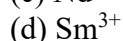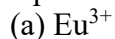(b) II < I < IV < V < III
(c) III < V < IV < I < II
(d) II < IV < III < I < V
Answer: (b)
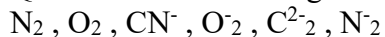
Question: Which of the following is colorless ?
Options:
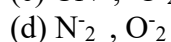(a) Eu^{3+}
(b) Lu^{3+}
(c) Nd^{3+}
(d) Sm^{3+}
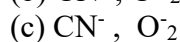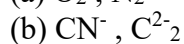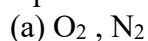Answer: (b)

Question: Which among the following have single unpaired electron ?
N$_2$, O$_2$, CN$^-$, O$^-_2$, C$^{2-}_2$, N$^-_2$

Options:
(a) O$_2$, N$_2$
(b) CN$^-$, C$^{2-}_2$
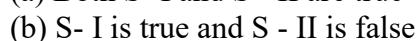(c) CN$^-$, O$^-_2$
(d) N$^-_2$, O$^-_2$
Answer: (d)

Question: Statement - I : Sulphur exists as S$_8$ while oxygen exists as O$_2$.
Statement - II : In oxygen , pπ - pπ bonding occurs while it is not effective in sulphur.
Options:
(a) Both S- I and S - II are true
(b) S- I is true and S - II is false

(c) S- I is false and S - II is true
(d) Both S- I and S - II are false
Answer: (a)

Question: Which of the following statement is incorrect ?
Options:
(a) $KMnO_4$ and NaOH can be used as secondary standard
(b) Primary standard should not undergo change in air
(c) Reaction of primary standard with another substance should not be instantaneous
(d) Primary standard should be soluble in H2O
Answer: (c)

Question: Purification method of organic compound does not depend on :
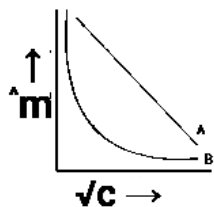Options:
(a) Nature of compound
(b) Shape of compound
(c) Density of compound
(d) Solubility of compound
Answer: (b)

Question: Molar conductance vs √concentration curve for two electrolytes 'A' and 'B' are shown. Identify the nature of both electrolytes :

Options:
(a) A → Strong electrolyte ; B → Strong electrolyte
(b) A → Weak electrolyte ; B → Strong electrolyte
(c) A → Strong electrolyte ; B → Weak electrolyte
(d) A → Weak electrolyte ; B → Weak electrolyte
Answer: (c)

Question: Total number of essential amino acids are :
Options:

(a) 12
(b) 11
(c) 10
(d) 9
Answer: (c)

Question: Rate of a reaction is given as rate = $k[A]^2[B]$. If concentration of both reactants is doubled then rate becomes x times the previous and the order of reaction is y, then what is the value of $(x + y)$
Options:
Answer: (11)

Question: Consider the given complex, $[Co(en)_2Cl_2]^+$.
Statement - I :- The number of stereoisomers for the above compound is 3.

Statement - II :- Geometry of the above complex is octahedral

Options:
(a) S- I is correct, S - II is incorrect
(b) S- I is correct, S - II is correct
(c) S- I is incorrect and S - II is correct
(d) S- I is incorrect, S - II is incorrect
Answer: (b)