If a rain-water sample has a pH = 5.8, this sample is _____.

- weakly acidic
- strongly acidic
- weakly basic
- neutral
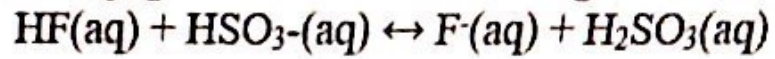
Total questions in exam: **40** | Answered: **0**

Question No. 2

Identify the conjugate base in the following reversible reaction.
$$HF(aq) + HSO_3^-(aq) \leftrightarrow F^-(aq) + H_2SO_3(aq)$$

- ○ $F^-(aq)$
- ○ $HF(aq)$
- ○ $H_2SO_3(aq)$
- ○ $HSO_3^-(aq)$

Save & Next حفظ و التالي
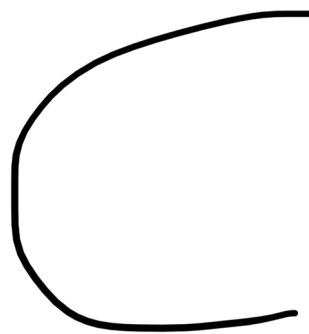
No. 19

What is the $[OH^-]$ if the $[H_3O^+]$ is 1.0×10^{-5} M?

- $[OH^-] = 6.0 \times 10^{-5}$
- $[OH^-] = 1.0 \times 10^{-9}$
- $[OH^-] = 7.0 \times 10^{-10}$
- $[OH^-] = 1.0 \times 10^{-14}$

B

The compound below is an

$$CH_3-\overset{\overset{\displaystyle CH_3}{|}}{\underset{\underset{\displaystyle H}{|}}{C}}-NH_2$$
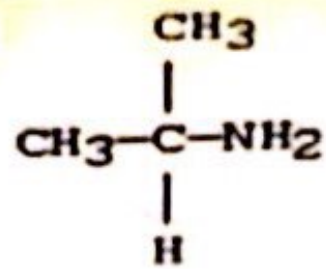
- ○ acid
- ○ ester
- ○ amine
- ○ amide

Question No. 1

When a system is at chemical equilibrium _____.

- ○ the rate of the forward reaction is small compared to the reverse.
- ○ the rate of the forward reaction is equal to the rate of the reverse.
- ○ the rate of the reverse reaction is small compared to forward.
- ○ the amounts of product and reactant are exactly equal.

Identify an ionic bond

○ Electrons are shared

○ Protons are lost
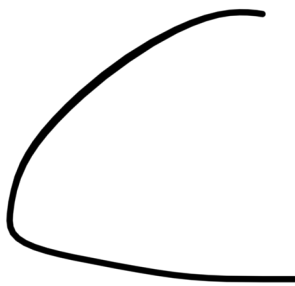
○ Electrons are transferred

○ Protons are gained
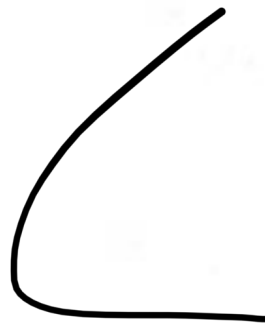
Question No. 4

Two mole of any substance contains _____ particles?

○ 12.044×10^{24}

○ 6.022×10^{23}

○ 1.20×10^{24}

○ 3.011×10^{24}
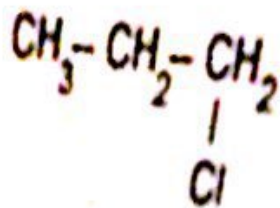
Question No. 3

Which of the following represents the correct Lewis dot structure for oxygen mol

:O::O:
(a)

:Ö:Ö:
(b)

:Ö:
(c)

:Ö::Ö:
(d)

(b)

(a)

c)

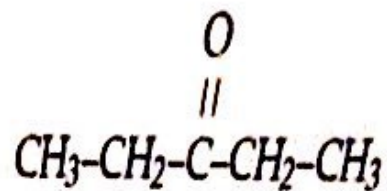What is the correct name of the following compound?

$$CH_3 - CH_2 - CH_2$$
$$|$$
$$Cl$$

- chloropropane
- 1-chloropropane
- 1-chloropropyl
- 1-chlorobutane

B

1-chloroprpane

To which family does the following organic compound belong?

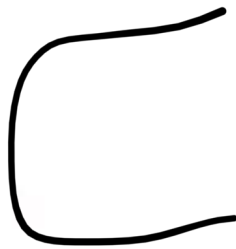$$CH_3-CH_2-\overset{\overset{\displaystyle O}{\|}}{C}-CH_2-CH_3$$

- O alcohol
- O aldehyde
- O ketone
- O ether

Question No. 11

If a drain cleaning solution has a pH = 13, this solution is _____.
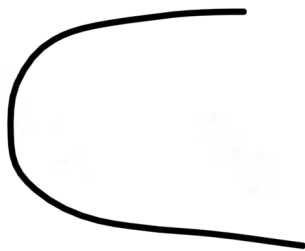
○ weakly acidic

○ strongly acidic

○ strongly basic

○ weakly basic

The molecular formula for the hydrocarbon "butane" is _____.

- ○ C_5H_{12}
- ● C_6H_{14}
- ○ C_4H_{10}
- ○ C_4H_8

Refer to the reaction shown below. Removing sulfur dioxide as it is formed will ___

$$2H_2S\ (g) + 3O_2\ (g) \rightleftharpoons 2SO_2\ (g) + 2H_2O\ (g)$$
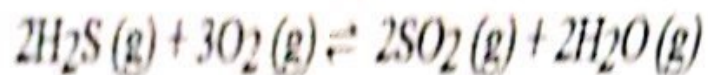
○ shift the reaction to the left

○ shift the reaction to the right

○ have no effect

○ cannot be determined, since the temperature is unknown

B

Identify the conjugate base of HPO_4^{2-} in the reaction

$$HCO_3^- + HPO_4^{2-} \leftrightarrow H_2CO_3 + PO_4^{3-}$$
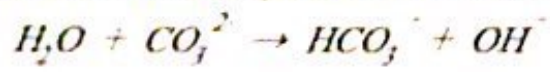
- HCO_3^-
- H_2O
- H_2CO_3
- PO_4^{3-}

Question No. 16

The name of the chemical compound CuOH is _____

○ copper hydroxide
○ copper(I) hydroxide
○ copper(III) hydroxide
● copper(II) hydroxide

B

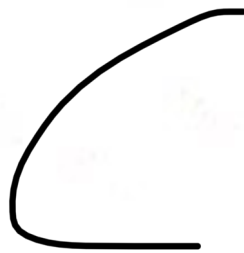Identify the Bronsted-Lowry acid in the following reaction.

$$H_2O + CO_3^{2-} \rightarrow HCO_3^- + OH^-$$

- CO_3^{2-}
- OH^-
- HCO_3^-
- H_2O

Question No. 17

What is the oxidation number of sulfur in SO_3^{2-}?

- ○ +2
- ● -2
- ○ +4
- ○ +6

Question No. 3

Which of the following pairs of compounds are cis-trans isomers?

$$CH_3-C=C-H \quad \text{and} \quad H-C=C-CH_3$$
(with H, H and H, CH₃ substituents)

$$CH_3-C=C-CH_3 \quad \text{and} \quad CH_3-C=C-CH_3$$
(with H, H and H, H substituents)

$$CH_3-C=C-CH_3 \quad \text{and} \quad H-C=C-CH_2CH_3$$
(with H, H and H, CH₃ substituents)

$$CH_3-C=C-H \quad \text{and} \quad H-C=C-CH_3$$
(with CH₃, H and H, CH₃ substituents)

MH3754586
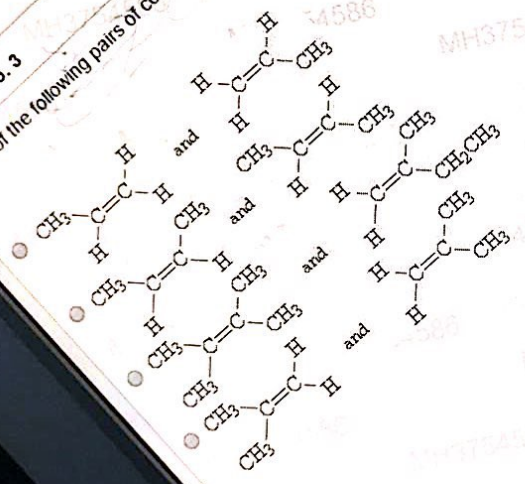
A solution is made by dissolving 2.68 mole of KF in enough water to give a final volume of 1030 mL. What is the molarity of the solution?

○ 1.52 M
○ 2.60 M
○ 0.800 M
○ 0.125 M

B

If the [OH⁻] in a blood sample $= 1 \times 10^{-7}$, the pH of this blood sample is _____ .

○ pH $= 1 \times 10^{-7}$
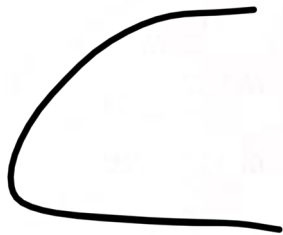
○ pH $= 1 \times 10^{-7}$

○ pH $= 7$

○ pH $= -7$

Question No. 40

Based on Lewis dot structures, the number of lone pairs of electrons in HCl molecule is ____ pairs.

○ 1

○ 2

○ 3

○ 0

What is the IUPAC name for: $CH_3-CH_2-CH_2-CH_3$?

○ pentane
○ butane
○ heptane
○ hexane

B

Question No. 21

"A system at equilibrium tends to maintain equilibrium", this statement is known as _____

- ○ Avogadro's principle
- ○ Haber's law
- ○ The law of chemical equilibrium
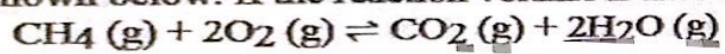- ○ Le Chatelier's principle

In a neutralization reaction, _____

- an acid reacts with a base to form a salt and water
- two acids react to form water
- water and a salt react to form an acid and a base
- an acid and a salt react to form water and a base

A

Refer to the equilibrium shown below. If the reaction volume is increased, this will ____
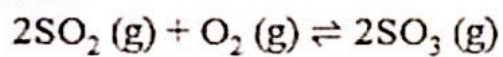
$$CH_4 (g) + 2O_2 (g) \rightleftharpoons CO_2 (g) + 2H_2O (g)$$

○ shift the reaction to the left
○ shift the reaction to the right
○ cannot be determined, since the temperature is unknown
○ have no effect

Question No. 12

In the following reaction, what is the effect on the direction of the reaction if more SO_3 is added to the reaction mixture?

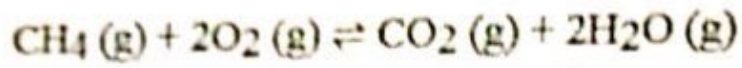$$2SO_2 \text{ (g)} + O_2 \text{ (g)} \rightleftharpoons 2SO_3 \text{ (g)}$$

- The equilibrium shifts to produce more products.
- The rate of formation of products is increased.
- The position of the equilibrium remains unchanged.
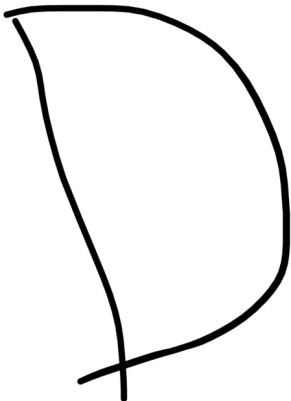- The equilibrium shifts to produce more reactants.

D

Refer to the equilibrium shown below. Which of the following will shift the reaction to the right?

$$CH_4\ (g) + 2O_2\ (g) \rightleftharpoons CO_2\ (g) + 2H_2O\ (g)$$

- adding excess oxygen
- increasing the pressure
- removing carbon dioxide as soon as it is formed
- adding O_2 and removing CO_2

صحيحه A,C
لاكن الاصح هو D فلا تستعجل في الاختيار

The reaction that requires thermal energy to proceed is known as _____ reaction.

- ○ oxidation
- ○ endothermic
- ○ isothermic
- ○ exothermic

B

Question No. 36

If the reaction is endothermic, which of the following is always true?

○ the reaction rate is fast
○ the reaction takes in heat
○ the reaction gives out heat
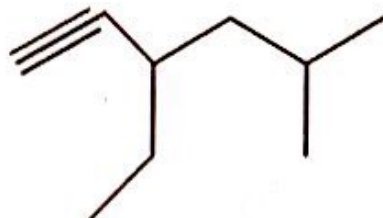○ the reaction rate is slow

B

Question No. 1

Organic compounds with the general formula R-O-R (where R is an alkyl group) are called _____

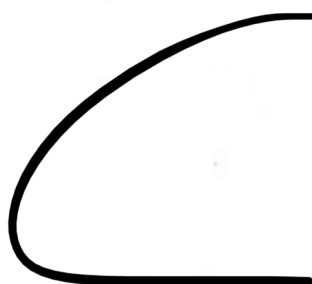- carboxylic acids
- aldehydes
- amines
- ethers

Question No. 2

Name the following compound:

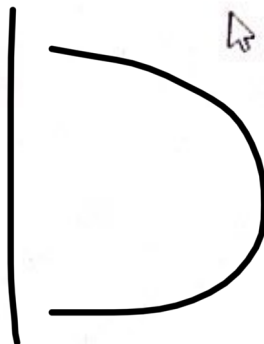○ 2-methyl-4-ethyl-5-hexyne

○ 4-ethyl-2-methyl-5-hexyne

○ 3-ethyl-5-methyl-1-hexyne

○ 5-methyl-3-ethyl-1-hexyne

The name of the chemical compound KNO_3 is:

○ potassium nitrite
○ potassium(I) nitrite
○ potassium(I) nitrate
○ potassium nitrate

Question No. 1

Express the equilibrium constant for the following reaction.

$$PCl_5 (g) \rightleftharpoons PCl_3 (g) + Cl_2 (g)$$
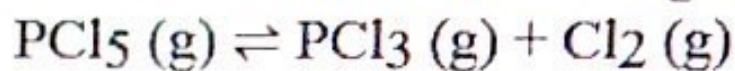
$\bigcirc$ $K = \dfrac{[PCl_3][Cl_2]}{[PCl_5]}$

$\bigcirc$ $K = \dfrac{[PCl_3]^2[Cl_2]^2}{[PCl_5]^2}$

$\bigcirc$ $K = \dfrac{[PCl_5]}{[PCl_3][Cl_2]}$

$\bigcirc$ $K = \dfrac{[PCl_3][Cl]^2}{[PCl_5]}$

Determine the molecular formula of a compound that has a molar mass of 146 g/mol an an empirical formula of $C_3H_5O_2$.

- ○ $C_3H_5O_2$
- ○ $C_9H_{15}O_6$
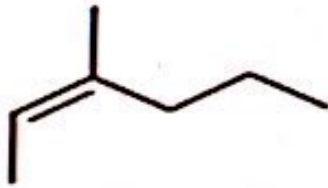- ○ $C_6H_{15}O_4$
- ○ $C_6H_{10}O_4$

Question No. 5

What is the name of the following compound?

- ○ 3-methylenehexane
- ○ 3-methyl-3-hexene
- ○ 4-ethyl-4-hexene
- ○ 3-methyl-2-hexene

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What is the equilibrium constant expression for the following reaction?

$$4\ NH_3(g) + 5\ O_2(g) \rightleftharpoons 4\ NO(g) + 6\ H_2O(g)$$
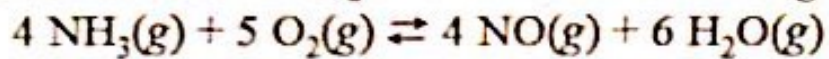
○ $K_C = [NH_3]^4 [O_2]^5 / [NO]^4 [H_2O]^6$

○ $K_C = [NO]^4 [H_2O]^6 / [NH_3]^4 [O_2]^5$

○ $K_C = [NO][H_2O] / [NH_3][O_2]$

○ $K_C = [NH_3][O_2] / [NO][H_2O]$

B

Question No. 7

The IUPAC name of C_3H_4 is _____ .

- propene
- propane
- butyne
- propyne
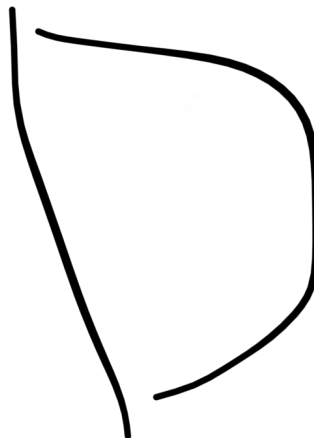
Identify the type of this organic compound:

○ ketone

○ aldehyde

○ carboxylic acid

○ alcohol

A
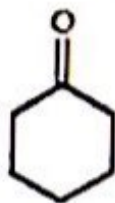
Question No. 11

To which family does this organic compound belong?
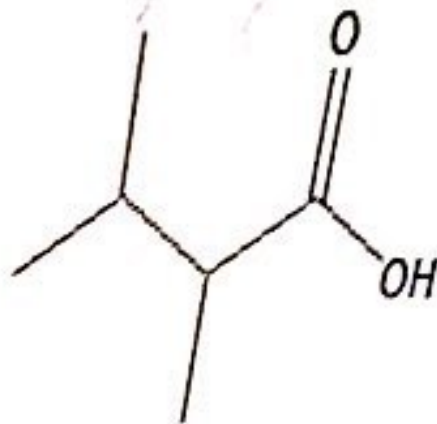
- ether
- amine
- carboxylic acid
- amide
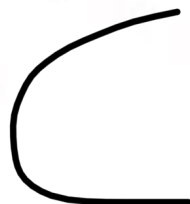
Question No. 13

Which of the following is a polyatomic ion?

- NO_3^{1-}
- Br^{1-}
- Na^{1+}
- S^{2-}

A

Question No. 17

How many hydrogen atoms are there in "butane" ?

- ○ 10
- ○ 4
- ○ 6
- ○ 8

A

Question No. 16

Provide the name of the compound below.
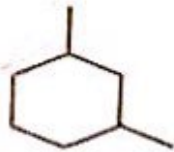
- ○ 1,3-dimethylcyclohexane
- ⊖ 1,2-dimethylhexane
- ○ 2,4-dimethylcyclohexane
- ○ Dimethylcyclohexane

Scientific Calculator — ✕

A
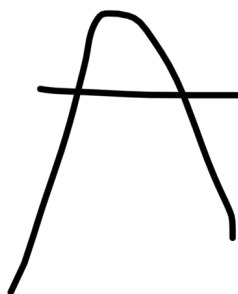
Question No. 15

CO_2 acts as a Lewis acid in the reaction $CaO(s) + CO_2 \rightarrow CaCO_3(s)$ because it _____.

○ is an electron-pair acceptor

○ turns blue litmus to red

○ reacts with a metal

○ is a proton donor

Question No. 18

In the reaction below, what is the theoretical yield in moles for LiOH when 6 grams of Li_2O react with 7 grams of H_2O?

$$Li_2O + H_2O \rightarrow 2LiOH$$
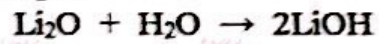
○ 1.0 mol

○ 0.4 mol

○ 0.6 mol

○ 0.8 mol

Scientific Calculator ___ ✕

B

Total questions in exam: 40 | Answered: 3

Question No. 19

The number which is located on the LEFT of a chemical formula that helps to balance a chemical equation is called _____

- coefficient
- superscript
- exponent
- subscript

A

Question No. 20

Which of these substances gives a weak electrolyte when dissolved in water?

- ionic salt
- strong acid
- weak base
- strong base
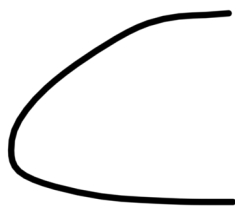
Which of the following pairs is NOT a conjugate acid-base pair according to the concept of Bronsted-Lowry?

- $H_2PO_4^-$ and HPO_4^{2-}
- H_3PO_4 and $H_2PO_4^-$
- H_3PO_4 and HPO_4^{2-}
- HPO_4^{2-} and PO_4^{3-}

Scientific Calculator — ✕
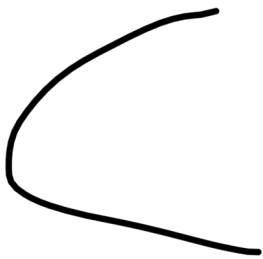
Question No. 24

Identify the substance that contains ionic bond.

- ○ KCl
- ○ Ne
- ○ CO
- ○ H_2O

A

dentify the Bronsted-Lowry conjugate acid in the following reactior

$$H_2O + CO_3^{2-} \rightarrow HCO_3^- + OH^-$$

- HCO_3^-
- H_2O
- CO_3^{2-}
- OH^-

A
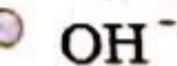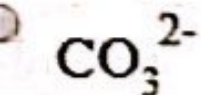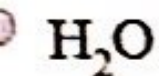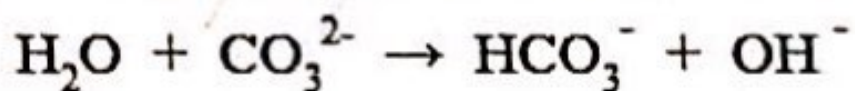
Question No. 26

Based on Lewis structures, the number of lone pairs of electrons in the water molecule is _____

- ○ 2
- ○ 8
- ○ 4
- ○ 3

Scientific Calculator

A

Question No. 27

The mass percent composition of <u>oxygen</u> in the acid H_2SO_3 is:

- ○ 65.3%
- ○ 2.5%
- ○ 58.5%
- ○ 39.1%

What is the $[OH^-]$ in a solution that has a $[H_3O^+] = 1 \times 10^{-6}\,M$?

- $1 \times 10^{-8}\,M$
- $1 \times 10^{-2}\,M$
- $1 \times 10^{-6}\,M$
- $1 \times 10^{-10}\,M$

A

How many grams of $AlCl_3$ could be produced when 94.5 grams of Al completely react with Cl_2 according to the reaction?

$$2Al + 3Cl_2 \rightarrow 2AlCl_3$$
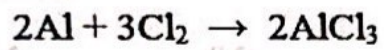
- ○ 533 g
- ○ 133 g
- ○ 399 g
- ○ 467 g

Question No. 29

Organic compounds that contain a "benzene ring" are called _____ compounds.

- ○ saturated
- ○ carboxylic
- ○ cycloalkane
- ○ aromatic
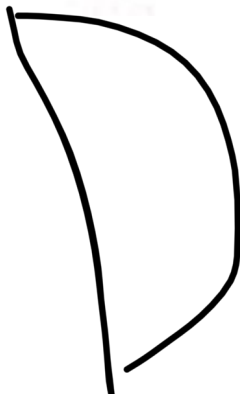
Question No. 32

The conjugate base of H_2SO_4 is

- HSO_4^-
- HSO_4^+
- H_2SO_4
- OH^-

A

Question No. 33

Give the direction of the reaction, if Kc >> 1

- ○ Both directions are equally favored.
- ○ The forward reaction is favored.
- ○ The reverse reaction is favored.
- ○ Neither direction is favored.

B

Question No. 37

Determine the value of K_c for the following reaction if the equilibrium concentrations are as follows: $[N_2]_{eq} = 1.5$ M, $[H_2]_{eq} = 1.1$ M, $[NH_3]_{eq} = 0.47$ M.

$$N_2(g) + 3 H_2(g) \rightleftharpoons 2 NH_3(g)$$

○ 0.11
○ 3.5
○ 0.28
○ 9.1
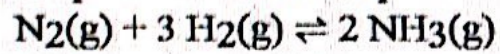
Choose the correct name for the following compound:
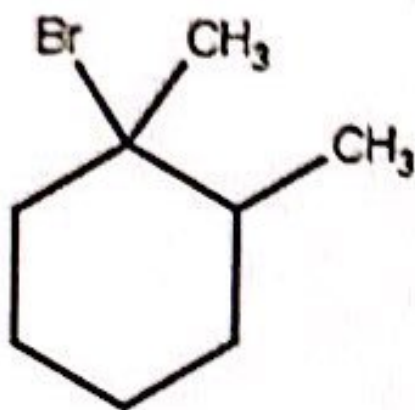
○ 2-bromo-2-methyltoluene

○ 1-bromo-1,2-dimethylcyclohexane

○ 1-bromo-1,2-dimethylbenzene

○ 2-bromo-1,2-dimethylcyclohexane

What is the family of a compound that has he following general formula?

$$R-\overset{\displaystyle \overset{O}{\|}}{C}-H$$
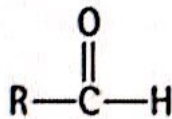
- ○ ketone
- ○ aldehyde
- ○ carboxylic acid
- ○ ester

Scientific Calculator   — ✕

B

Question No. 38

Which of the following is NOT a conjugate acid/base pair?

- H_2SO_3 / SO_3^{2-}
- HCl / Cl^-
- HNO_3 / NO_3^-
- HBr / Br^-

Question No. 39

When the substances in the equation below are at equilibrium, at pressure P and temperature T, the equilibrium can be shifted to favor the products by

$$CuO(s) + H_2(g) \rightleftharpoons H_2O(g) + Cu(s) + Heat$$
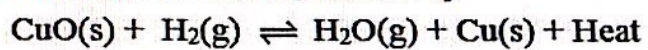
- adding more CuO
- increasing the pressure.
- decreasing the pressure.
- decreasing the temperature

Scientific Calculator — ✕
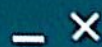
Question No. 40

What is the final molarity of H_2SO_4 solution, if 80 mL of 4M H_2SO_4 was diluted to a final volume of 1 L?

○ 0.48 M

○ 0.24 M

○ 0.32 M

○ 0.40 M
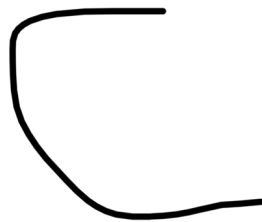
Question No. 3

The following reaction is *exothermic*. Which of the following will drive the reaction to the right (towards products)?

$$CH_4 \text{ (g)} + 2\,O_2 \text{ (g)} \rightleftharpoons CO_2 \text{ (g)} + 2\,H_2O \text{ (g)} + \text{heat}$$
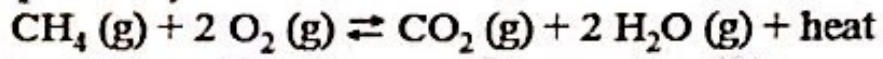
○ An increase in temperature

○ An increase of H_2O

○ The removal of CH_4

○ A decrease of CO_2

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Question No. 2

What substance is the oxidizing agent in the following redox reaction?

$$Zn(s) + Cu^{2+}(aq) \rightarrow Zn^{2+}(aq) + Cu(s)$$

○ $Cu2+$

○ Zn

○ Cu

○ $Zn2+$

A

Total questions in exam: **40** | Answered: **0**

Question No. 5

What is the correct name of the following compound?

$$CH_3 - CH - CH_3$$
$$|$$
$$F$$
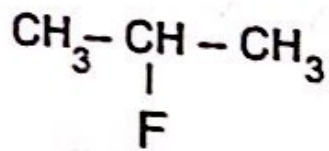
○ 2-fluoropropane

○ fluoropropyl

○ 2-fluorobutane

○ 1-fluoropropane

A

Total questions in exam: 40 | Answered: 0

Question No. 6

Which of the following generic formulas is correctly representing a "saturated hydrocarbon"?

○ C_nH_{2n+2}

○ C_nH_n

○ C_nH_{2n-2}

○ C_nH_{2n}

A

Question No. 4

What is the oxidation number of iron in Fe_2O_3?

- ○ -6
- ○ -3
- ○ +3
- ○ +6
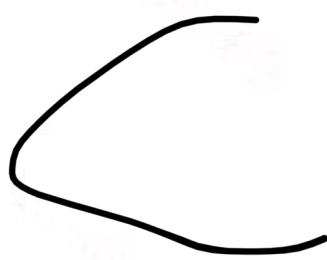
Question No. 7

If 5.0 moles of LiF are dissolved in enough water to make 2.5 L of solution, calculate the molarity of this solution.

○ 1.0 M
○ 2.0 M
○ 2.5 M
○ 0.75 M

B

Question No. 8

Which of the following molecular formulas corresponds to an alkene?

- C_8H_{16}
- C_8H_{14}
- C_8H_{20}
- C_8H_{18}

A

Question No. 14

How many grams of $AlCl_3$ could be produced when 1.5 moles of Cl_2 completely react with aluminum according to the reaction?

$$2Al + 3Cl_2 \rightarrow 2AlCl_3$$
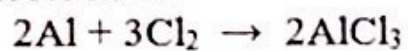
○ 134 g

○ 333 g

● 267 g

○ 533 g

Total questions in exam: **40** | Answered: **11**

Question No. 8

What substance is oxidized in the following redox reaction?

$$Zn(s) + Cu^{2+}(aq) \rightarrow Zn^{2+}(aq) + Cu(s)$$

○ Zn

○ Cu

○ Zn2+

○ Cu2+
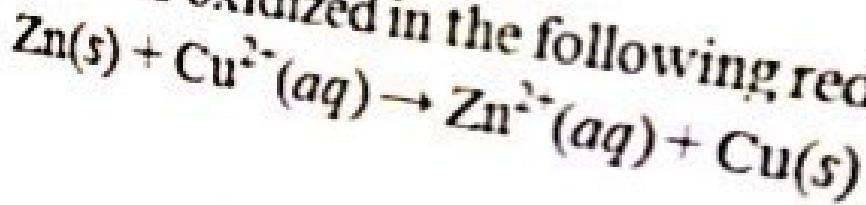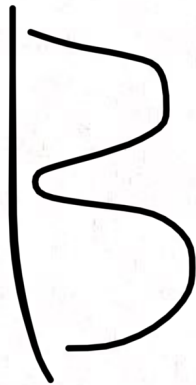
Total questions in exam: **40** | Answered: **40**

Question No. 3

What is the coefficient of oxygen gas after balancing the following equation?

$$\_AgClO_3(s) \xrightarrow{\Delta} \_AgCl(s) + \_O_2(g)$$
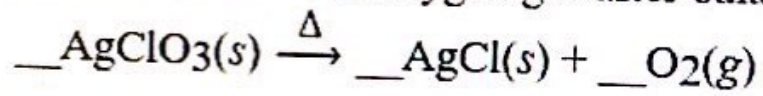
○ 1

○ 3

◉ 2

○ 4

What is the type of the following alcohol?

$$CH_3-CH_2-\overset{\displaystyle H}{\underset{\displaystyle H}{\overset{|}{\underset{|}{C}}}}-OH$$
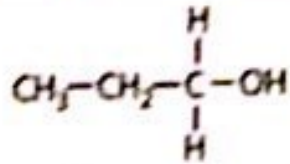
○ Quaternary
○ Primary
○ Secondary
○ Tertiary

Primary

Question No. 6

_____ gives a non-electrolyte when dissolved in water.

○ weak base

○ $CaCl_2$

◉ HNO_3

○ $C_{12}H_{22}O_{11}$

Solid aluminum and gaseous oxygen react in a combination reaction to produce Al_2O_3

$$4Al\,(s) \; + \; 3\,O_2\,(g) \rightarrow 2\,Al_2O_3\,(s)$$
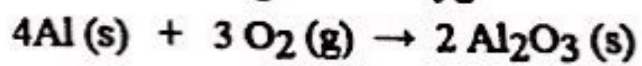
The maximum amount of Al_2O_3 that can be produced from 2.5 g of Al and 2.5 g of O_2 is _____ g.

○ 4.7

○ 7.4

○ 5.3

○ 9.4

A

Total questions in exam: 40 | Answered: 40

Question No. 39

A reaction with an equilibrium constant $K_c = 1.5 \times 10^{16}$ would consist of which of the following at equilibrium:

- ○ some reactants and products with reactants slightly favored
- ● mainly reactants are favored
- ○ mainly products are favored
- ○ approximately equal reactants and products
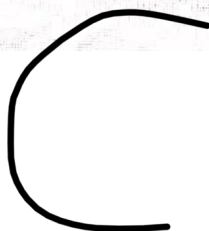
Question No. 28

For the following acid-base reaction, identify

$$HCl + NaOH \rightleftharpoons ???? + ?$$
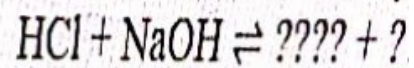
○ H_3OCl, acid

○ $NaOH_2$, base

○ $NaCl$, acid

○ $NaCl$, water

D

Question No. 29

In the reaction below, what is the theoretical yield in grams for B_2H_6 when 5 moles of BF_3 react with 4 moles of NaH?

$$8\,BF_3 + 6\,NaH \rightarrow 6\,NaBF4 + B_2H_6$$
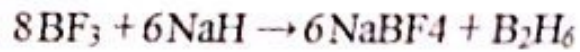
- ○ 28.5 g
- ○ 9.5 g
- ○ 17.3 g
- ○ 12.5 g
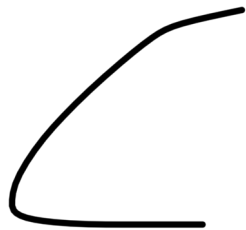
Question No. 21

Determine the limiting reactant (LR) and the theoretical yield (in g) of iron (F
can be formed from 28.65 g Fe_2O_3 and 10.0 g Al according to the following e

$$Fe_2O_3 + 2\,Al \rightarrow Al_2O_3 + 2\,Fe$$
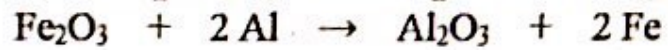
○ Al, 19.99 g Fe.

○ Fe_2O_3, 20.7 g Fe.

○ Fe_2O_3, 19.99 g Fe.

○ Al, 20.7 g Fe.

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Question No. 29

What is the empirical formula of the compound that has a composition by mass of 84.2% C and 15.8% H?

○ C_3H_8

○ C_4H_{10}

○ C_4H_9

○ C_3H_9

What is the term for a substance that donates a proton in an acid-base reaction?

- ○ Lewis acid
- ⦿ Arrhenius base
- ○ Brønsted-Lowry base
- ○ Brønsted-Lowry acid

Question No. 39

When the temperature is decreased on the following system at equilibrium:

$$HCl_{(aq)} + Mg_{(s)} \rightleftharpoons MgCl_{2(aq)} + H_{2(g)} + heat$$
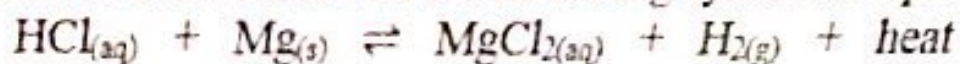
○ None of these choices is true

○ the reaction shifts left to restore equilibrium

○ the reaction shifts right to restore equilibrium

○ No change occurs
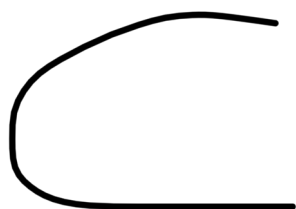
Question No. 27

After a chemical reaction reaches equilibrium, _____

- ○ The amount of products is increasing.
- ○ The amount of reactants and products are constant.
- ○ The amount of products is decreasing.
- ○ The amount of reactants and products are equal.

B

Question No. 24

The substance that causes the reduction of another substance is called:

- anode
- reducing agent
- cathode
- oxidizing agent

B

Question No. 24

Refer to the equilibrium shown below. Adding excess oxygen will _____.

$$CH_4 (g) + 2O_2 (g) \rightleftharpoons CO_2 (g) + 2H_2O (g)$$
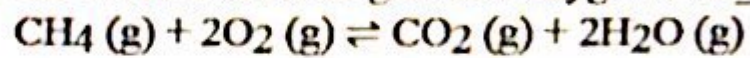
○ have no effect

○ cannot be determined, since the temperature is not known

○ shift the reaction to the right

○ shift the reaction to the left
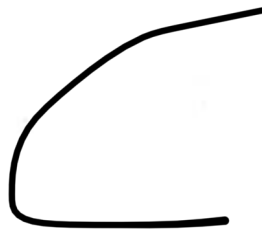
Save & Next خطر والتالي

Total questions in exam: **40** | Answered: **32**

Question No. 40

Refer to the equilibrium shown below. If the reaction volume is increased, this will _____
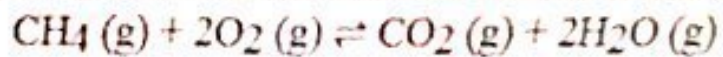
$$CH_4 (g) + 2O_2 (g) \rightleftharpoons CO_2 (g) + 2H_2O (g)$$

- cannot be determined, since the temperature is unknown
- shift the reaction to the right
- have no effect
- shift the reaction to the left
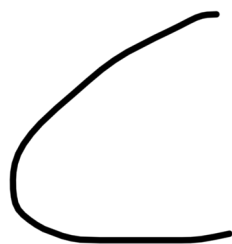
Save & Next

Question No. 38

Solutions that resist sharp changes in their pH values are called _____.

- ○ adducts
- ○ electrolytes
- ○ non-electrolytes
- ○ buffers

Save & Next حفظ، والتال

Question No. 37

Identify the type of this organic compound:

- ketone
- alcohol
- carboxylic acid
- aldehyde

Save & Next

Total questions in exam 40 | Answered 32

Question No. 33

Dinitrogen tetraoxide decomposes to produce nitrogen dioxide. Calculate the equilibrium constant for the reaction given the equilibrium concentrations at 100 °C:
$[N_2O_4] = 0.60$ M and $[NO_2] = 1.00$ M.

$$N_2O_4(g) \rightleftharpoons 2 NO_2(g)$$

- $K_c \approx 1.67$
- $K_c = 2.00$
- $K_c = 0.625$
- $K_c = 0.500$

A

Total questions in exam: **40** | Answered: **32**

Question No. 32

What is the molarity of a solution made by dissolving 25.00 g of NaCl in enough water to make 625 mL of solution?

- 0.684 M
- 0.308 M
- 0.479 M
- 0.526 M

Total questions in exam: **40** | Answered: **32**

Question No. 30

Which of the following is true if the hydronium ion concentration "increases" in an aqueous solution?

- pH decreases
- pH increases
- K_W increases
- K_W decreases

A

Save & Next ...

A chemical equation is balanced when _____

○ the total number of ions is the same in reactants and products.
○ the number of atoms of each element is the same in reactants and products.
○ the total number of molecules is the same in reactants and products.
○ the sum of the coefficients of the reactants is equal to the sum of the coefficients of the products.

B

Question No. 32

Which statement about diluted solutions is false? When a solution is diluted, _____.

- ○ the number of moles of solute remains unchanged
- ○ the volume of solvent remains unchanged
- ○ the concentration of the solution decreases
- ○ the molarity of the solution decreases

B

Question No. 34

Which structure below represents a ketone?

○   (benzene ring)—NH_2

○   (benzene ring)—$\overset{\displaystyle O}{\overset{\|}{C}}$—OH

○ $CH_3\text{-}CH_2\text{-}C\overset{\displaystyle O}{\underset{H}{<}}$

○   (benzene ring)—$\overset{\displaystyle O}{\overset{\|}{C}}$—$CH_3$
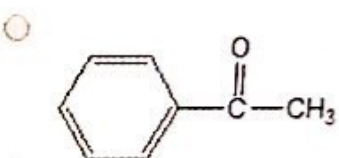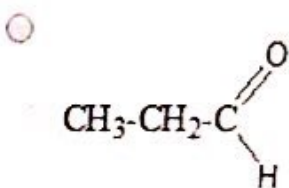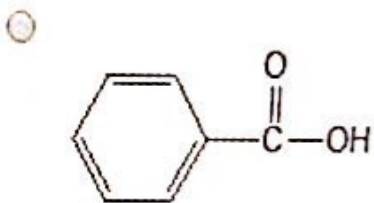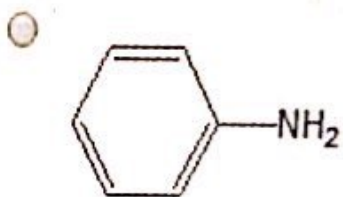
Question No. 25

The most correct name for the compound NI_3 is:

- ○ nitrogen triiodide
- ○ mononitrogen triiodide
- ○ nitrogen iodide
- ○ triiodo nitrogen

A

Question No. 21

What is the coefficient of oxygen gas after balancing the following equation?
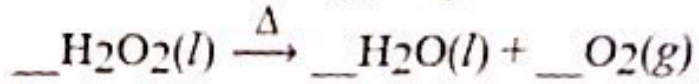
$$\_H_2O_2(l) \xrightarrow{\Delta} \_H_2O(l) + \_O_2(g)$$

- ○ 4
- ○ 1
- ○ 3
- ○ 2

B

Question No. 21

What is the IUPAC name for the following compound?

$$CH_3CH_2CH_2CHCH_2CH \overset{\displaystyle CH_3}{\underset{\displaystyle CH_2CH_3}{|}}$$

with substituents CH_3 and CH_3
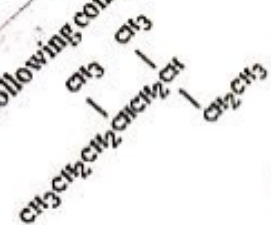
○ 1. 3-dimethyl-1-ethylhexane

○ sec-hexylbutane

○ 4. 6-dimethyl-6-ethylhexane

○ 3. 5-dimethyloctane

Total questions in exam: **40** | Answered: **27**

Question No. 24

What is the molecular formula of a compound that has a molar mass of 30 g/mol and its empirical formula is CH_2O?

- ○ $C_5H_{10}O_5$
- ○ CH_2O
- ○ $C_4H_8O_4$
- ○ $C_3H_6O_3$

Question No. 23

What is the $[H_3O^+]$ in a solution with $[OH^-] = 1 \times 10^{-12}$ M?

- ○ 1×10^{-5} M
- ○ 1×10^{-2} M
- ○ 1×10^{-12} M
- ○ 1×10^{2} M

B

MKCL OES

Total questions in exam: 40 | Answered: 0

Question No. 2

What is the general term for a substance dissolved in water?

- ○ covalent substance
- ○ aqueous solution
- ○ ionic salt
- ○ water solution

B

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Questic

For the reaction: $C_{(s)} + H_2O_{(g)} \rightleftharpoons H_{2(g)} + CO_{(g)}$ ΔH is positive (endothermic)
What would be the effect of removing H_2 gas from the reaction vessel?

○ More water will be formed.

○ The reaction will shift to the left.

○ The reaction will shift to the right.

○ The reaction will not be affected

C

La Chatelier's princple of concentration:
-if we add THE reaction shifts to the opposite side
- if we remove THE reaction will shift to the same side

The coefficients (a,b,c) needed to balance the equation below are:

$$a\ Li\ +\ b\ Cl_2\ \longrightarrow\ c\ LiCl$$

○ (2,1,2)

○ (1,2,1)

○ (2,2,1)

○ (1,2,2)

A

2Li + Cl2 -> 2LiCl
Li: 2 , Cl: 2
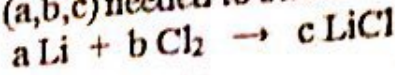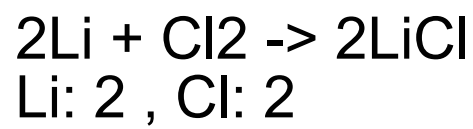
HP Compaq LE1711

What is the family of this organic compound?

$$CH_3-CH_2-NH_2$$
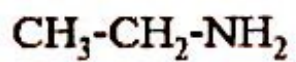
- ○ phenol
- ○ amine
- ○ amide
- ○ ether

B R-NH2 OR C-NH2
IT IS AMINE

What is the IUPAC name for the following?

$$CH_3-CH_2-CH-CH_2-CH-CH_2-CH_2-CH_3$$
$$\qquad\qquad | \qquad\qquad\quad |$$
$$\qquad\quad CH_3 \qquad\quad CH_2-CH,$$
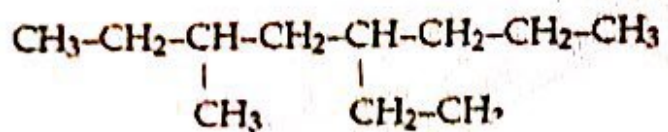
- ○ 4-ethyl-6-methyloctane
- ○ 3-ethyl-5-methyloctane
- ○ Isooctane
- ○ 5-ethyl-3-methyloctane

D

Question No. 11

In the "Basic" solutions, _____

- ○ pH < 7 and $[H_3O^+] > 10^{-7}$ M
- ○ pH $= 7$ and $[H_3O^+] = 10^{-7}$ M
- ○ pH > 7 and $[H_3O^+] > 10^{-7}$ M
- ○ pH > 7 and $[H_3O^+] < 10^{-7}$ M

D

10^8 to 10^14 are < 10^7

Total questions in exam: **40** | Answered: **0**

Question No. 17

In the reaction below, what is the theoretical yield in moles for NO when 5 moles of NH_3 react with 7 moles of O_2?

$$4 NH_3 + 5 O_2 \rightarrow 4 NO + 6 H_2O$$
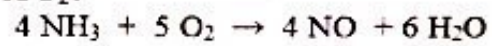
○ 3 6 mol

○ 2.4 mol

○ 5.0 mol

○ 4.8 mol

C

Ques

What is the chemical formula for magnesium hydroxide?

- ○ MgOH2
- ○ MgOH
- ○ MgH2
- ○ Mg(OH)2

D

Mg = +2 , OH = -1
Mg(OH)2

Ques

What is the conjugate acid of NH_3?

- NH_3
- NH_2
- NO_3
- NH_4^+

D

Conjugate acid is a base which accepts a proton
NH3 + H -> NH4+

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What is the name of this compound?

○ cyclohexane
○ cyclopentane
○ cyclooctane
○ cycloheptane

A

Question No. 3

When the substances in the equation below are at equilibrium, at pressure P and temperature T, the equilibrium can be shifted to favor the products by

$$CuO(s) + H_2(g) \rightleftharpoons H_2O(g) + Cu(s) + Heat$$
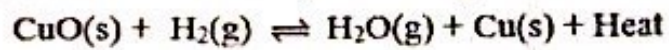
○ adding more CuO

○ increasing the pressure.

○ decreasing the pressure.

○ decreasing the temperature

D

In exotheremic reaction (heat is product) when we remove heat the reaction will shift to favor the products.

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Total questions in exam: **40** | Answered: **0**

Question No. 5

The molarity (M) of an aqueous solution containing 22.5 g of sucrose ($C_{12}H_{22}O_{11}$) in 35.5 mL of solution is _____.

○ 1 85

○ 0 0657

○ 0 104

○ 3 52

A

1-Grams to moles
moles = grams / moar mass = moles
moles of Sugar = 22.5 / 342 = 0.065mol
2-find molarity:
M = moles / volume in (L)
M = 0.065 / 0.035 (ml ->L)
M = 1.85

Question No. 7

The compound NH_3 can be described as _____.

- ○ Bronsted-Lowry acid
- ○ Arrhenius acid
- ○ Lewis base
- ○ Lewis acid

C

Question No. 9

Calculate the volume (in liter) of a solution that contains 3.12 moles of NaCl if the molarity of this solution is 6.67 M NaCl

- 2.823 L
- 2.141 L
- 0.208 L
- 0.468 L

D   Volume (L) = moles / molarity

Total questions in exam: **40** | Answered: **0**

Question No. 25

What is the term for the pairs of valence electrons that are not shared in a molecule?

- ○ core electrons
- ○ bonding electrons
- ○ lone pairs of electrons
- ○ sharing electrons

C

What is the name of the following alkyl group: CH_3-CH_2-?

- ⊚ methyl
- ⊙ isopropyl
- ⊙ ethyl
- ⊙ propyl

C

CH3: methyl
CH3CH2: ethyl
CH3CH2CH2: propyl

Save & Next حفظ رالتلى

The name of the chemical compound $NaNO_3$ is:

- ○ sodium nitrite
- ○ sodium(I) nitrate
- ○ sodium nitrate
- ○ sodium(I) nitrite

C

Save & Next حفظ والتالي

Total questions in exam: **40** | Answered: **0**

Question No. 23

Which of the following molecular formulas corresponds to an "alkane"?

○ C_5H_{10}

○ C_5H_8

○ C_5H_{12}

○ C_5H_{14}

C

Alkane: CnH2n+2
Alkene: CnH2n
Alkyne: CnH2n-2

Question No.

Lewis Acid is defined as

- a proton acceptor
- Produces OH⁻ ions in an aqueous solution
- an electron pair donor
- an electron pair acceptor

D

Lewis acid: acceptor
Lewis base: donor

Save & Next حفظ والتالي

HP Co

Total questions in exam: **40** | Answered: **0**

Question No. 24

What is the final molarity of H_3BO_3 solution, if $110\,mL$ of $4M$ H_3BO_3 was diluted to a final volume of $0.3\,L$?

○ 1.78 M

○ 1.47 M

○ 2.13 M

○ 1.97 M

B

M2 = M1V1/V2

Question No. 21

What is the IUPAC name for the following?

$$CH_3-CH_2-CH-CH-CH_3$$
$$\overset{|}{CH_3} \quad \overset{|}{CH_3}$$
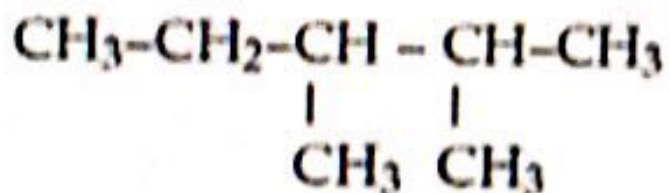
- isoheptane
- heptane
- 2,3-dimethylpentane
- 2-methyl-3-methylpentane

C

Question No. 13

Which of the following compounds is an ester?

○
$$CH_3CH_2\overset{\displaystyle O}{\overset{\displaystyle \|}{C}}CH_3$$

○
$$CH_3CH_2\overset{\displaystyle O}{\overset{\displaystyle \|}{C}}NH_2$$

○
$$CH_3CH_2\overset{\displaystyle O}{\overset{\displaystyle \|}{C}}-O-CH_3$$

○
$$CH_3\overset{\displaystyle O}{\overset{\displaystyle \|}{C}}-OH$$

Save & Next التالي و احفظ

Ester: COOC

C

Question No. 14

What is the name of compound has the following general formula?

$$R-\overset{\overset{\textstyle O}{\|}}{C}-R'$$

- carboxylic acid
- aldehyde
- ketone
- ester

C   Ketones: R-CO-R

Question No. 22

The name of the chemical compound Cu_2CO_3 is:

○ copper(II) carbonate

○ copper(III) carbonate

○ copper(I) carbonate

○ copper carbonate

C

Question No. 13

The molar mass of $Ca(OH)_2$ is equal to:

- 57 g/mol
- 68 g/mol
- 74 g/mol
- 38 g/mol

C

Save & Next

Question No. 5

How many lone pairs of electrons are on the P atom in PF

- 3 pairs
- 1 pair
- 2 pairs
- 0 pairs

B

Question No. 4

What is the IUPAC name for $CH_3-CH_2-C\equiv CH$?

- ○ 3-butyne
- ○ 1-butyne
- ○ 2-butyne
- ○ butyne

B

Question No. 6

Consider the following reaction at equilibrium. Adding more oxygen will _____

$$2SO_2(g) + O_2(g) \rightleftharpoons 2SO_3(g)$$
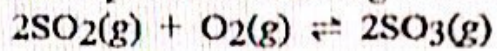
○ shift the reaction to the right
○ have no effect
○ shift the reaction to the left
○ cannot be determined, since the temperature is unknown

A

Save & Next حفظ والتالي

Question No.

If a saliva sample has a pH = 7.5, the solution is _____

○ strongly acidic

○ weakly basic

○ weakly acidic

○ neutral

B

Save & Next حفظ والتالي

Total questions in exam: **40** | Answered: **3**

Question No. 2

How many moles of $(NH_4)_2S$ are there in 75 g of $(NH_4)_2S$?

- ○ 1.1
- ○ 1.9
- ○ 3.4
- ○ 7.5

A

Save & Next حفظ والتالي

Question No. 3

Identify the functional group:
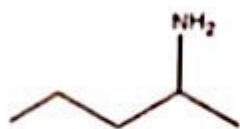
○ amine

○ amide

○ carboxylic acid

○ ketone

A

Save & Next حفظ والتالى

HP Compaq LE1711

Question No. 5

The name of the chemical compound CuI_2 is:

○ Copper(II) iodide
○ Copper(III) iodide
○ Copper(I) iodide
○ Copper iodide

A

Save & Next منتظر زلار

Question No. 4

In an oxidation-reduction reaction, the oxidized substance always _____

○ shows loss of electrons
○ shows gain of neutrons
○ gives up hydrogen atoms
○ shows gain of electrons

A

HP Compoq LE1711

Question No. 7

The oxidation number of phosphorus in PF_3 is _____.

○ -5

○ +5

○ -3

○ +3

D

Total questions in exam: **40** | Answered: 0

Question No. 5

Which of the changes listed below will shift the equilibrium position to the *right* for the following reversible reaction?

$$CH_4(g) + H_2O(g) + heat \rightleftharpoons CO(g) + 3\ H_2(g)$$
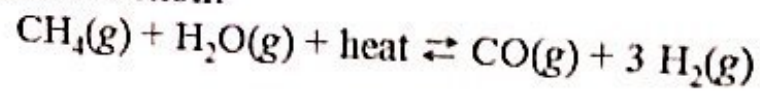
○ A decrease of volume

○ A decrease of $[CH_4]$

○ A decrease of temperature

○ A decrease of $[CO]$

D

Total questions in exam: **40** | Answered: **0**

Question No. 1

What is the name of compound shown below?
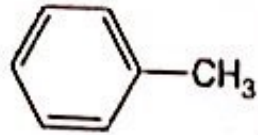
○ benzene
○ phenol
○ toluene
○ aniline

C

Total questions in exam: **40** | Answered **12**

Question No. 23

Which of the following symbols indicates a solid substance in a chemical equation?

- (s)
- (l)
- (g)
- (aq)

A

Total questions in exam: **40** | Answered: **0**

Question No. 2

Which of the following expression symbols is used for quantifying acidity and basicity?

○ aH
○ bH
○ eH
○ pH

D

Question No. 10

Dinitrogen tetraoxide decomposes to produce nitrogen dioxide. Calculate the equilibrium constant for the reaction given the equilibrium concentrations at 100 °C: $[N_2O_4] = 0.60$ M and $[NO_2] = 1.00$ M.

$$N_2O_4(g) \rightleftharpoons 2\,NO_2(g)$$
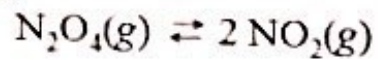
- $K_c = 2.00$
- $K_c = 0.500$
- $K_c = 0.625$
- $K_c = 1.67$

D

Question No. 32

What is the charge on Fe in FeO?

- ○ 2-
- ○ 1+
- ○ 2+
- ○ 3+

C

FeO = 0
O = -2
Fe -2 = 0
Fe = +2

Question No. 17

If 148.9 g of KCl are dissolved in enough water to make 4 L of solution, what is the molarity of this solution?

○ 0.5 M
○ 1.8 M
○ 2.3 M
○ 2.0 M

A

Total questions in exam: **40** | Answered: **11**

Question No. 35

When the following equation is balanced, the coefficient for (NO) will be _____

$$NO(g) \rightleftharpoons N_2(g) + O_2(g)$$
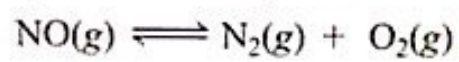
- ○ 1
- ○ 2
- ○ 4
- ○ 3

B

Total questions in exam: **40** | Answered: **12**

Question No. 20

Which of the following substances contains a nonpolar covalent bond?

- H_3O^-
- NaCl
- NH_3
- N_2

D

Diatomic molecule is nonpolar for ex: N2, O2, F2 ...etc

Question No. 21

What is the final molarity of H_2SO_4 solution, if 85 mL of 4 M H_2SO_4 was diluted to a final volume of 0.5 L?

○ 0.52 M
○ 0.60 M
○ 0.68 M
○ 0.76 M

C

Question No. 16

The systematic name for the compound represented below is

$$CH_3-CH_2-CH_2-CH-CH-CH_3$$

with substituents:
- CH_2-CH_3 on one carbon
- CH_2 then CH_2-CH_3 on the adjacent carbon
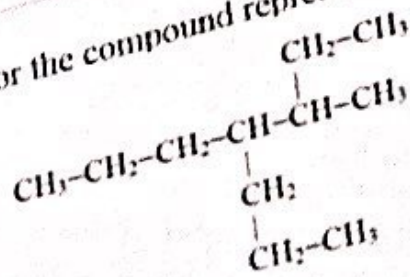
- ● 4,5-diethylheptane.
- ○ 3-propyl-4-ethylhexane
- ○ 3-ethyl-4-propylhexane
- ○ 3-methyl-4-propylheptane.

D

Question No. 30

Which of the following is a general property of an acidic solution?

○ tastes sour
○ turns litmus paper to red
○ pH is less than 7
○ all are correct

D

What is the family of this organic compound?

$$CH_3-CH_2-\overset{\overset{\textstyle O}{\|}}{C}-H$$
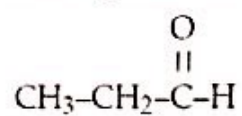
○ aldehyde
○ ketone
○ carboxylic acid
○ ester

A Aldehyde: R-CO-H

Question No. 36

Calculate the mass percent composition of carbon in $Fe_2(CO_3)_3$?

- ○ 12.3%
- ○ 18.1%
- ○ 22.7%
- ○ 27.1%

A

Question No. 25

What is the molecular formula of a compound that has a molar mass of 68 g/mol and its empirical formula is HO?

○ H_2O

○ H_2O_3

○ H_4O_4

○ H_2O_4

C

MKCL OES

Total questions in exam **40** | Answered **12**

Question No. 18

Which of the following compounds gives a nonelectrolyte aqueous solution?

○ Na_2CO_3

○ HCl

○ $NaOH$

○ $C_6H_{12}O_6$

D

Sucrose is nonelectrolyte

Question No. 26

Which family of organic compounds does NOT contain a "carbonyl group, C=O"?

○ ethers
○ carboxylic acids
○ ketones
○ aldehydes

A Ethers: C-O

Total questions in exam: **40** | Answered: **5**

Question No. 33

Express the equilibrium constant for the following reaction.

$$KClO_3(s) \rightleftharpoons KClO(s) + O_2(g)$$
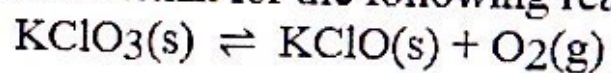
○ $K = [O_2]^{-1}$

○ $K = \dfrac{[KClO][O_2]}{[KClO_3]}$

○ $K = \dfrac{[KClO_3]}{[KClO][O_2]}$

○ $K = [O_2]$

D

Total questions in exam: 40 | Answered: 9

Question No. 13

Which of the following pairs of systematic names and common names is correctly matching?

○ toluene = hydroxybenzene

○ aniline = aminobenzene

○ acetylene = ethene

○ phenol = methylbenzene

B

methylbenzene = Toluene
Hydroxybenzene = Phenol
Aminobenzene = aniline
Aceylene = ethyne

Save & Next حفظ والتالي

Question No. 3

Which one of the following is a Lewis base?
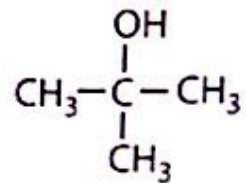
○ BF_3

○ $AlCl_3$

○ NH_4^+

○ NH_3

D

Question No. 34

What is the type of the following alcohol?

$$CH_3-\overset{\displaystyle OH}{\underset{\displaystyle CH_3}{\overset{|}{\underset{|}{C}}}}-CH_3$$

- ○ Secondary
- ○ Primary
- ○ Tertiary
- ○ Quaternary

C

Question No. 22

How many liters of a 0.5 M NaCl solution contain 1.5 mole of NaCl?

- 0.3 L
- 0.7 L
- 1.5 L
- 3.0 L

D

Total questions in exam: 40 | Answered: 0

Question No. 7

Which of the following is the electron dot formula (Lewis structure) for an atom of strontium?

(a) Sr·   (b) Ṣr·   (c) ·Ṡr: (d) ·Ṡr:
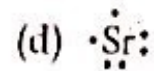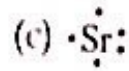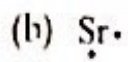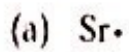
- (a)
- (b)
- (c)
- (d)

B: (b)

Question No. 4

Name the following organic compound:
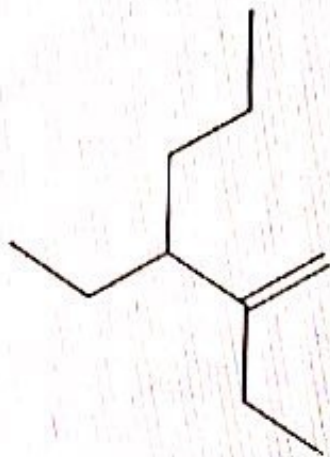
○ 2,3-diethyl-1-hexene

○ 4-ethyl-3-methyleneheptane

○ 2-ethyl-3-propyl-1-pentene

○ 2,3-diethyl-1-hexyne

A

Total questions in exam: 40 | Answered: 0

Question No. 6

What is the oxidation number of iron in $Fe_2(SO_4)_3$?

○ +5

○ -2

○ +2

○ +3

D

Total questions in exam **40** | Answered: **3**

Question No. 11

Which structure below represents a ketone?

D
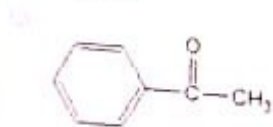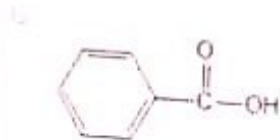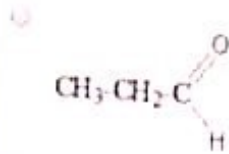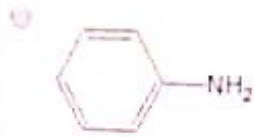
Total questions in exam: 40 | Answered: 0

Question No. 9

Provide the name of the compound below.
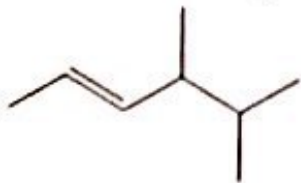
○ 2,3-dimethyl-4-hexene

○ 2,3-dimethyl-5-hexene

○ 4,5-dimethyl-2-hexene

○ 4,5-dimethyl-3-hexene

C

Total questions in exam **40** | Answered **35**

Question No. 17

The following reaction is *exothermic*. Which of the following will drive the reaction to the right (towards products)?

$$CH_4 (g) + 2 O_2 (g) \rightleftharpoons CO_2 (g) + 2 H_2O (g) + heat$$
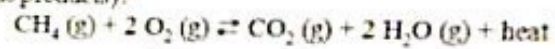
- An increase of H_2O
- A decrease of CO_2
- An increase in temperature
- The removal of CH_4

Save & Next

Question No. 2

Predict which of the following compounds has an ionic bond.

○ HI

○ CCl_4

○ LiH

○ IBr

C

Save & Next حفظ والتالي

The carbon skeleton of an alkane is shown below. How many hydrogen atoms are bonded to the carbon marked with a *?

$$\begin{array}{ccc} & C & C^* \\ & | & | \\ C-C- & C- & C-C \end{array}$$
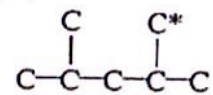
○ 1

○ 3

○ 2

○ 0

B

Question No. 22

Which of the following is true if the pH of a solution changes from 2 to 5?

- $[H^+]$ increases
- $[H^+]$ decreases
- K_W increases
- K_W decreases

B

$[H]+ = [H3O+]$
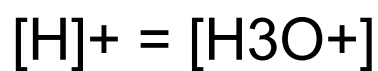
Question No. 37

How many moles and how many atoms of zinc (Zn) are in a sample weighing 34.9 g?

- 0.533 mol, 8.85×10^{-25} atoms
- 0.533 mol, 3.21×10^{23} atoms
- 1.87 mol, 3.10×10^{-24} atoms
- 1.87 mol, 1.13×10^{24} atoms

B

Question No. 24

Which of the following compounds gives a nonelectrolyte aqueous solution?

- HBr
- Na_2CO_3
- CCl_4
- HI

C

Question No. 40

The conjugate base of H_2SO_4 is

- HSO_4^-
- H_2SO_4
- OH^-
- HSO_4^-

D: HSO4-

Identify the type of this organic compound:
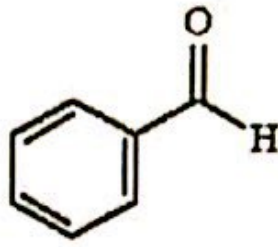
- ○ alcohol
- ○ carboxylic acid
- ○ aldehyde
- ○ ketone

C

If the stomach digestive juice has a pH = 2, this medium is _____

○ strongly acidic
○ neutral
○ weakly acidic
○ weakly basic

A

حفظ والقلي Save & Next

Total questions in exam: **40** | Answered: **5**

Question No. 34

What is the type of the following alcohol?

$$CH_3-\underset{\underset{CH_3}{|}}{\overset{\overset{OH}{|}}{C}}-CH_3$$

○ Secondary
○ Primary
○ Tertiary
○ Quaternary

C

If C atom bonded to:
1- 2H atoms and 1C then primary
2- 1H atoms and 2C then secondary
3- No H atom and 3C then teriary

How many moles of CO_2 could be produced when 168 grams of C_6H_{12} completely react with oxygen gas according to the reaction?

$$C_6H_{12} + 9O_2 \rightarrow 6CO_2 + 6H_2O$$
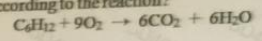
○ 4 mol
○ 10 mol
○ 6 mol
○ 12 mol

Mole of $C_6H_{12} = \dfrac{g}{A.A} = \dfrac{168}{(12\times6)+(12\times1)} = \boxed{2m}$

$1C_6H_{12} \longrightarrow 6CO_2$

$2C_6H_{12} \longrightarrow \boxed{12CO_2} \longrightarrow \boxed{D}$

Save & Next حفظ وقتل
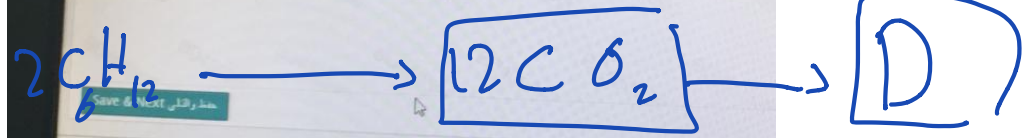
HP LE1901w

Question No. 1

In an experiment, 50.0 g of silicon tetrachloride ($SiCl_4$) is treated with 20.0 g of water to produce silicon dioxide (SiO_2) according to the following balanced equation:

$$SiCl_{4(S)} + 2H_2O_{(l)} \rightarrow SiO_{2(s)} + 4HCl_{(g)}$$
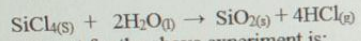
The limiting reactant for the above experiment is:

- $SiCl_4$
- SiO_2
- H_2O
- HCl

Save & Next هظروالى

Question No. 2

What is the oxidation number of manganese in MnO_2?

- +1
- +2
- +4
- 0

Save & Next

HP Compaq LE1711

$*$ مجموع شحنات المركب = صفر

$$Mn \overset{-2}{O_2} = x + (-2)(2) = 0$$

$$= x - 4 = 0$$

$$\boxed{x = +4} \longrightarrow Mn^{+4}O_2^{-2}$$

C
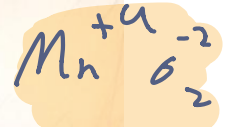
Total questions in exam: 40 | Answered: 6

Question No. 4

In which species does nitrogen have the highest oxidation number?

- NH3
- HNO2
- NaNO3
- NO2−

$$NH_3 \longrightarrow \overset{-3}{N}H_3$$

$$HNO_2 \longrightarrow \overset{+1}{H}\overset{+3}{N}\overset{-2}{O}_2$$

$$NaNO_3 \longrightarrow \overset{+1}{Na}\overset{\boxed{+5}}{N}\overset{-2}{O}_2$$

$$NO_2^- \longrightarrow \overset{+3}{N}\overset{-2}{O}_2{}^-$$

C
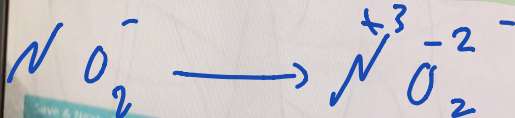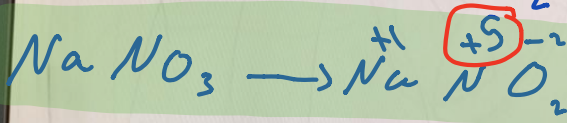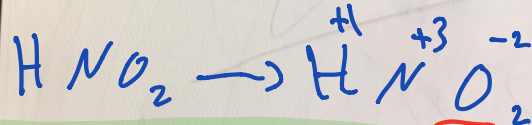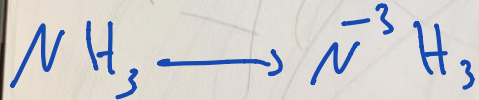
Which of the following solutions is the most basic?

- $[H_3O^+] = 1.0 \times 10^{-10}$ M
- $[OH^-] = 1.0 \times 10^{-10}$ M
- $[OH^-] < 1.0 \times 10^{-10}$ M
- $[H_3O^+] > 1.0 \times 10^{-7}$ M

Save & Next هنا واتابي

A chemical reaction has reached equilibrium when _____

- the rate of the forward reaction equals the rate of the reverse reaction
- all products have been removed from the reaction mixture
- all reactants have been converted to products
- the concentrations of reactants and products are equal

A

MKCL OES

Question No. 21

The compound CO_2 can be described as _____

- Lewis acid
- Lewis base
- Bronsted-Lowry acid
- Arrhenius acid

In the following reaction, what is the effect of adding more NO_2 to the starting reaction mixture?

$$2NO_2\ (g) \rightleftharpoons N_2O_4\ (g)$$
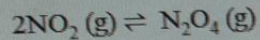
○ It would make the reaction more endothermic.
○ It would increase the final quantity of products.
○ It would make the reaction more exothermic.
○ It would decrease the final quantity of products.

Total questions in exam: **40** | Answered: **0**

Question No. 1

What is the molecular formula of a compound that has a molar mass of 116 g/mol and its empirical formula is C_2H_5?

- ○ C_6H_{15}
- ○ C_2H_5
- ○ C_8H_{20}
- ○ C_6H_{20}

Question No. 4

The main characteristic of all weak electrolyte solutions is that they _____

○ do not conduct electricity

○ completely ionize in aqueous solutions

○ do not dissolve in water

○ partially ionize in aqueous solutions

Total questions in exam: **40** | Answered: **0**

Question No. 5

The molarity (M) of an aqueous solution containing 22.5 g of sucrose ($C_{12}H_{22}O_{11}$) in 35.5 mL of solution is _____.

- ○ 1.85
- ○ 0.0657
- ○ 0.104
- ○ 3.52

Question No. 6

How many grams of CO_2 could be produced when 44 grams of C_3H_7COOH completely react with oxygen gas according to the reaction?

$$C_3H_7COOH + 5O_2 \rightarrow 4CO_2 + 4H_2O$$

- 44 g
- 22 g
- 133 g
- 88 g
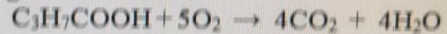
Total questions in exam: **40** | Answered: **0**

Question No. 9

Calculate the volume (in liter) of a solution that contains 3.12 moles of NaCl if the molarity of this solution is 6.67 M NaCl.

- ○ 2.823 L
- ○ 2.141 L
- ○ 0.208 L
- ○ 0.468 L

$$Volume = \frac{m}{M} = \frac{3.12}{6.67} = \boxed{0.468 L} \rightarrow \boxed{D}$$

Question No. 15

Provide the name of the compound below.
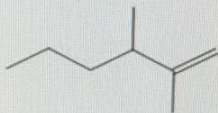
- ○ 2,3-dimethyl-1-hexene
- ○ 2,3-dimethyl-2-hexene
- ○ 4,5-dimethyl-5-hexene
- ○ 4,5-dimethyl-6-hexene

Question No. 12

The reaction for the decomposition of PCl_5 to chlorine and PCl_3 is shown below.

$$PCl_5 \text{ (s)} \rightleftharpoons PCl_3 \text{ (g)} + Cl_2(g)$$
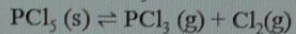
If the equilibrium concentrations are $[PCl_5] = 1.0\,M$, $[PCl_3] = 1.0\,M$, $[Cl_2] = 0.10\,M$, what is the value of the equilibrium constant?

- $K_C = 1.0 \times 10^2$
- $K_C = 1.0 \times 10^{-2}$
- $K_C = 1.0 \times 10^{-4}$
- $K_C = 1.0 \times 10^{-1}$

$$K_C = [\,1\,][\,0.1\,]$$

$$K_C = 0.1 = \boxed{1 \times 10^{-1}} \longrightarrow D$$

Consider the reaction: $2 \, SO_2(g) + O_2(g) \leftrightarrow 2 \, SO_3(g)$

If, at equilibrium at a certain temperature, $[SO_2] = 1.50$ M, $[O_2] = 0.120$ M, and $[SO_3] = 1.25$ M, what is the value of the equilibrium constant K_{eq}?

○ 0.14

○ 6.94

○ 5.79

○ 8.68

$$K_{eq} = \frac{[1.25]^2}{[1.5]^2[0.12]} = 5.29 \rightarrow C$$

Question No. 15

A compound that has a molar mass of 60 g/mol and an empirical formula of CH_2O , its molecular formula is:

- $CH_2O.$
- $C_2H_4O.$
- $C_2H_4O_2.$
- $C_3H_6O_3.$

What is the correct systematic name of the following compound?

$$CH \equiv C - CH(CH_2CH_3)(CH_2 - CH_2 - CH_3)$$

with branch: CH $\equiv$ C — CH — CH$_2$ — CH$_2$ — CH$_3$, and CH at position bearing CH$_2$ — CH$_3$
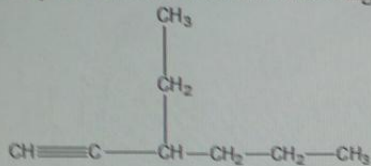
- ○ 3-ethyl-1-heptyne
- ○ 4-ethyl-5-hexyne
- ○ 3-ethyl-1-hexyne
- ○ 4-ethyl-1-hexyne
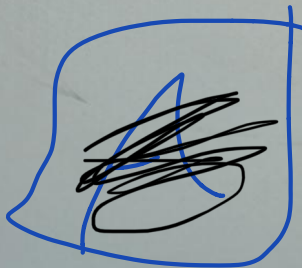
Which of the following molecular formulas is an "alkane"?

- ⦿ C_6H_{14}
- ⦿ C_6H_{12}
- ⦿ C_6H_{10}
- ⦿ C_6H_{16}

Alkane $= C_n H_{2n+2}$

$= C_6 H_{14}$

$\downarrow$

A

Save & Next حفظ واتلي

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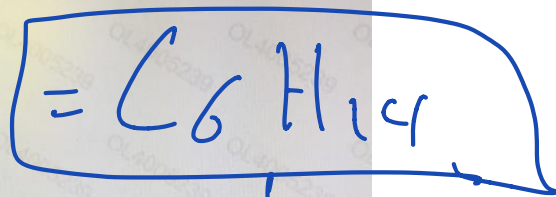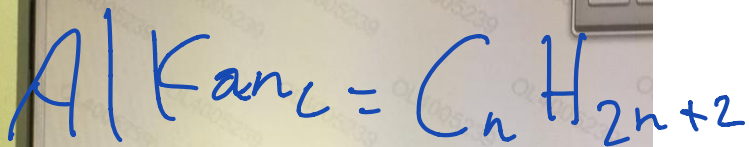
Question No. 11

The correct name for the compound CO is _____

○ carbon monoxide
○ carbon oxide
○ monocarbon monoxide
○ carbon dioxide

Save & Next حفظ والتالي

Question No. 27

After a chemical reaction reaches equilibrium, _____.

○ The amount of products is decreasing.

○ The amount of products is increasing.

○ The amount of reactants and products are constant.

○ The amount of reactants and products are equal.

In the reaction:

$$Cu_{(s)} + 2Ag^+_{(aq)} \rightarrow Cu^{2+}_{(aq)} + 2Ag_{(s)}$$

- $Cu_{(s)}$ is the reducing agent and $Ag^+_{(aq)}$ is reduced.
- $Ag^+_{(aq)}$ is the reducing agent and $Cu_{(s)}$ is reduced.
- $Ag^+_{(aq)}$ is oxidizing agent and $Cu_{(s)}$ is reduced
- $Cu_{(s)}$ is the oxidizing agent and $Ag^+_{(aq)}$ is oxidized.

Question No. 23

The chemical formula of the compound formed between sodium and fluorine is _____.

○ NaF_2

○ Na_2F

○ NaF

○ NaF_3
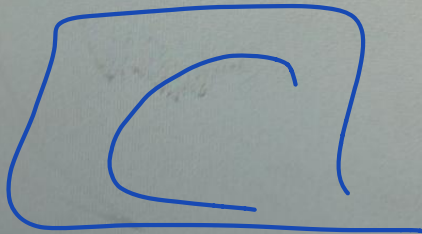
Question No. 12

The substance that causes the reduction of another substance is called:

- ⚪ anode
- ⚪ reducing agent
- ⚪ oxidizing agent
- ⚪ cathode

70:59

Number of main questions 40
Number of questions 40

| 26 | Answered | 14 | Not Answered |
| 0 | Not Visited | 0 | Partially Answered |
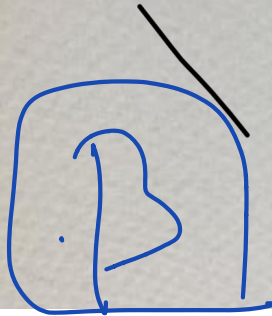
Question No. 5

Consider the following reaction at equilibrium, decreasing the pressure will _____.

$$2SO_2(g) + O_2(g) \rightleftharpoons 2SO_3(g)$$

- ○ shift the reaction to the right
- ○ shift the reaction to the left
- ● have no effect
- ○ cannot be determined, since the temperature is unknown

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	32	33	34	35
36	37	38	39	40

Calculator   Instructions

End Test

Save & Next حفظ والتالي

Question No. 26

The mass percent composition of sulfur in H_2S is:

○ 32.7%

○ 22.7%

○ 94.1%

○ 5.9%

$$\frac{3\,2}{?4} \times 100 = \boxed{94.1\%}$$

$$\boxed{C}$$

What is the IUPAC name of this compound?

$$CH_3CH_2CHCH_2CHCH_3$$

with CH_2CH_3 group above and $CH_2CH_2CH_2CH_2CH_3$ group below.
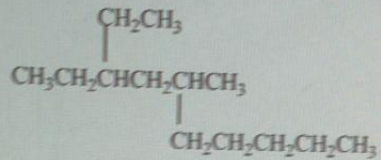
○ 3-ethyl-5-methyldecane

○ 1-octylpentane

○ 3-ethyl-2-pentylhexane

○ 8-ethyl-6-methyldecane

Save & Next مذرة لي
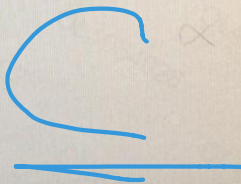
Question No. 34

What is the correct equilibrium constant expression for the following reaction?

$$2\,Cu(s) + O_2(g) \rightarrow 2\,CuO(s)$$
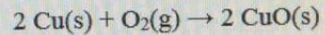
- ○ $K_{eq} = [CuO]^2 / [O_2]$
- ○ $K_{eq} = [CuO]^2 / [Cu]^2[O_2]$
- ○ $K_{eq} = 1 / [O_2]$
- ○ $K_{eq} = [O_2]$

Total questions in exam: **40** | Answered: 0

Question No. 3

The compound below is an

$$CH_3$$
$$|$$
$$CH_3-C-NH_2$$
$$|$$
$$H$$

○ acid
○ amide
○ ester
○ amine

Save & Next نمبر والی

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Online Evaluation System

Total questions in exam: **40** | Answered: 11

Question No. 14

The following structure corresponds to a .... alcohol.

- Primary
- Tertiary
- Quaternary
- Secondary

Save & Next

Total questions in exam: **40** | Answered: 14

Question No. 26

How many Lithium (Li) atoms are contained in 97.9 g of Lithium?

- 8.49×10^{24} Li atoms
- 5.90×10^{25} Li atoms
- 4.27×10^{22} Li atoms
- 7.09×10^{21} Li atoms

Save & Next حفظ رقابی

Question No. 22

The name of the chemical compound Cu_2CO_3 is:

- copper(II) carbonate
- copper(III) carbonate
- copper(I) carbonate
- copper carbonate

Total questions in exam: **40** | Answered: **18**

Question No. 34

What is the oxidation number of sulfur in H_2SO_4?

- -2
- +4
- +6
- +2

Save & Next

$$H_2^{+} \overset{+6}{S} O_4^{-2}$$

C
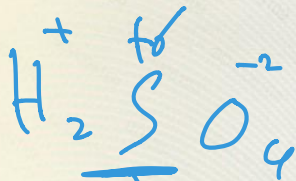
Question No. 38

Consider the following reaction at equilibrium. What effect will increasing the temperature have on the system?
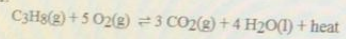
$$C_3H_8(g) + 5\ O_2(g) \rightleftharpoons 3\ CO_2(g) + 4\ H_2O(l) + heat$$

○ The reaction will shift to the right in the direction of products.
○ The equilibrium constant will increase.
○ The reaction will shift to the left in the direction of reactants.
○ More CO_2 will be formed.

Save & Next رقم

What is the oxidation number of nitrogen in NO_3^{-1}?

- ○ 0
- ○ -3
- ○ -5
- ○ +5

Save & Next رابط التالي

Question No. 5

What is the chemical formula of the product formed by the reaction between aluminum and oxygen?

- AlO
- Al_3O_2
- Al_2O_3
- Al_3O

$$Al^{+3} \quad O^{-2} \longrightarrow Al_2O_3$$
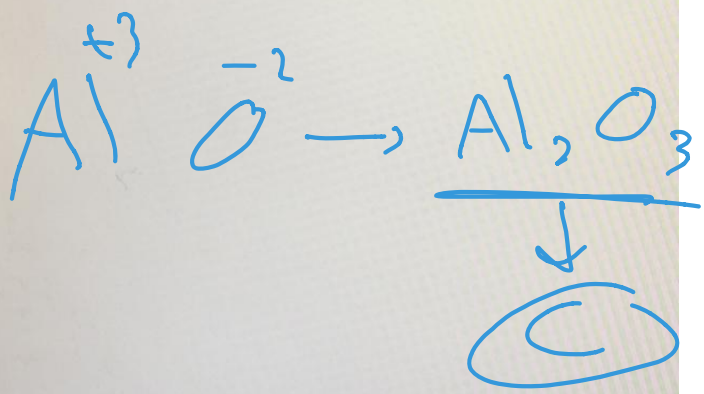
What are the correct coefficients needed to balance the reaction below?

$$N_2H_4 + H_2O_2 \rightarrow N_2 + H_2O$$
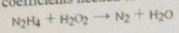
- 2, 4, 2, 8
- 1, 1, 1, 1
- 1, 4, 1, 4
- 1, 2, 1, 4

Save & Next حفظ و18

HP Compaq LE1711

Which of the following is the electron dot formula (Lewis structure) for an atom of oxygen?
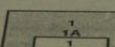
(a) $O\cdot$ (b) $\underset{\cdot}{O}\cdot$ (c) $\cdot\underset{\cdot}{O}\cdot$ (d) $\cdot\overset{\cdot\cdot}{\underset{\cdot\cdot}{O}}\colon$

- (c)
- (b)
- (d)
- (a)

Save & C

HP Compaq LE1711

Question No. 13

Which of the following pairs of systematic names and common names is correctly matching?

- ○ toluene = hydroxybenzene
- ○ aniline = aminobenzene
- ○ acetylene = ethene
- ○ phenol = methylbenzene

Save & Next حفظ والتالي

HP Compaq LE1711

Provide the name of the compound below.

- methylcyclohexane
- ethylcyclopentane
- methylcyclopentane
- methylcyclopropane

Scientific Calculator

M

| mod | ● Deg ○ Rad | | | | MC | M |

sinh	cosh	tanh	Exp	(	)	←
sinh⁻¹	cosh⁻¹	tanh⁻¹	$\log_2 x$	ln	log	7
π	e	n!	$\log_y x$	e^x	10^x	4
sin	cos	tan	x^y	x^3	x^2	1

Save &

Save & Next حفظ و التالي

HP Compaq LE1711

١١:٠٢ ص

Total questions in exam: **40** | Answered: 1

Question No. 11

In aqueous solutions, the conjugate base of HF is _____

- H^+
- F^-
- H_2O
- OH^-

١١:٠٢ ص

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Question No. 3

The correct name for the acid HBr is _____ acid

○ hydrogen bromate
○ hydrogen bromine
○ hydrobromic
○ hydrogen bromide

Total questions in exam 40

Question No. 4

Express the equilibrium constant for the following reaction.

$$H_2(g) + Br_2(g) \rightleftharpoons 2 HBr(g)$$

١١:٠٣

Save & Next حفظ والتالي

MKCL OES

Chemistry_

Total questions in exam 40 | Answered: 0

Question No. 7

The ability of an atom to attract the shared electrons in a covalent bond is called _____

○ bonding ability
○ Bond energy
○ electronegativity
○ polarity
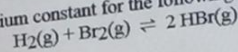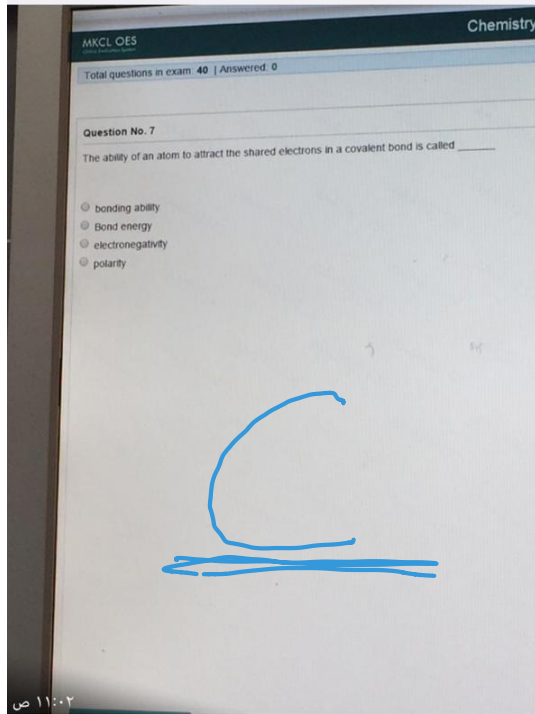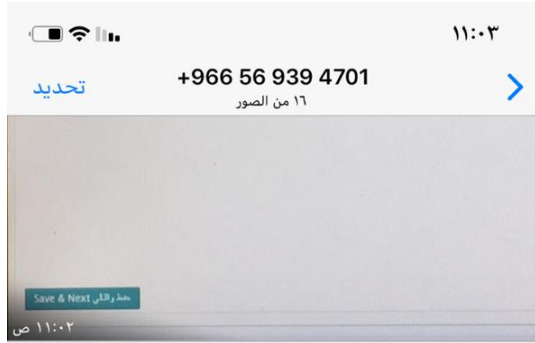
Question No. 8

Question No. 18

What is the molecular formula of a compound that has a molar mass of 180 g/mol and its empirical formula is CH_2O?

- $C_2H_2O_2$
- $C_4H_8O_4$
- $C_5H_{10}O_5$
- $C_6H_{12}O_6$

Save & Next حفظ والى

Total questions in exam: **40** | Answered: **35**

Question No. 21

What is the term for the concentration expression that relates the moles of solute dissolved in each liter of solution?

- mass/mass percent (m/m %)
- molality (m)
- parts per million (ppm)
- molarity (M)

Save & Next حفظ والتالي

Question No. 33

What is the molarity of $FeCl_3$ in a solution prepared by dissolving 10.0 g of $FeCl_3$ in enough water to make 275 mL of solution?

- 0.224 M
- 4.46 M
- 4.46×10^3 M
- 2.24×10^{-4} M

$$\frac{0.062}{0.275} = 0.224 \rightarrow \boxed{A}$$

Save & Next حفظ و قائم

According to Bronsted-Lowry definition, which acid is incorrectly matched with its conjugate base? (Acid / conjugate Base)

- HCO_3^- / CO_3^{2-}
- H_2F^+ / HF
- H_3O^+ / OH^-
- HCl / Cl^-

Save & Next حفظ و التالي

Question No. 4

What is the name of the following compound?
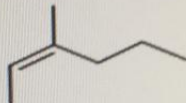
- ○ 4-ethyl-4-hexene
- ○ 3-methylenehexane
- ○ 3-methyl-3-hexene
- ○ 3-methyl-2-hexene

Save & Next حفظ والتالي

Question No. 1

An aqueous solution of _____ is considered as strong electrolyte, thus, it can conduct electricity.

○ CO_2

○ $C_6H_{12}O_6$

○ LiCl

○ C_8H_{18}

Save & Next حفظ والتالي

Question No. 7

Identify the Bronsted-Lowry conjugate acid in the following reaction.

$$H_2O + CO_3^{2-} \rightarrow HCO_3^- + OH^-$$

○ H_2O

○ OH^-

○ HCO_3^-

○ CO_3^{2-}

Save & Next حفظ واتلي
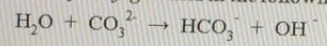
Total questions in exam: **40** | Answered: **23**

Question No. 4

What is the term for a bond in which a pair of electrons is shared equally?

- ⚪ polar covalent bond
- ⚪ Ionic bond
- ⚪ electrovalent bond
- ⚪ nonpolar covalent bond

Total questions in exam: **40** | Answered: 17

Question No. 16

How many grams of NaCl are there in 55.0 mL of a 1.90 M aqueous solution of NaCl?

○ 0.105
○ 3.21
○ 12.2
○ 6.11

Save & Next محفوظ والتالي

What is the molecular formula of a compound that has a molar mass of 68 g/mol and its empirical formula is HO?

- H_2O
- H_2O_3
- H_4O_4
- H_2O_4

What is the family of this organic compound?

$$CH_3-CH_2-\overset{\displaystyle O}{\overset{\displaystyle \|}{C}}-H$$
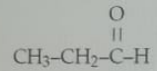
○ aldehyde

○ ketone

○ carboxylic acid

○ ester

Question No. 28

Which of the following pairs of species is NOT a conjugate acid-base pair?

- ○ H_2O and OH^-
- ○ H_2SO_4 and HSO_4^-
- ○ NH_3 and NH_2
- ○ HSO_4^- and SO_4^{2-}

Question No. 36

If the reaction is endothermic, which of the following is always true?

○ the reaction rate is fast
○ the reaction takes in heat
○ the reaction gives out heat
○ the reaction rate is slow

Question No. 22

Which of these organic compounds is "unsaturated"?

- C_3H_8
- CH_3OH
- CH_4
- C_5H_{10}

Save & Next حفظ و التالي

Question No. 10

The mass% of H in Eethane (C_2H_6) is _____.

- ◯ 20.1
- ◯ 74.9
- ◯ 79.9
- ◯ 4.0

Question No. 11

What mass (g) of NaBr is contained in 0.25 L of a sodium bromide solution that has a molarity of 1.20 M?

- 2.32 g
- 30.9 g
- 37.3 g
- 4.93 g

Save & Next حفظ والتالي

Question No. 33

The oxidation number of iodine in KIO_4 is

- +1
- -1
- -7
- +7
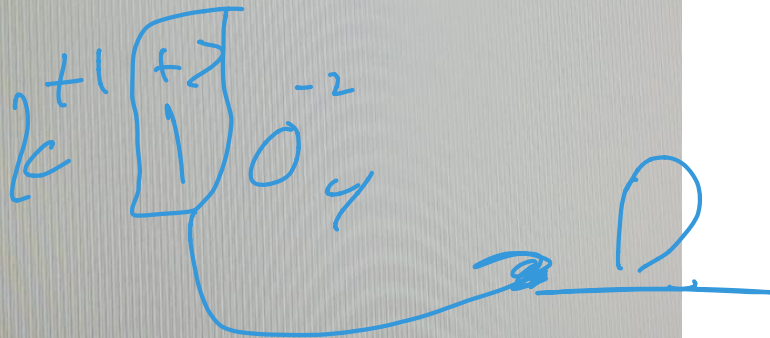
$$K^{+1} \boxed{I^{+7}} O^{-2}_4$$

In the following reaction, what is the effect on the direction of the reaction if more SO_3 is added to the reaction mixture?

$$2SO_2 \text{ (g)} + O_2 \text{ (g)} \rightleftharpoons 2SO_3 \text{ (g)}$$
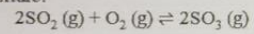
○ The equilibrium shifts to produce more products.

○ The rate of formation of products is increased.

○ The position of the equilibrium remains unchanged.

○ The equilibrium shifts to produce more reactants.

Save & Next حفظ واقلی

Compaq LE1711

Total questions in exam: **40** | Answered: **31**

Question No. 15

What is the type of the following alcohol?

$$CH_3-CH_2-\underset{\underset{H}{|}}{\overset{\overset{OH}{|}}{C}}-CH_3$$
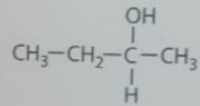
- Primary
- Secondary
- Tertiary
- Quaternary

Refer to the equilibrium shown below. Which of the following will shift the reaction to the right?

$$CH_4 (g) + 2O_2 (g) \rightleftharpoons CO_2 (g) + 2H_2O (g)$$

- adding excess oxygen
- increasing the pressure
- removing carbon dioxide as soon as it is formed
- adding O_2 and removing CO_2

Save & Next حفظ والتالي
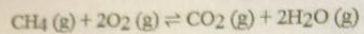
Compaq LE1711

Which family does the following organic compound belong to?
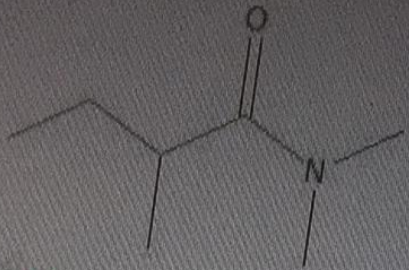
- amine
- ether
- carboxylic acid
- amide
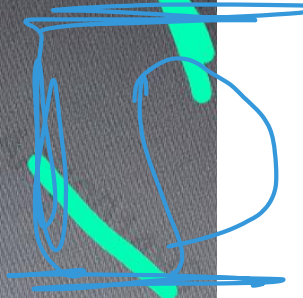
To which family does the following organic compound belong?
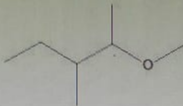
○ alcohol

○ aldehyde

○ carboxylic acid

○ ether

H_2N- ⬡ $=O$
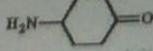
- ketone and amine
- aldehyde and amine
- aldehyde and ketone
- carboxylic acid and amine

HP Compaq LE1711

Total questions in exam: **40** | Answered: 27

Question No. 12

Calculate the mass percent composition of phosphorous in K_3PO_4.

- 30.2 %
- 26.75%
- 55.3 %
- 14.6 %

Save & Next حفظ واتقلي

Question No. 15

Provide the name of the compound below.
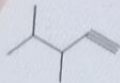
- 2,3–dimethyl-5-pentyne
- 3,4–dimethyl-1-pentyne
- 2,3–dimethyl-4-pentyne
- 3,4–dimethyl-2-pentyne

Save & Next حفظ والتالي

1
8
15
22
29
36

Total questions in exam: **40** | Answered: **27**

Question No. 21

How many moles of cesium (Cs) are contained in 595 kg of cesium?

- 1.26×10^3 moles Cs
- 4.48×10^3 moles Cs
- 7.91×10^4 moles Cs
- 2.23×10^2 moles Cs

Save & Next حفظ والتالي

Question No. 23

What is the coefficient of chlorine gas after balancing the following equation?
$$\_\_Fe(s) + \_\_Cl_2(g) \rightarrow \_\_FeCl_3(s)$$

- 4
- 1
- 3
- 2

Save & Next حفظ والتالي

Question No. 24

The reaction that requires thermal energy to proceed is known as _____ reaction.

- ○ oxidation
- ○ endothermic
- ○ isothermic
- ○ exothermic

Save & Next حفظ واتالي

Question No. 35

The combustion of ammonia in the presence of excess oxygen yields NO_2 and H_2O:

$$4\,NH_3\,(g)\ +\ 7\,O_2\,(g)\ \rightarrow\ 4\,NO_2\,(g)\ +\ 6\,H_2O\,(g)$$

The combustion of 43.9 g of ammonia produces _____ g of NO_2.

- 43.9
- 2.58
- 119
- 178

Save & Next حفظ والتالي

MKCL OES

Total questions in exam: **40** | Answered: **28**

User :MC4078981

Number of main qu
Number of questio

28	Answered
0	Not Visited

Question No. 38

What is the final molarity of H_2SO_4 solution, if 240mL of 4M H_2SO_4 was diluted to a final volume of 0.5 L?

○ 0.96 M

○ 1.92 M

○ 1.34 M

○ 1.60 M

1	2	3
8	9	10
15	16	17
22	23	24
29	30	31
36	37	38

Calcul

Save & Next حفظ والتالي

Total questions in exam: **40** | Answered: **27**

Question No. 20

In an oxidation-reduction reaction, the reduced substance always _____

○ shows gain of electrons.

○ takes on oxygen atoms.

○ gives up hydrogen atoms.

○ shows loss of electrons.

Save & Next حفظ والتالي

What is the oxidation number of carbon in CO_3^{2-} ?

- ○ +2
- ○ +6
- ○ +4
- ○ -2

$$\left[C \overset{-2}{O_3} \right]^{-2}$$

$\boxed{-2} = C$ شحنة على مجموع الأكسجين ✳

$$\longrightarrow X + (-2 \times 3) = -2$$

$$x - 6 = -2$$

$$x = -2 + 6$$

$$\boxed{x = +4}$$

$\boxed{C}$

MKCL OES

Chemistry_FT_
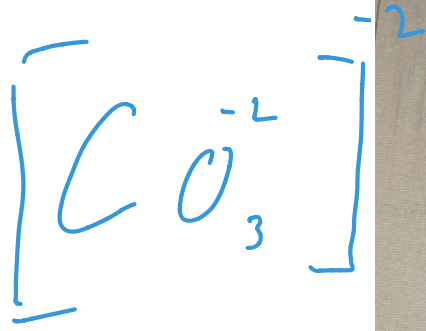
Total questions in exam: **40** | Answered: **27**

Question No. 26

The systematic name for the chemical compound Na_2S is:

○ sodium sulfide
○ sodium(I) sulfide
○ sodium(II) sulfide
○ sodium monosulfide

Save & Next حفظ والتالي

What is the name of compound has the following general formula?

$$\underset{\text{RCOH}}{\overset{\displaystyle \underset{\|}{\text{O}}}{}}$$
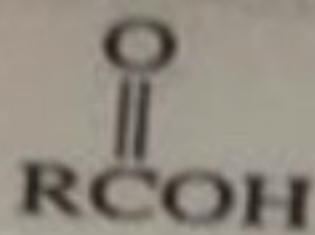
- ○ aldehyde
- ○ ester
- ○ carboxylic acid
- ○ phenol

Save & Next

Question No. 5

The most correct name for the compound SBr_6 is:

- sulfur bromide
- monosulfur hexabromide
- sulfur hexabromide
- monosulfur heptabromide

Question No. 2

_____ are the most reactive hydrocarbons.

- Cycloalkanes
- Alkenes
- Alkynes
- Alkanes

What is the oxidation number of metallic sodium in the elemental state?

- +2
- +1
- 0
- +3
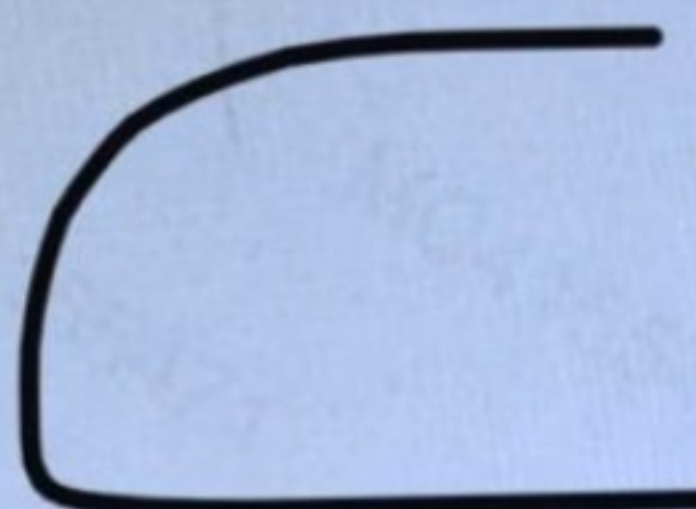
Save & Next

Provide the name of the compound below.
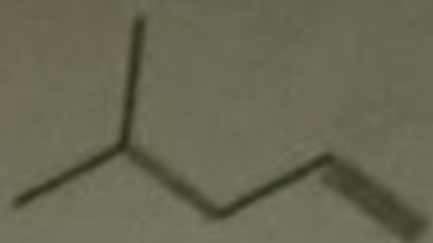
- 4-methyl-4-pentene
- 2-methyl-1-pentene
- 2-methyl-4-pentene
- 4-methyl-1-pentene

Save & Next

10.10.64.240

Question No. 29

The "alkyne" has _____ fewer hydrogen atoms than the corresponding "alkane".

- 4
- 2
- 0
- 6

Save & Next

Consider the following reaction at equilibrium, decreasing the pressure will _____.

$$2SO_2(g) + O_2(g) \rightleftharpoons 2SO_3(g)$$
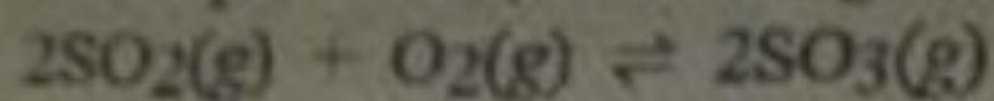
- ⦿ have no effect
- ⦿ shift the reaction to the left
- ⦿ shift the reaction to the right
- ⦿ cannot be determined, since the temperature is unknown

ve & Next

In the following reaction, which substance is acting as a Brønsted-Lowry base?
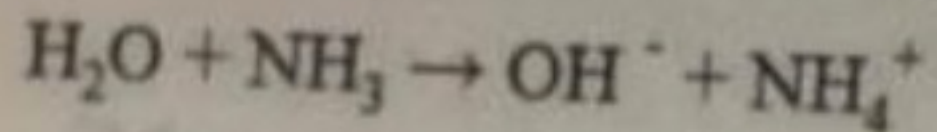
$$H_2O + NH_3 \rightarrow OH^- + NH_4^+$$

- H_2O
- OH^-
- NH_4^+
- NH_3

D

What is the correct equilibrium constant expression for the following reaction?

$$2\ Cu(s) + O_2(g) \rightarrow 2\ CuO(s)$$
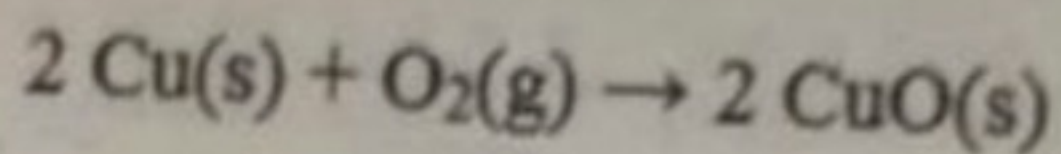
- $K_{eq} = [CuO]^2 / [Cu]^2[O_2]$
- $K_{eq} = [O_2]$
- $K_{eq} = [CuO]^2 / [O_2]$
- $K_{eq} = 1 / [O_2]$

Save & Next

What is the number of silver (Ag) atoms are there in a 100 gram ring made of pure silver? (given that Molar Mass of Ag = 107.86 g/mol)

- 100 atoms.
- 5.58 x 10^{23} atoms.
- 6.02 x 10^{23} atoms.
- 6.49 x 10^{23} atoms.

Save & Next

Question No. 1

Express the equilibrium constant for the following reaction.

$$H_2(g) + Br_2(g) \rightleftharpoons 2\,HBr(g)$$
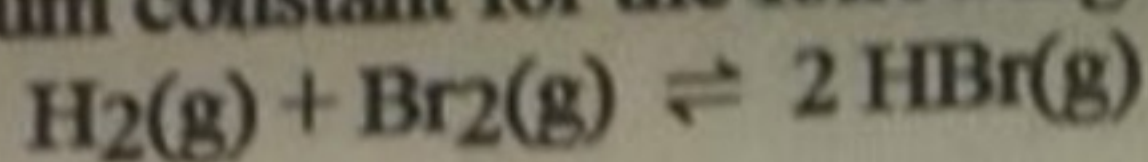
- $K = \dfrac{[HBr]^2}{[H_2][Br_2]}$

- $K = \dfrac{[HBr]}{[H_2]^{1/2}[Br_2]^{1/2}}$

- $K = \dfrac{[H_2][Br_2]}{[HBr]^2}$

- $K = \dfrac{[H_2]^2[Br_2]^2}{[HBr]^4}$

Save & Next

Question No. 4

What is the family of this organic compound?

$$CH_3-\overset{\overset{\displaystyle O}{\|}}{C}-O-CH_3$$
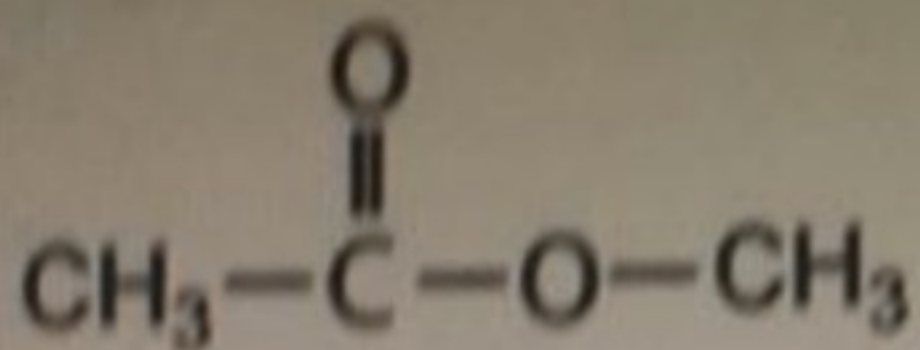
- ester
- aldehyde
- ketone
- carboxylic acid

Save & Next

What is the maximum number of covalent bonds that a chlorine atom can form?

- 0
- 1
- 4
- 3
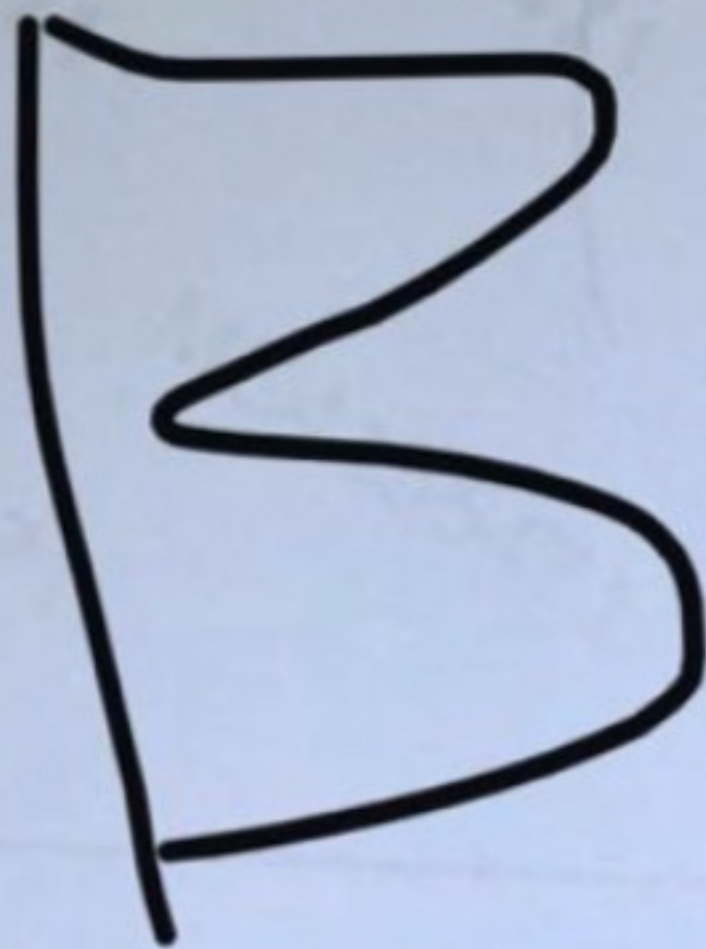
Save & Next

Calculate the oxidation number of sulfur in sodium metabisulfite, $Na_2S_2O_5$.

- +4
- +2
- -2
- +6

A

Save & Next

Consider the reaction below at equilibrium. What is the effect of increasing pressur

$$N_2(g) + 3 H_2(g) \rightleftharpoons 2 NH_3(g)$$
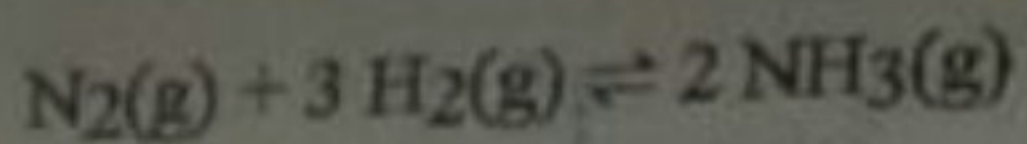
○ Shifts to left
○ Shifts to right
○ No change
○ Gives more reactants

Save & Next

084 240

How many molecules of CO_2 could be produced when 2 moles of C_2H_6O completely react with oxygen gas according to the reaction?

$$C_2H_6O + 3 O_2 \rightarrow 2 CO_2 + 3 H_2O$$
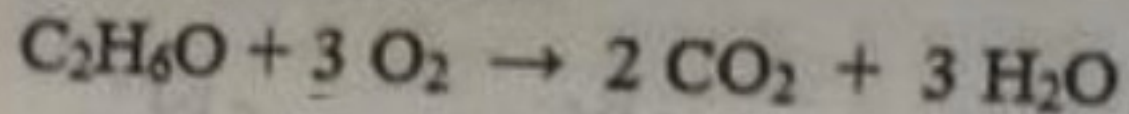
- 12.04 x 10^{23} molecules
- 2 molecules.
- 24.08 x 10^{23} molecules.
- 4 molecules.

Question No. 10

A⁻   A   A⁺

According to the Arrhenius definition, when H_2SO_4 is dissolved in water, it would act as _____ .

○ a base.

○ an acid.

○ a source of hydroxide ions.

○ a proton acceptor.

Save & Next

Identify the conjugate base of HPO_4^{2-} in the reaction

$$HCO_3^- + HPO_4^{2-} \leftrightarrow H_2CO_3 + PO_4^{3-}$$
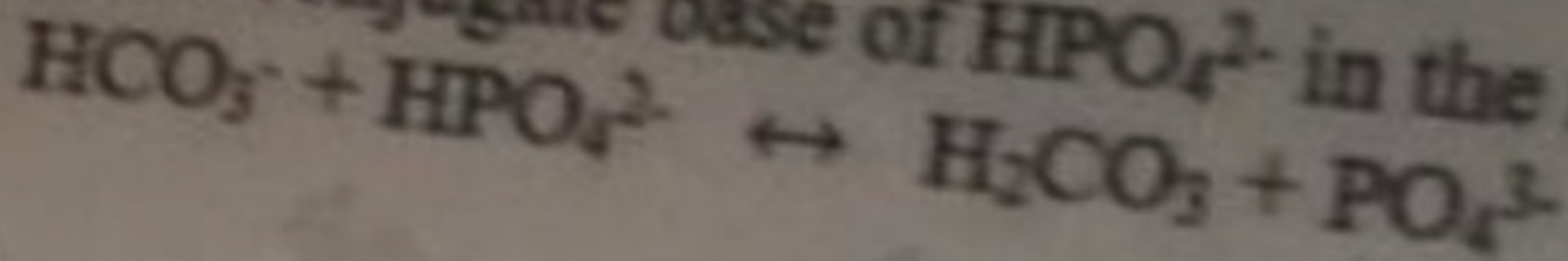
- H_2O
- H_2CO_3
- HCO_3^-
- PO_4^{3-}

What is the correct name of the following compound?

$$CH_3 - CH - CH_3$$
$$\quad\quad |$$
$$\quad\quad Br$$
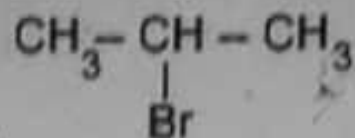
- bromopropane
- 2-bromobutene
- 2-bromopropane
- 2-bromobutyl
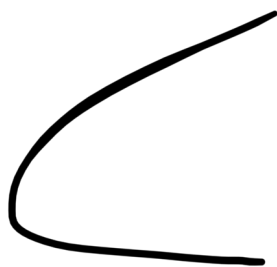
Which of these is the systematic name of the corresponding following structure?

$$CH_3-CH_2-CH-CH_3$$
$$|$$
$$CH=CH_2$$
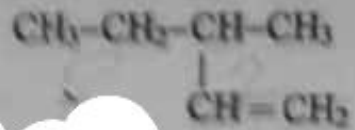
- 3-methylpentene
- 3-methyl-1-hexene
- 2-ethylbutane
- 3-methyl-1-pentene

D

3-methyl-1-pentene

Save & Next

Question No. 36

Which of the following substances gives a _srong electrolyte_?

- H_2O
- N_2
- $MgCl_2$
- CH_4

Save & Next

HP Compaq LE711

Which of the following is the electron dot formula (Lewis struc...

oxygen?

(a) $O \cdot$

(b) $\overset{\cdot}{O} \cdot$

(c) $\cdot \overset{\cdot}{O} \cdot$

(d) $\cdot \overset{\cdot}{\underset{\cdot \cdot}{O}} :$
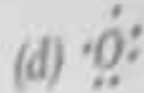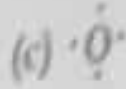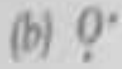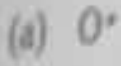
○ (a)

○ (b)

○ (d)

○ (c)

Save & Next

Question No. 37

What is the oxidation number of nitrogen in NH_3?

- 0
- -1
- -3
- -2

Save & Next

For the following equilibrium reaction, what is the correct form of the equilibrium constant?

$$C\ (s) + 2\ H_2\ (g) \rightleftharpoons CH_4\ (g)$$
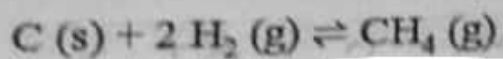
$K_C = [C][H_2]^2$

$K_C = [CH_4]/[H_2]^2$

$K_C = [CH_4]/[C]\ [H_2]^2$

$K_C = [H_2]^2[C]/[CH_4]$

Which element is *reduced* in the following reaction?

$$Cu + 2H_2SO_4 \rightarrow CuSO_4 + SO_2 + 2H_2O$$
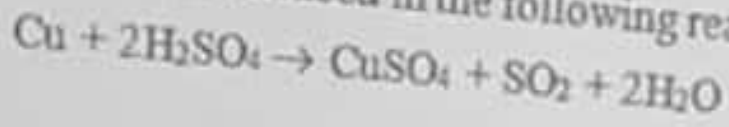
○ Cu

◉ H

○ S

○ O

Save & Next

Question No. 18

If a rain-water sample has a pH = 5.8, this sample is

- strongly acidic
- weakly basic
- neutral
- weakly acidic

D

Which of the following pairs of systematic names and common names is correctly matching?

- toluene = hydroxybenzene
- phenol = methylbenzene
- aniline = aminobenzene
- acetylene = ethene

HP Compaq LE1711
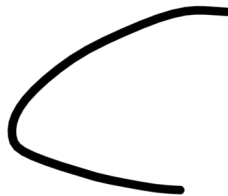
Total questions in exam: **40** | Answered: **14**

Question No. 30

The coefficients (a,b,c,d) needed to balance the equation below are:

$$a\ Mg(OH)_2 + b\ H_3PO_4 \rightarrow c\ Mg_3(PO_4)_2 + d\ H_2O$$

- ○ (3,1,1,6)
- ○ (3,1,2,6)
- ○ (3,2,1,6)
- ○ (3,2,2,6)

Question No. 27

Which of these is the systematic name for the compound represented below?

$$H-\overset{\displaystyle H}{\underset{\displaystyle H}{C}}-\overset{\displaystyle H}{\underset{\displaystyle Br}{C}}-\overset{\displaystyle H}{\underset{\displaystyle H}{C}}-Br$$
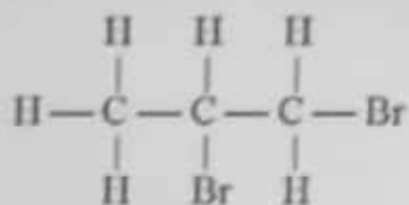
- 1,2-dibromopropane
- 2,3-dibromopropane
- 1,2-propane dibromide
- 2,3-dibromopentane

A

أ. ساميه النجار

A

Which family does the following organic compound belong to?
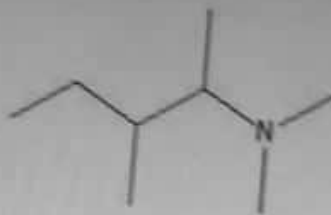
- amine
- aldehyde
- carboxylic acid
- ether

A

Save & Next

Question No. 35

Which molecule contains the weakest carbon-carbon bond?

- ⊙ HC≡CH
- ⊙ $H_2C=CH_2$
- ⊙ H_3C-CH_3
- ⊙ $F_2C=CF_2$

Which of the following formulas represents an unsaturated organic compound?

- ○ $CH_3-CH_2-CH_3$
- ○ $CH_3-O-CH_2-CH_3$
- ○ $CH_3-CH=CH_2$
- ○ CH_3-CH_2-OH

The systematic name for the compound represented below is

$$CH_2-CH_3$$
$$|$$
$$CH_3-CH_2-CH_2-CH-CH-CH_3$$
$$|$$
$$CH_2$$
$$|$$
$$CH_2-CH_3$$
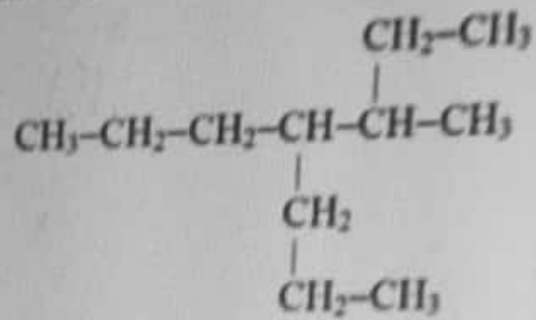
- 4,5-diethylheptane.
- 3-propyl-4-ethylhexane.
- 3-methyl-4-propylheptane.
- 3-ethyl-4-propylhexane.

Save & Next

Question No. 21

Oxidation is the_____ and reduction is the_____

- loss of electrons, gain of electrons
- loss of oxygen, gain of electrons
- gain of oxygen, loss of electrons
- gain of electrons, loss of electrons

A

The most correct name for the compound CS_2 is:

- carbon sulfide
- carbon trisulfide
- monocarbon disulfide
- carbon disulfide

D

Provide the name of the compound below.

- 3,3-dimethyl-1-pentene
- 3,3-dimethyl-1-pentyne
- 3,3-dimethyl-1-pentane
- 3,3-dimethyl-4-pentene

A

Save

Total questions in exam: 40 | Answered: 2

What is the correct equilibrium constant expression for the following reaction?
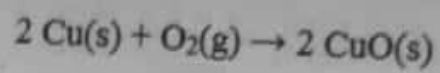
$$2\ Cu(s) + O_2(g) \rightarrow 2\ CuO(s)$$

- $K_{eq} = [CuO]^2 / [Cu]^2[O_2]$
- $K_{eq} = [O_2]$
- $K_{eq} = [CuO]^2 / [O_2]$
- $K_{eq} = 1 / [O_2]$

Save & Next

Total questions in exam: 40 | Answered: 2

The molecular formula for "cyclopropane" is _____

- C_3H_8
- C_3H_6
- C_7H_{16}
- C_7H_{12}

A

Question No. 2

Predict which of the following compound has an ionic bond.

○ CuF

○ IBr

○ NO

○ ICl

Consider the following reaction at equilibrium, what is the effect of adding more oxygen gas to the initial reaction mixture?

$$N_2(g) + O_2(g) \rightleftharpoons 2NO(g)$$
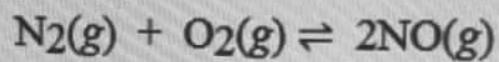
○ The equilibrium is not affected.

○ Extra catalyst is required to reach equilibrium.

○ The equilibrium shifts to produce more NO.

○ The equilibrium shifts to produce more N2.

Question No. 9

A strong electrolyte is a substance that _____ in aqueous solutions:

- completely ionizes
- partially ionizes
- reacts
- does not ionize

Question No. 15

What volume (mL) of a concentrated solution of magnesium chloride (9.00 M) must be diluted to make 350 mL of 2.75 M solution of magnesium chloride?

- 2.75
- 107
- 45.0
- 50.0

$$B \quad 106.9 = \frac{350 \times 2.75}{9}$$

Which of the following compounds gives a strong electrolyte aqueous solution?

- H_2SO_4
- CH_3OH
- $C_6H_{12}O_6$
- CH_4

Question No. 22

What is the conjugate acid of OH$^-$?

- O_2^{2-}
- H_3O^+
- H_2O
- O^-

Question No 37

What is the family of this organic compound?

$$H-\overset{\overset{\displaystyle O}{\|}}{C}-OH$$

- aldehyde
- ester
- ketone
- carboxylic acid

Question No. 7

The name of the chemical compound CuF is _____

- ◉ Copper(II) fluoride
- ◉ Copper(I) fluoride
- ◉ Copper fluoride
- ◉ Copper(III) fluoride

MKCL OES

Question No. 9

How many sulfur dioxide molecules (SO_2) are there in 1.80 mol of sulfur dioxide?

- 1.08×10^{24}
- 6.02×10^{24}
- 1.80×10^{24}
- 1.08×10^{23}

Save & Next

MKCL OES

Question No. 40

The following structure corresponds to a .... alcohol.

OH
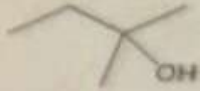
○ Quaternary
○ Primary
○ Tertiary
○ Secondary

Save & Next

HP LE1901w

Tertiary

Question No. 19

What is the percent yield for a reaction if its theoretical yield is 144 g and its actual yield is 46 g?

- ◯ 60%
- ◉ 22%
- ◯ 57%
- ◯ 32%

$$\frac{46}{144} \times 100$$

$$= 31.9$$

Save & Next سنذر اللي

Question No. 19

Give the direction of the reaction, if Kc = 1.

○ The reverse reaction is favored.

○ The forward reaction is favored.

○ If the temperature is raised, then the reverse reaction is favored.

○ Neither direction is favored.

Save & Next حفظ رقم

HP Compaq LE1711

CCl₃

3 Cl   2AlCl

AlCl₃

BF₂

Consider the reaction below at equilibrium. What effect will adding more H2S have on the system?

$$2 H_2S(g) + 3 O_2(g) \rightleftharpoons 2 H_2O(g) + 2 SO_2(g)$$
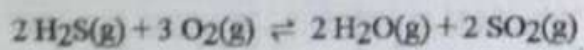
○ The reaction will shift to the direction of products

○ The equilibrium constant will increase

○ The reaction will shift to the left.

○ The equilibrium constant will decrease

Save & Next حفظ والتالي

Question No. 43

When heat (q) has negative value, this means that

- The work (w) = 0.
- The surrounding loses thermal energy.
- The system gains thermal energy.
- The system loses thermal energy.

Save & Next خطر وڭی

Question No. 26

Which of the following is true if the pH of a solution changes from 5 to 7?

- [H^+] increases
- [H^+] decreases
- K_w decreases
- K_w increases

Save & Next طكی كـ

Question No. 5

100 g FeO contains _____ moles of FeO

- 1.39
- 5.32
- 3.54
- 1.15

$$n = \frac{g}{molar\ mass}$$

$$n = \frac{100}{56+16} = \boxed{1.39}$$

Save & Next خفظ والتالي

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$\rightarrow 2AlCl_3$

2 AlCl

Al

In the following equation identify the Brønsted-Lowry acid:
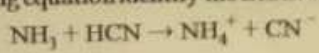
$$NH_3 + HCN \rightarrow NH_4^+ + CN^-$$

- CN^-
- NH_3
- HCN
- NH_4^+

Save & Next خطوة التالية

HP Compaq LE1711

Question No. 6

How many moles of $(NH_4)_2S$ are there in 150 g of $(NH_4)_2S$?

- ○ 1.56
- ○ 2.21
- ○ 1.5
- ○ 1.04

$$n = \frac{g}{mm}$$

$$n = \frac{150}{(14 \times 2) + (1 \times 8) + 32}$$

$$n = 2.2$$

B

Save & Next

Question No. 42

The molecular formula for "hexene" is _____

- C_3H_6
- C_6H_{12}
- C_7H_{16}
- C_6H_{14}

B

In the following reaction, what is the effect of adding more NO_2 to the starting reaction mixture?

$$2NO_2 \text{ (g)} \rightleftharpoons N_2O_4 \text{ (g)}$$

- It would make the reaction more exothermic
- It would decrease the final quantity of products
- It would make the reaction more endothermic
- It would increase the final quantity of products

Save & Next ‫التالي‬ ‫حفظ‬

Question No. 23

The reaction that requires thermal energy to proceed is known as _____ reaction

- oxidation
- exothermic
- isothermic
- endothermic

heat

system (reaction) need

Save & Next

What is the IUPAC name for: $CH_3-CH_2-CH_2-CH_2-CH_2-CH_3$?

- butane
- pentane
- hexane
- heptane

The number of grams of NaCl (molar mass = 58.5 g/mol) that are required to make 250 mL of a 2 M solution is:

$\frac{1}{4}$ L

- 29.2 g
- 14.6 g
- 58.5 g
- 20.5 g

A

$M = \dfrac{\text{mole of solute}}{\text{L of solution}}$

$n = M \times L$

$n = \dfrac{1}{4} \times 2 = \dfrac{1}{2}$

$g = n \times mm$

$g = 58.5 \times \dfrac{1}{2} = 29.25$

45 g CuO contains _____ moles of CuO.

- ⊙ 0.57
- ⊙ 1.34
- ⊙ 4.32
- ⊙ 0.97

Question No. 35

What is the name of this compound?

$$\text{—CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$$
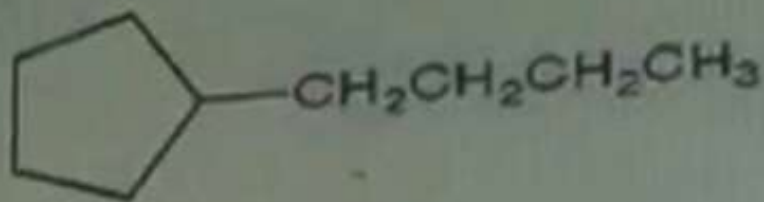
- cyclopentyl butane
- prpoyl cyclopentane
- butyl cyclobutane
- butyl cyclopentane

What is the equilibrium constant expression for the following reaction?

$$2\ CH_4(g) + O_2(g) \rightleftharpoons 2\ CO(g) + 4\ H_2(g)$$
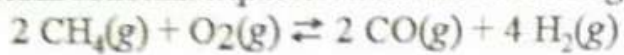
- $K_c = [CO][H_2] / [CH_4][O_2]$
- $K_c = [CO]^2[H_2]^4 / [CH_4]^2[O_2]$
- $K_c = [CH_4][O_2] / [CO][H_2]$
- $Kc = [CH_4]^2[O_2] / [CO]^2[H_2]^4$

Save & Next حفظ والتالي

MKCL OES

Question No. 1

The coefficients (a,b,c) needed to balance the equation below are:

$$a\ Li + b\ Cl_2 \rightarrow c\ LiCl$$
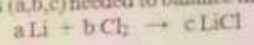
- (1,2,1)
- (1,2,2)
- (2,1,2)
- (2,2,1)

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What is the name of compound has the following general formula?

$$R-\overset{\overset{\displaystyle O}{\|}}{C}-R'$$
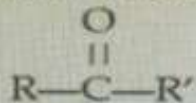
○ aldehyde

○ ketone

○ ester

○ carboxylic acid

Identify the type of this organic compound:
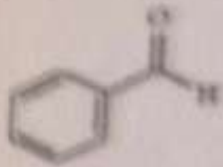
- ketone
- alcohol
- carboxylic acid
- aldehyde

Aldehyde

Question No. 19

Determine the value of K_c for the following reaction if the equilibrium concentrations are as follows: $[H_2]eq = 0.14$ M, $[I_2]eq = 0.39$ M, $[HI]eq = 1.6$ M.

$$H_2(g) + I_2(g) \rightleftharpoons 2 HI(g)$$
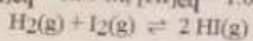
- ○ 29
- ○ 3.4×10^{-2}
- ○ 47
- ● 2.1×10^{-2}

$$K_c = \frac{[1.6]^2}{[0.14][0.39]} = 47$$

Save & Next حفظ و التالي
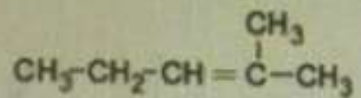
What is the IUPAC name for the following compound?

$$CH_3-CH_2-CH=\overset{\overset{\displaystyle CH_3}{|}}{C}-CH_3$$

- 3-methyl-4-pentene
- 2-methyl-3-pentene
- 2-methyl-2-pentene
- 4-methyl-3-pentene

Question No. 24

Refer to the reaction shown below. Increasing the volume of the system will _____

$$2H_2S\ (g) + 3O_2\ (g) \rightleftharpoons 2SO_2\ (g) + 2H_2O\ (g)$$
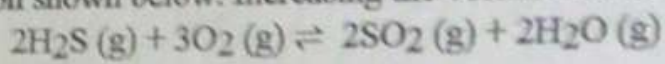
- cannot be determined, since the temperature is unknown
- shift the reaction to the left
- have no effect
- shift the reaction to the right

Save & Next حفظ والتالي

Question No. 17

According to the Arrhenius definition, when HCl is dissolved in water, it would act as _____.

- an acid
- a proton acceptor
- a base
- a source of hydroxide ions

Question No. 13

How many liters of a 0.3 M KOH solution contain 6.0 moles of KOH?

- ○ 10 L
- ○ 0.5 L
- ○ 5.0 L
- ◉ 20 L

$$M = \frac{n}{L}$$

$$L = \frac{n}{M}$$

$$L = \frac{6}{0.3} = 20$$

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HP Compaq LE1711

Question No. 14

What is the molarity of $FeCl_3$ in a solution prepared by dissolving 10.0 g of $FeCl_3$ in enough water to make 275 mL of solution?

0.275 L

- 0.224 M
- 4.46×10^3 M
- 4.46 M
- 2.24×10^{-4} M

$$M = \frac{n}{L} \longrightarrow n = \frac{g}{mm} = \frac{10}{(56) + (35 \times 3)} = 0.061$$

$$\longrightarrow M = \frac{0.061}{0.275} \approx 0.22$$

A

Question No. 18

In the following equation which is the proton donor and which is the proton acceptor?

$$CO_3^{2-} (aq) + H_2O (l) \rightarrow HCO_3^- (aq) + OH^- (aq)$$
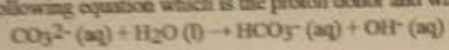
○ Donor: OH^-; acceptor: HCO_3^-

○ Donor: CO_3^{2-}; acceptor: H_2O

○ Donor: H_2O; acceptor: CO_3^{2-}

○ Donor: HCO_3^-; acceptor: OH^-

Save & Next حفظ والتالي

HP Compaq LE1711

Question No. 20

Give the direction of the reaction, if Kc << 1.

○ The forward reaction is favored.

○ If the temperature is raised, then the reverse reaction is favored.

○ The reverse reaction is favored.

○ Neither direction is favored.

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According to the following reaction, which molecule is acting as a conjugate base?
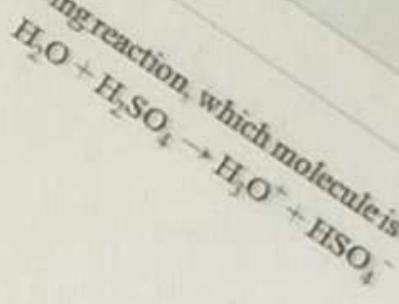
$$H_2O + H_2SO_4 \rightarrow H_3O^+ + HSO_4^-$$

- HSO_4^-
- H_3O^+
- H_2SO_4
- H_2O

Question No. 17

What is the term for a substance that releases hydroxide ions (OH⁻) in water?

- ○ Brønsted-Lowry acid
- ○ Brønsted-Lowry base
- ● Lewis acid
- ○ Arrhenius base

Save & Next حفظ والي

Question No. 44

When heat (q) has positive value, this means that _____

- The work (w) = 0.
- The surrounding gains thermal energy
- The system gains thermal energy
- The system loses thermal energy

Save & Next حفظ والتالي

Question No. 41

The names of hydrocarbon compounds having carbon-carbon triple bonds contain the suffix _____

- -ene
- -ane
- -one
- -yne

Consider the following reaction at equilibrium. What is the effect of reducing the volume on the system?

$$Xe(g) + 2 F_2(g) \rightleftharpoons XeF_4(g)$$
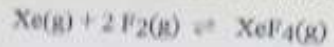
○ The reaction will shift to the left in the direction of reactants

○ The reaction will shift to the right in the direction of products

○ The equilibrium constant will decrease

○ No effect will be observed.

Which one of the following is a Lewis base?

- BF$_3$
- NH$_3$
- AlCl$_3$
- NH$_4^+$

lewis base   lewis acid
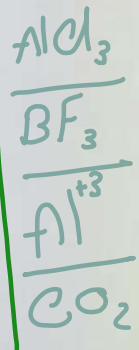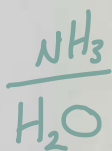
$$\frac{NH_3}{H_2O}$$

$$\frac{AlCl_3}{\frac{BF_3}{\frac{Al^{+3}}{CO_2}}}$$

Save & Next

Question No. 19

Express the equilibrium constant for the following reaction.

$$PCl_5 \text{ (g)} \rightleftharpoons PCl_3 \text{ (g)} + Cl_2 \text{ (g)}$$
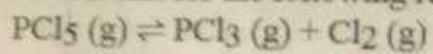
○ $K = \dfrac{[PCl_5]}{[PCl_3][Cl_2]}$

○ $K = \dfrac{[PCl_3][Cl_2]}{[PCl_5]}$

○ $K = \dfrac{[PCl_3]^2[Cl_2]^2}{[PCl_5]^2}$

○ $K = \dfrac{[PCl_3][Cl]^2}{[PCl_5]}$

Save & Next هنظر والتلي

Question No. 16

Identify the *reducing agent* in the chemical reaction
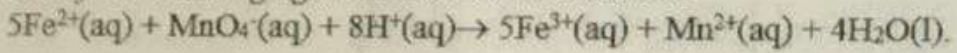
$$5Fe^{2+}(aq) + MnO_4^-(aq) + 8H^+(aq) \rightarrow 5Fe^{3+}(aq) + Mn^{2+}(aq) + 4H_2O(l).$$

- ⦿ Fe^{2+}
- ○ Fe^{3+}
- ○ MnO_4^-
- ○ Mn^{2+}
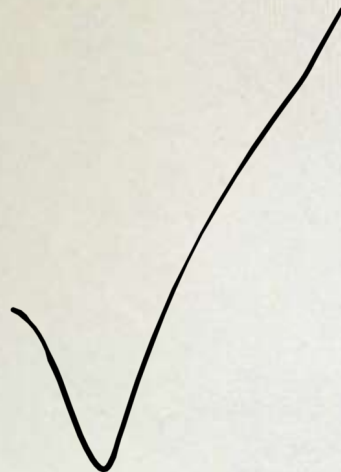
Question No. 7

Which of the following is a general guideline for balancing an equation?

- Write correct formulas for reactants and products.
- Check each reactant and product to verify the coefficients.
- All are correct
- Balance polyatomic ions as a single unit.

Save & Next
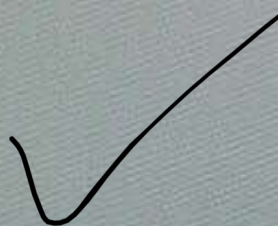
Question No. 6

Which of the following is a molecular compound?

- P_2O_4
- CuF_2
- $NaNO_3$
- RbF

Question No. 7

What is the coefficient of oxygen gas after balancing the following equation?

$$2\ H_2O_2(l) \xrightarrow{\Delta} 2\ H_2O(l) + 1\ O_2(g)$$
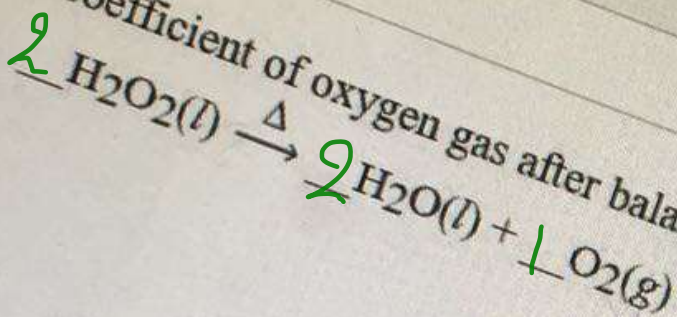
- ○ 2
- ○ 1
- ○ 3
- ○ 4

Question No. 8

Determine the empirical formula for a compound that contains C, H and O. It contains 52.14% C, 13.13% H and 34.73% O by mass.

- $C_2H_6O_2$
- $C_4H_{13}O_2$
- C_2H_6O
- CH_4O_3

$$C_{\frac{52.14}{12}} \quad H_{\frac{13.13}{1}} \quad O_{\frac{34.73}{16}}$$

$$C_{\frac{4.33}{2.17}} H_{\frac{13.13}{2.17}} O_{\frac{2.17}{2.17}}$$

$$C_2H_6O_1$$
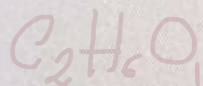
Question No. 3

How many molecules are in 237 g (about a cup) of water?

- ○ 4267
- ○ 13.1
- ○ 6.02×10^{23}
- ○ 7.93×10^{24}

$$n = \frac{237}{18} \longrightarrow \text{كتلة الماء} \\ \text{المولية}$$

$$n = 13$$

$$13 \times 6.02 \times 10^{23}$$

$$= 7.9 \times 10^{24}$$

Question No. 3

One mole of particles of any substance contains how many particles?

- 3×10^{-10}
- 3×10^{10}
- 6.02×10^{23}
- 6.02×10^{23}

Save & Next

Che

Question No. 10

The empirical formula of the compound CO is:

- C_3O_6
- CO_2
- C_2O_4
- CO

Question No. 23

A reaction that releases energy as it occurs, is classified as _____.

- oxidation-reduction reaction
- exothermic reaction
- catalyzed reaction
- endothermic reaction

Which molecule contains the strongest carbon-carbon bond?

- $F_2C=CF_2$
- $HC=CH$
- H_3C-CH_3
- $H_2C=CH_2$

Question No. 34

Name the following compound.

$$CH_2CH_2CH_2CH_3$$
$$|$$
$$CH_3CH_2CC\equiv CH$$
$$|$$
$$CH_2CH_2CH_3$$
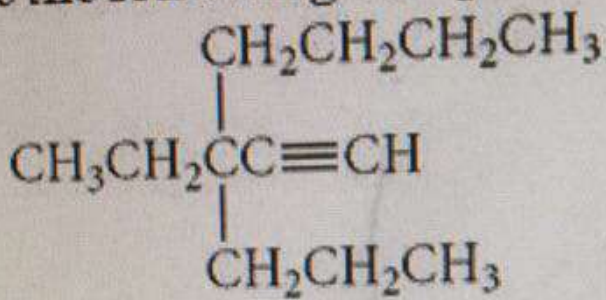
○ 3-butyl-3-propyl-4-pentyne

○ 3-ethyl-3-propyl-1-heptyne

○ 5-ethyl-5-propyl-6-heptyne

○ 3-butyl-3-propyl-1-pentyne

Question No. 35

What is the name of this compound?

$$CH_2CH_3$$
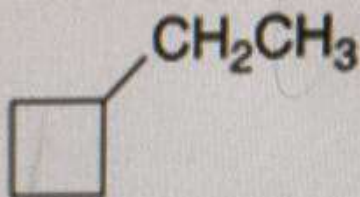
- ethyl cyclobutane
- ethyl cyclohexane
- ethyl cyclopentane
- cycloethane

Question No. 14

Which of the following compounds gives a strong electrolyte aqueous solution?

○ NH_3
◉ HI
○ CH_3COOH
○ $C_6H_{12}O_6$

Save & Next حفظ وتالی

The two molecules represented below are examples of

$CH_3-CH_2-O-CH_2-CH_3$ $CH_3-CH_2-CH_2-CH_2-OH$
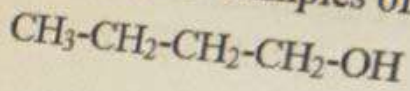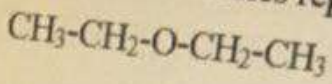
- isomers.
- geometric isomers.
- identical.
- stereoisomers.

same no. of H & C

LE1901w

Question No. 31

The formula for pentyne is

- C_5H_{12}
- C_5H_{14}
- C_5H_8 C_nH_{2n-2}
- C_5H_{10}
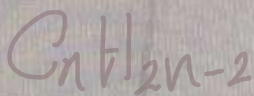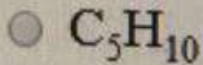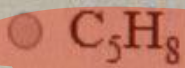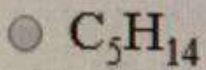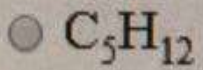
Question No. 11

Give the name for PCl_3.

○ phosphorus (III) chloride
○ phosphorus trichloride
○ potassium trichloride
○ phosphorus chloride

MKCL OES
Online Evaluation System

Question No. 20

Which of the following is correctly identified?

- $NaOH$, strong acid
- HCl, weak acid
- H_2CO_3, strong acid
- NH_3, weak base

Save & Next حفظ والتالي

Question No. 30

What is the general molecular formula for the alkene class of compounds?

- C_nH_{2n+2}
- C_nH_{2n-2}
- C_nH_{2n-4}
- C_nH_{2n}

Question No. 15

According to the Arrhenius concept, if H_2SO_4 were dissolved in water, it would act as

- an acid.
- a source of hydroxide ions.
- a proton acceptor.
- a base.

Save & Next رابطا حفظ

Question No. 6

What is the coefficient of oxygen gas after balancing the following equation?

$$2 \, AgClO_3(s) \xrightarrow{\Delta} 2 \, AgCl(s) + 3 \, O_2(g)$$
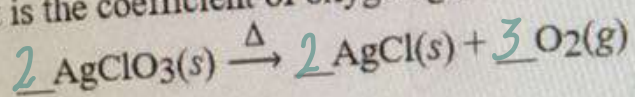
- 2
- 3
- 4
- 1

Question No. 26

Which one of the following is false about exothermic reaction?

- q is positive
- The heat is evolved.
- The energy is released from the system.
- The reaction vessel becomes warm.

Question No. 9

What is the chemical formula for the binary compound composed of Li^+ and $O2-$ ions?

- ⦿ Li_2O
- ○ Li_2O_2
- ○ LiO_2
- ○ LiO

Question No. 37

Esters can be made by condensation reaction between ....

- Alcohol with carboxylic acid
- Alcohol with alcohol
- Amine with carboxylic acid
- Amine with alcohol

Save & Next حفظ والتالي

Question No. 14

The distinguishing characteristic of all electrolyte solutions is that they

○ contain molecules.
○ react with other solutions.
○ conduct electricity.
○ conduct heat

Question No. 21

CO_2 acts as a Lewis acid in the reaction $CaO(s) + CO_2 \rightarrow CaCO_3(s)$ because it _____.

- is a proton donor
- turns blue litmus to red
- reacts with a metal
- is an electron-pair acceptor

Which of the following statements about alkanes is false?

- alkanes are saturated hydrocarbons
- alkanes contain a single bond
- alkanes can be represented by the formula CnH_{2n+2}
- alkanes are more reactive than the corresponding alkene

Save & Next خطوة وتالي

Question No. 32

Which of the following is the condensed structural formula for 3-ethyl-2,4,5-trimethylhexane?

○
$$CH_3-CH-CH_2-CH-CH-CH_3$$
with substituents: CH_2-CH_3 and CH_3 on top; CH_3 and CH_3 on bottom

○
$$CH_3-C-C-CH-CH-CH_3$$
with substituents: CH_3 CH_3 CH_2-CH_3 on top; CH_3 CH_3 CH_3 on bottom

○
$$CH_3-CH-CH-CH-CH-CH_3$$
with substituents: CH_2-CH_3 CH_3 on top; CH_3 CH_3 on bottom

○
$$CH_3-CH-CH-CH-CH-CH_3$$
with substituents: CH_2-CH_3 CH_3 on top; CH_3-CH_2 CH_2-CH_3 on bottom
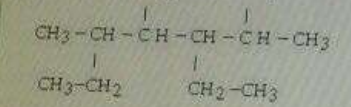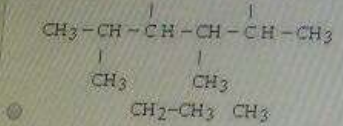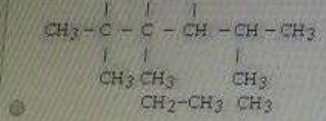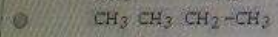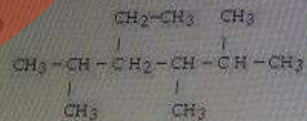
The formula for hexene is

- ⚪ C_7H_{16}
- ⚪ C_6H_{12}
- ⚪ C_3H_8
- ⚪ C_6H_{14}

Question No. 22

Identify the conjugate acid in the following reversible reaction.
$$HF(aq) + HSO_3^-(aq) \leftrightarrow F^-(aq) + H_2SO_3(aq)$$
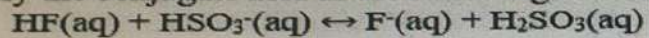
○ $H_2SO_3(aq)$

○ $HF(aq)$

○ $HSO_3-(aq)$

○ $F^-(aq)$

Question No. 19

Which one of the following is characteristic of a base?

- it has a sour taste
- it turns litmus paper to red
- it is slippery touch
- it reacts with active metals

Save & Next حفظ و بعد

What is the IUPAC name for the following compound?

$$CH_3-CH_2-CH=C-CH_3$$
$$|$$
$$CH_3$$
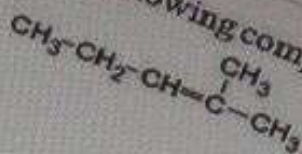
- 4-methyl-3-pentene
- 3-methyl-4-pentene
- 2-methyl-2-pentene
- 2-methyl-3-pentene

Provide the name of the compound below.
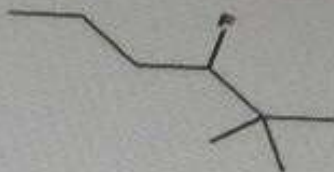
- 3-fluoro-2-isopropylhexane
- 4-fluro-5,5 dimethylhexane
- 3-fluoro-2,2-dimethylhexane
- 3-fluoro-2,2-diethylhexane

Question No. 19

Which of the following is true before a reaction reaches chemical equilibrium?

○ The amount of reactants is decreasing.
○ The amount of reactants and products are equal.
○ The amount of reactants is increasing.
○ The amount of reactants and products are constant.

Save & Next حفظ والتالي

ompaq LE1711

What is the IUPAC name of this compound?
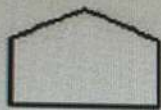
- cyclopentane
- cyclopropane
- cyclobutane
- cyclohexane

What is the $[OH^-]$ if the $[H_3O^+]$ is 1.0×10^{-5} M ?

○ $[OH-] = 7.0 \times 10^{-10}$

○ $[OH-] = 6.0 \times 10^{-5}$

○ $[OH-] = 1.0 \times 10^{-9}$

○ $[OH-] = 1.0 \times 10^{-14}$

Question No. 18

An equilibrium in which all the components are gases is a _____ equilibrium.

- liquid
- heterogeneous
- catalytic
- homogeneous

Question No. 17

The number of lone electron pairs in the N_2 molecule is ____.

- ○ 2
- ○ 1
- ○ 3
- ○ 5

Save & Next ضغط واجه لي
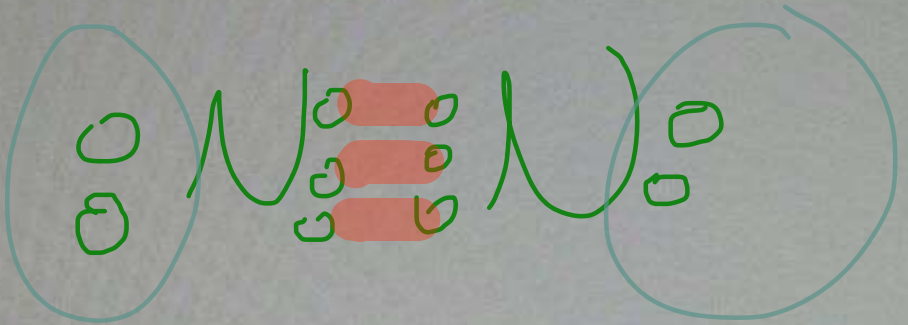
Question No. 23

Which of the following is true if the hydronium ion concentration of an aqueous solution decreases?

- pH decreases
- pH increases
- Kw increases
- Kw decreases

Question No. 17

Which of the following is the electron dot formula (Lewis structure) for an atom of carbon?

(a) C·   (b) ·C·   (c) ·Ċ·   (d) :Ċ:

- (a)
- (b)
- (c)
- (d)

Save & Next ردایگ بعد

HP LE1901w

Question No. 19

Which of the following is true after a reaction reaches chemical equilibrium?

○ The amount of products is increasing.
○ The amount of reactants and products are equal.
○ The amount of reactants is increasing.
○ The amount of reactants and products are constant.

HP Compaq LE1711

Question No. 30

Which of the following statements about alkanes is false?

- alkanes are saturated hydrocarbons
- alkanes contain a single bond
- alkanes can be represented by the formula CnH_{2n+2}
- alkanes are more reactive than the corresponding alkene

Save & Next بعد وذخی

HP LE1901W

Question No. 37

Oxidation of an aldehyde produces a

- ester.
- carboxylic acid.
- alcohol.
- ketone.

Question No. 34

What is the IUPAC name for the following compound?

○ 6-chloro-1-pentyne
○ 6-chloro-1-hexyne
○ 1-chloro-5-hexyne
○ 6-chloro-2-pentyne

Question No. 15

In a neutralization reaction

- water and a salt react to form an acid and a base.
- two acids react to form water.
- an acid and a salt react to form water and a base.
- an acid and a base react to form a salt and water.

Question No. 21

In the reaction $BF_3 + NH_3 \rightarrow F_3B : NH_3$, BF_3 acts as:

- a Lewis base
- a Lewis acid
- an Arrhenius acid
- an Arrhenius base

Save & Next حفظ والتالي

Question No. 15

According to the Arrhenius concept, if $Ca(OH)_2$ were dissolved in water, it would act as

○ an acid.

○ an electron pair acceptor.

○ a proton acceptor.

○ a base.

حفظ والتالي Save & Next

What is the equilibrium constant expression for the following reaction?

$$2\ CH_4(g) + O_2(g) \rightleftharpoons 2\ CO(g) + 4\ H_2(g)$$

○ $K_c = [CH_4]^2\,[O_2] / [CO]^2\,[H_2]^4$

○ $K_c = [CH_4]\,[O_2] / [CO]\,[H_2]$

○ $K_c = [CO]\,[H_2] / [CH_4]\,[O_2]$

○ $K_c = [CO]^2\,[H_2]^4 / [CH_4]^2\,[O_2]$

Question No. 13

A solution is made by dissolving 2.5 mole of HCl in enough water to give a final volume of 900 mL. What is the molarity of the solution

- 0.800 M
- 0.125 M
- 2.78 M
- 1.52 M

Save & Next سيط رالى

Question No. 33

What is the IUPAC name for $CH_3-CH_2-CH=CH_2$?

- ○ 1-butene
- ○ 3-butene
- ○ 2-butene
- ○ butene

In the Lewis structure for CH_4, how many unshared pairs of electrons will carbon have?

- 2
- 0
- 1
- 3

Question No. 17

How many valence electrons are in a chlorine atom and a chloride ion?

- 7 and 8, respectively
- 8 and 7, respectively
- 17 and 18, respectively
- 1 and 8, respectively

Save & Next حفظ والتالي

Question No. 20

If a saliva sample has a pH of 7, the solution would be:

- ○ neutral
- ○ strongly acidic
- ○ weakly acidic
- ○ weakly basic

Question No. 19

What is the term for a substance that accepts a proton in an acid-base reaction?

H^+

○ Arrhenius base

○ Brønsted-Lowry base

○ Brønsted-Lowry acid

○ Arrhenius acid

According to the following reaction, which molecule is acting as a base?

$$H_2O + NH_3 \rightarrow OH^- + NH_4^+$$
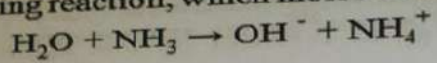
- ⊙ OH^-
- ⊙ H_2O
- ⊙ NH_3
- ⊙ NH_4^+

Question No. 35

Provide the name of the compound below.
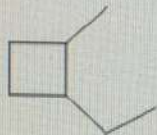
- ○ 1-methyl-2-ethylcyclobutane
- ○ 1-methyl-4-ethylcyclobutane
- ○ 1-ethyl-2-methylcyclobutane
- ○ 1-ethyl-4-methylcyclobutane

Question No. 11

The most correct name for the compound CS_2 is:

- carbon trisulfide
- monocarbon disulfide
- carbon sulfide
- carbon disulfide

Save & Next حفظ والتالي

What is the term for a type of reaction in which an acid and a base react to produce a salt and water?

- double replacement
- combination
- decomposition
- neutralization

Question No. 16

Which molecule contains the longest carbon-carbon bond?

- $F_2C{=}CF_2$
- $H_3C{-}CH_3$
- $H_2C{=}CH_2$
- $HC{\equiv}CH$
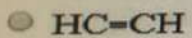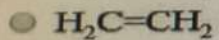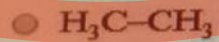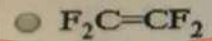
Question No. 22

In water solution, the conjugate base of HF is _____.

- H^+
- H_2O
- OH^-
- F^-

Question No. 21

The compound NH_3 can be described as _____.

- ○ Bronsted-Lowry acid
- ○ Lewis base
- ○ Lewis acid
- ○ Arrhenius acid

Question No. 17

How many valence electrons are in a fluorine atom and a fluoride ion?

- 7 and 8, respectively
- 9 and 10, respectively
- 8 and 7, respectively
- 1 and 8, respectively

Question No. 18

When a reaction is at equilibrium,

- ○ no more reactants are converted to products.
- ○ the forward and reverse reactions occur at the same rate.
- ○ the reaction is no longer reversible.
- ○ the whole reaction stops.

Question No. 13

In a solution, the solute is _____.

- always a solid
- always water
- the substance present in the greatest amount
- the substance present in the smallest amount

Question No. 13

How many liters of a 0.5 M NaCl solution contain 1.5 mole of NaCl?

- ○ 1.5 L
- ○ 0.33 L
- ○ 0.75 L
- ○ 3.0 L

$$M = \frac{n}{L}$$

$$L = \frac{n}{M} = \frac{1.5}{0.5} = 3$$

The most correct name for the compound CCl_4 is:

- ○ carbon trichloride
- ○ carbon tetrachloride
- ○ carbon dichloride
- ○ carbon chloride

Question No. 10

The mass percent composition of <u>hydrogen</u> in the sugar C_6H_5F is:

- ○ 75.0%
- ○ 19.8%
- ○ 5.2%
- ○ 6.7%

$$\frac{1 \times 5}{(12 \times 6) + (5) + 19} \times 100$$

$$=$$

Question No. 15

Which of the following is the strongest acid?

- HNO_3
- H_2CO_3
- $NaOH$
- H_3PO_4

Question No. 12

What is the percent yield for a reaction if its theoretical yield is 65 g and its actual yield is 55 g?

- ○ 56%
- ○ 85%
- ○ 60%
- ○ 15%

Question No. 2

Helium has _____ valence electrons.

- 4
- 2
- 6
- 8

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Question No. 30

Compounds that have the same molecular formula but different arrangements of atoms are called _____

- ○ isomers
- ○ isotopes
- ○ indicators ___
- ○ isozymes

Proteins are polymers. They consist of monomer units which are

- amino acids
- aldehydes
- ketones
- amines

Question No. 34

Provide the name of the compound below.
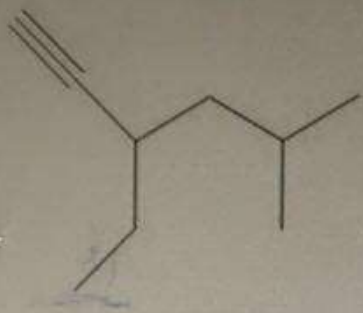
- ○ 5-methyl-3-ethyl-1-hexyne
- ○ 3-ethyl-5-methyl-1-hexyne
- ○ 4-ethyl-2-methyl-5-hexyne
- ○ 2-methyl-4-ethyl-5-hexyne

The most correct name for the compound P_4S_{10} is:

- ○ tetraphosphorus octasulfide
- ○ tetraphosphorus nonasulfide
- ○ tetraphosphorus decasulfide
- ○ triphosphorus decasulfide

Question No. 33

What is the IUPAC name for the following compound?

- ⊙ 2-pentene
- ⊙ 1-pentene
- ⊙ 1-methylbutene
- ⊙ 3-pentene

Question No. 32

What is the IUPAC name of the following structure?
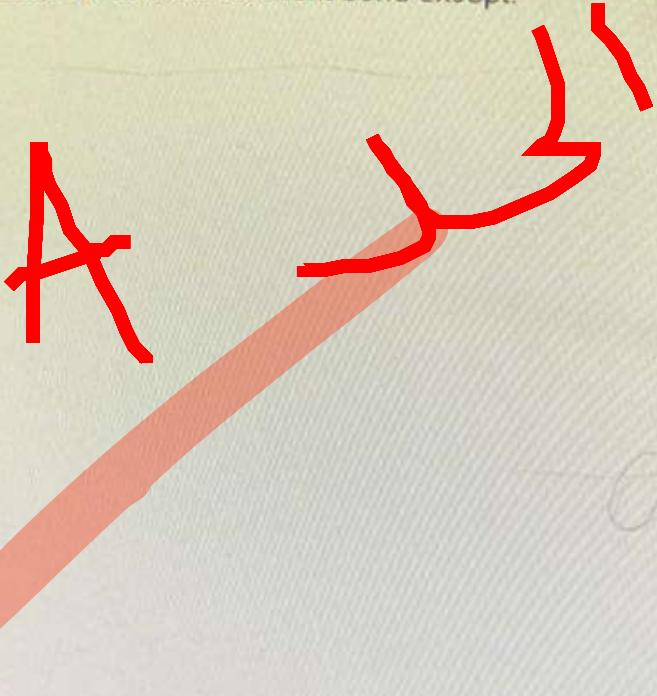
- 1,1,3,3-tetramethylpentane
- 2,2,5-trimethylhexane
- 2,4,4-trimethylhexane
- 3,3,5-trimethylhexane

Question No. 16

All of the following compounds has a covalent bond except.

- $AlCl_3$
- BrF
- ICl
- HBr

Question No. 19

Which substance can be called an Arrhenius base?

- HBr
- CH_3OH
- NaCl
- KOH

الحل

D

What is the name of compound shown below?
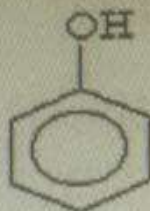
- aniline
- benzene
- phenol
- toluene

Question No. 36

What is the name of compound has the following general formula?

$$R-\overset{\overset{\displaystyle O}{\|}}{C}-O-R'$$
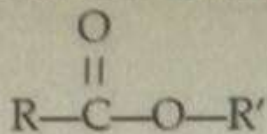
- carboxylic acid
- aldehyde
- ketone
- ester

Question No. 18

Which of the following is true before a reaction reaches chemical equilibrium?

- The rate of the forward reaction is increasing, and the rate of the reverse reaction is decreasing.
- The rates of the forward and reverse reactions are decreasing.
- The rate of the forward reaction is decreasing, and the rate of the reverse reaction is increasing.
- The rates of the forward and reverse reactions are increasing.

الحل

Question No. 19

What is the term for a substance that accepts a proton in an acid-base reaction?

- ○ Brønsted-Lowry base
- ○ Arrhenius base
- ● Brønsted-Lowry acid
- ○ Arrhenius acid

Question No. 15

In a neutralization reaction

- ○ an acid and a base react to form a salt and water.
- ○ water and a salt react to form an acid and a base.
- ○ an acid and a salt react to form water and a base.
- ○ two acids react to form water.

Question No. 25

A process or reaction which absorb heat from the surroundings is said to be

- exothermic.
- conservative.
- isothermal.
- endothermic.

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Question No. 33

Which of the following molecular formulas corresponds to an alkene?

- C_7H_{18}
- C_7H_{14}
- C_7H_{16} —
- C_7H_{12}

Question No. 34

Name the following compound.

$$H_3C - \underset{\underset{CH_3}{\overset{\overset{CH_2CH_3}{|}}{|}}}{C} - C \equiv CH$$
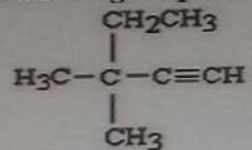
- ○ 2-ethyl-2-methyl-3-butyne
- ○ 3, 3-dimethyl-1-pentyne
- ○ 3-ethyl-3-methyl-1-butyne
- ○ 1-butylethyne

Question No. 21

Which of the following are Lewis bases?

I) BCl_3

II) H^-

III) H_2O

IV) NH_3

○ I) and II)

○ I), II), and III)

○ III) and IV)

○ II), III) and IV)

Question No. 7

Covalent bonding is a

- ● loss of electrons.
- ○ transfer of electrons.
- ○ gain of electrons.
- ○ sharing of electrons

Save & Next مظرهلی

Question No. 14

The distinguishing characteristic of all electrolyte solutions is that they

- contain molecules.
- react with other solutions.
- conduct electricity.
- conduct heat

Question No. 39

The term "carbohydrates" refers to a large class of polyhydroxylated _____

- alcohols and carboxylic acids
- amines and amides
- aldehydes and ketones
- ethers and esters

انه صح

Save & Next حفظ و کلی

Question No. 6

What is the coefficient of carbon dioxide after balancing the following equation?

2 $KHCO_3(s) \xrightarrow{\Delta}$ __$K_2CO_3(s)$ + __$H_2O(g)$ + __$CO_2(g)$

- 3
- 1
- 4
- 2

Save & Next
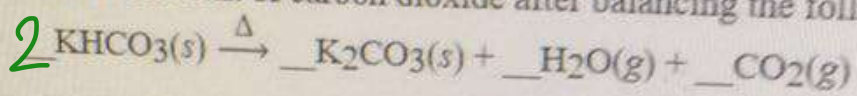
onic bond is best described as

○ the transfer of electrons from one atom to another.

○ the attraction between 2 nonmetal atoms.

○ the attraction between 2 metal atoms.

○ the sharing of electrons.

Question No. 9

What is the chemical formula for the binary compound composed of Mg^{2+} and O^{2-} ions?

- ○ Mg_2O_2
- ● MgO_2
- ○ MgO
- ○ Mg_2O

MKCL OES

Question No. 9

The chemical formula of the compound formed between sodium and fluorine is:

○ Na_2F

○ NaF_3

○ NaF

○ NaF_2

Question No. 8

The name of the Cu^{2+} ion is _____.

- ⚪ copper(III)
- ⚪ copper
- ⚪ copper(I)
- ⚪ copper(II)

The combustion of propane (C_3H_8) in the presence of excess oxygen yields CO_2 and H_2O:

$$C_3H_8 (g) + 5 O_2 (g) \rightarrow 3CO_2 (g) + 4 H_2O (g)$$
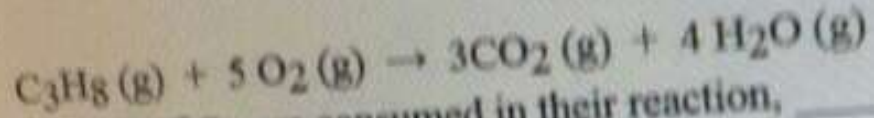
When 2.5 mol of O_2 are consumed in their reaction, _____ mol of CO_2 are produced.

$5 \rightarrow 3$

$2.5 \rightarrow ?$

- 6
- 1.5
- 3
- 5

Question No. 12

Calcium carbide (CaC_2) reacts with water to produce acetylene (C_2H_2):

$$CaC_2 \text{ (s)} + 2 H_2O \text{ (g)} \rightarrow Ca(OH)_2 \text{ (s)} + C_2H_2 \text{ (g)}$$
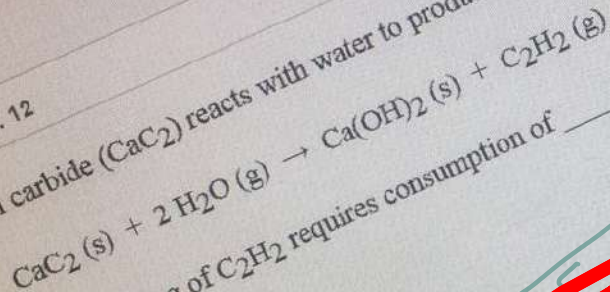
Production of 13 g of C_2H_2 requires consumption of _____ g of H_2O.

- 4.5
- 9.0
- 4.8×10^2
- 18

Question No. 11

Which of the following species has an oxidation number of zero?

- O_2
- Na^{+1}
- Mg^{+2}
- Al^{+3}

A

Question No. 2

How many covalent bonds will a hydrogen atom normally make?

- ○ 1
- ○ 4
- ○ 3
- ○ 2

A

A chemical reaction has reached equilibrium when _____

- the rate of the forward reaction equals the rate of the reverse reaction
- all products have been removed from the reaction mixture
- all reactants have been converted to products.
- the concentrations of reactants and products are equal.

A

Save & Next ساعة

HP LE1901w

Question No. 5

Calculate the number of grams of HI present in 0.6 moles HI.

- 37.7 g
- 54.5 g
- 76.7 g
- 73.4 g

C

Which one of the following is characteristic of a base?

○ it turns litmus paper to red
○ it turns red litmus to blue
○ it has a sour taste
○ it reacts with active metals
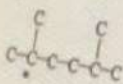
Save & Next حفظ والتالي

Question No. 7

What is the correct formula for the iron(II) ion?

- Fe^+
- Fe^{2-}
- Fe^{3+}
- Fe^{2+}

D

Question No. 31

The carbon skeleton of an alkane is shown below. How many hydrogen atoms are bonded to the carbon marked with a *?

- 3
- 1
- 0
- 2

Save & Next
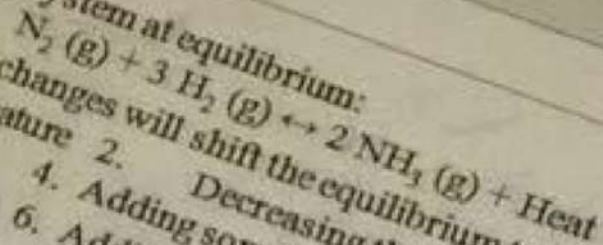
Use the periodic table to answer the following question:
The formula CCl_4 has a molar mass of ___ g/mol.

- 140
- 154
- 150
- 146

Consider the following system at equilibrium:

$$N_2 (g) + 3 H_2 (g) \leftrightarrow 2 NH_3 (g) + Heat$$

Which of the following changes will shift the equilibrium to the *right*?

1. Increasing the temperature
2. Decreasing the temperature
3. Removing some NH_3
4. Adding some NH_3
5. Removing some N_2
6. Adding some N_2

- ○ 2, 3, 6
- ○ 2, 4, 6
- ○ 1, 4, 5
- ○ 1, 3, 6

Question No. 4

What is the molar mass of copper(II) sulfate, $CuSO_4$?

- 159.6 g/mol
- 63.60 g/mol
- 111.6 g/mol
- 16.00 g/mol

Save & Next مفيد وبلى 19

Question No. 3

What is the molecular formula of a compound that has a molar mass of 444.6 g/mol and empirical formula is P_2S_5?

- $P_{10}S_{25}$
- P_6S_{15}
- P_8S_{20}
- P_4S_{10}

Save & Next पुढे ढकला

Question No. 3

The empirical formula of the molecular compound C_8H_{20} is:

- C_4H_{10}
- C_2H_4
- CH
- C_2H_5

Question No. 9

Which of the following compounds gives a strong electrolyte aqueous solution?

- H_2SO_4
- CH_3OH
- $C_6H_{12}O_6$
- CH_4

A

Question No. 14

What is the molarity of $FeCl_3$ in a solution prepared by dissolving 10.0 g of $FeCl_3$ in enough water to make 275 mL of solution?

- ○ 0.224 M
- ○ 4.46×10^3 M
- ○ 4.46 M
- ○ 2.24×10^{-4} M

Which one of the following is FALSE about an "exothermic reaction"?

- The heat is evolved.
- Heat "q" is positive.
- The energy is released from the system.
- The surroundings gain thermal energy

Question No. 13

How many liters of a 1.3 M NaOH solution containing 0.4 mole of NaOH?

- ○ 1.32 L
- ○ 1.21 L
- ○ 3.25 L
- ○ 0.30 L

Save & Ne

Question No. 4

Calculate the mass percent composition of potassium in K_3PO_4.

- ○ 26.8%
- ○ 55.3 %
- ● 30.7 %
- ○ 18.0 %

Save & Next حفظ والتالي

Question No. 8
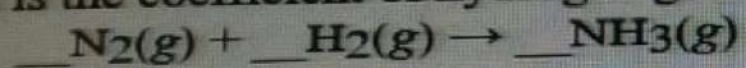
The most correct name for the compound SCl_2 is:

- ○ monosulfur dichloride
- ○ sulfur dichloride
- ○ monosulfur trichloride
- ○ sulfur chloride

Save & Next

Question No. 1

What is the coefficient of hydrogen gas after balancing the following equation?

$$\_\_N_2(g) + \_\_H_2(g) \rightarrow \_\_NH_3(g)$$
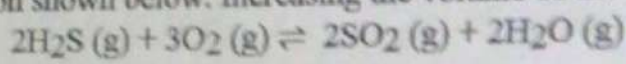
○ 1

○ 4

○ 3

○ 2

Question No. 44

When heat (q) has negative value, this means that _____

- The system gains thermal energy.
- The work (w) = 0.
- The system loses thermal energy.
- The surrounding loses thermal energy.

Save & Next حفظ و التالي

Question No. 24

Refer to the reaction shown below. Increasing the volume of the system will _____

$$2H_2S\ (g) + 3O_2\ (g) \rightleftharpoons 2SO_2\ (g) + 2H_2O\ (g)$$

- cannot be determined, since the temperature is unknown
- shift the reaction to the left
- have no effect
- shift the reaction to the right

Save & Next حفظ والتالي

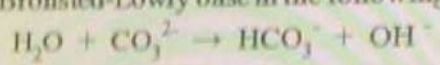Two mole of any substance contains _____ particles?

- 1.20×10^{24}
- 6.022×10^{23}
- 12.044×10^{23}
- 3.011×10^{24}

A

Save & Next حفظ والتالي

MKCL OES

Question No. 17

Identify the Bronsted-Lowry base in the following reaction.

$$H_2O + CO_3^{2-} \rightarrow HCO_3^- + OH^-$$

- CO_3^{2-}
- OH^-
- HCO_3^-
- H_2O

Save & Next

MKCL OES
Online Evaluation System

Question No. 40

Organic compounds with the general formula R-O-R (where R is an alkyl group) are called _____

○ aldehydes
○ amines
◉ ethers
○ carboxylic acids

Save & Next حفظ والتالي

Question No. 6

How many Lithium (Li) atoms are contained in 97.9 g of Lithium?

- 8.49×10^{24} Li atoms
- 4.27×10^{22} Li atoms
- 5.90×10^{25} Li atoms
- 7.09×10^{21} Li atoms

A

Question No. 2

In ionic compounds, _____ lose their valence electrons to form positively charged _____.

○ metals; cations
○ nonmetals; cations
○ nonmetals; anions
○ metals; anions

A

Save & Next حفظ والتالى

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Question No. 9

When dissolved in water, _____ can make aqueous solution that conduct electricity.

- C_8H_{18}
- ionic salt
- CH_3OCH_3
- sugar

Save & Next سيت والتالى

MRCL OES

Question No. 15

What volume (mL) of a concentrated solution of magnesium chloride (9.00 M) must be diluted to make 350 mL of 2.75 M solution of magnesium chloride?
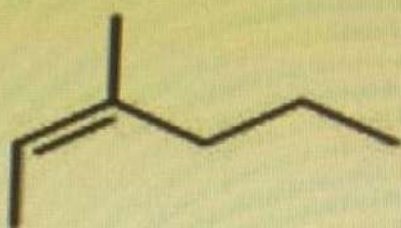
○ 2.75

○ 107

○ 45.0

○ 50.0

The number of CO_2 molecules that are produced from burning of 57.11 g of C_8H_{18} (Molar mass = 114.22 g/mol) according to the following equation:

$$2 \ C_8H_{18(l)} + 25 \ O_{2(g)} \rightarrow 16 \ CO_{2(g)} + 18 \ H_2O_{(g)}$$
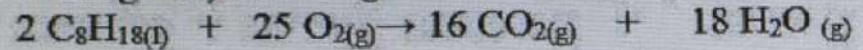
- 2.41×10^{24} molecules.
- 6.02×10^{23} molecules.
- 8 molecules.
- 16 molecules.

حفظ والتالي Save & Next

What is the name of the following compound?

- ◯ 4-ethyl-4-hexene
- ◯ 3-methylenehexane
- ◯ 3-methyl-2-hexene
- ◯ 3-methyl-3-hexene

Save & Next حفظ والتالي

Consider the reaction below at equilibrium. What effect will adding more H_2S have on the system?

$$2 H_2S(g) + 3 O_2(g) \rightleftharpoons 2 H_2O(g) + 2 SO_2(g)$$
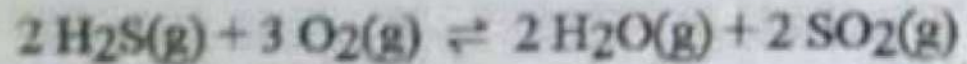
● The reaction will shift to the direction of products

● The equilibrium constant will increase

● The reaction will shift to the left

● The equilibrium constant will decrease

A

Question No. 27

What is the $[H_3O^+]$ in a solution with $[OH^-] = 1 \times 10^{-12}$ M?

- 1×10^{-2} M
- 1×10^{2} M
- 1×10^{-8} M
- 1×10^{-12} M

A

Save & Next حفظ والتالي

Question No. 35

Provide the name of the compound below.

- ⭘ methylcyclopropane
- ⭘ methylcyclopentane
- ⭘ ethylcyclopentane
- ⭘ methylcyclohexane

B

Save & Next حفظ والتالي

MKCL OES
Online Evaluation System

Question No. 9

When dissolved in water, a _____ gives an aqueous solution that does not conduct electricity.

- ○ sugar
- ○ strong base
- ○ strong acid
- ○ weak base

A

Save & Next بعد و التالي

Question No. 7

What is the formula for the ionic compound formed by magnesium and iodine?

- ○ MgI_3
- ○ Mg_2I
- ○ MgI
- ○ MgI_2

Save & Next حفظ والتالي

Question No. 26

Which of the following solutions is the most acidic?

- a solution with a pH = 4
- a solution with a pH = 10
- a solution with a pH = 7
- a solution with a pH = 14

Save & Next حفظ والتالي

Question No. 5

How many moles of KF are there in 75 g of KF?

- ○ 1.29 mol
- ○ 11.3 mol
- ○ 1.69 mol
- ○ 7.5 mol

Question No. 11

What substance is oxidized in the following redox reaction?
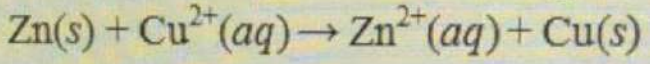
$$Zn(s) + Cu^{2+}(aq) \rightarrow Zn^{2+}(aq) + Cu(s)$$

- ○ Cu
- ○ Zn
- ○ Zn2+
- ○ Cu2+

Save & Next داخل بار

Question No. 6

How many moles of $(NH_4)_2S$ are there in 150 g of $(NH_4)_2S$?

- 1.56
- 2.21
- 1.5
- 1.04

Question No. 30

What is the IUPAC name for the following?

$$CH_3-CH_2-CH-CH_2-CH_3$$
$$|$$
$$CH_2-CH_3$$
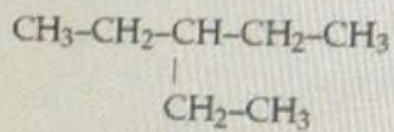
○ 3-ethylpentane
○ isoheptane
○ 2-ethylpentane
○ heptane

A

Save & Next محفوظ و الاتي

Question No. 19

When the reverse reaction is favored

- The rate of the forward reaction is greater than the reverse reaction
- The rate of the reverse reaction is less than the forward reaction.
- The equilibrium constant is much less than one; that is, $K_{eq} << 1$
- The equilibrium constant is much greater than one; that is, $K_{eq} >> 1$

C

Question No. 23

Which of the following does not describe an acidic solution?

- The $[OH^-]$ is 1.0×10^{-10}.
- The pH is less than 7.
- The $[OH^-]$ is less than the $[H_3O^+]$.
- The $[OH^-]$ is 1×10^{-4} M.

Provide the name of the compound below.
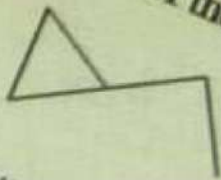
- 2-cyclopropylethane
- ethylcyclopropane
- isopropylcyclopropane
- methylcyclopropane

Question No. 19

.... reactions can go forward and backwards.

- ● Combustion
- ○ Irreversible
- ○ Reversible
- ○ Chemical

In the following reaction, which reactant is a Brønsted-Lowry base?

$$HCl(aq) + KHS(aq) \rightarrow KCl(aq) + H_2S(aq)$$

- H_2S
- HCl
- KHS
- KCl

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الملفات

Question No. 2

Group 8A elements are also called:

Question No. 1

The number of electrons in the outer energy level of a

Question No. 11

The name of the chemical compound NH₄SO₄ is:

- ammonium(II) sulfite
- ammonium sulfate
- ammonium sulfite
- ammonium(I) sulfate

Bᴵ

metals

metalloids

C

right side and middle
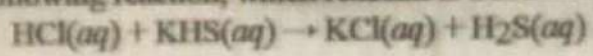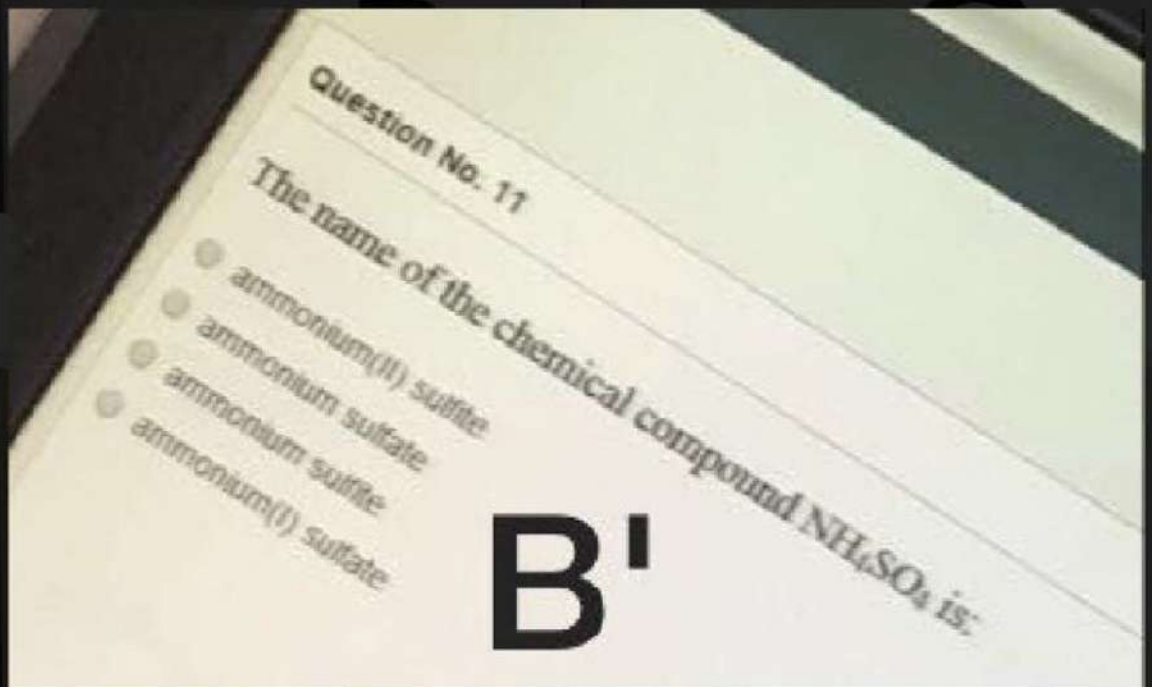
IMG_4238.JPG   IMG_4237.JPG

Question No. 5

The metallic character of elements

C

does not change going down within a group

increases going across a period

Question No. 6

Neon is an example of

C

Which of the changes listed below will shift the equilibrium position to the *left* for the following reversible reaction?

$$SO_3(g) + NO(g) + heat \rightleftharpoons SO_2(g) + NO_2(g)$$
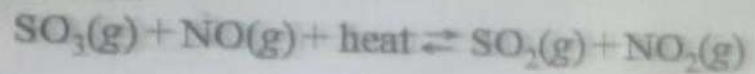
- ⦿ An increase of $[SO_3]$
- ◯ A decrease of $[NO]$
- ◯ An increase of temperature
- ◯ A decrease of $[SO_2]$

B

In the following equation identify the Brønsted-Lowry base:
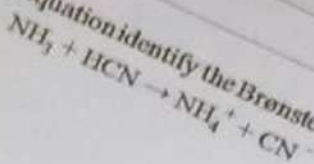
$$NH_3 + HCN \rightarrow NH_4^+ + CN^-$$

- ○ HCN
- ○ NH_4^+
- ● CN^-
- ○ NH_3

Question No. 22

Which of the following is true if the pH of a solution changes from 7 to 5?

- K_w decreases
- $[H^+]$ increases
- K_w increases
- $[H^+]$ decreases

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1901w

What organic family does the following compound belong to?
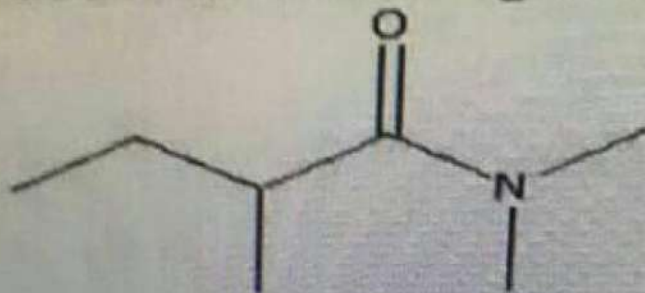
- amide
- amine
- carboxylic acid
- ether

A

Question No. 27

Conversion of an aldehyde to an alcohol is known as _____

- Addition
- Esterification
- Reduction
- Oxidation
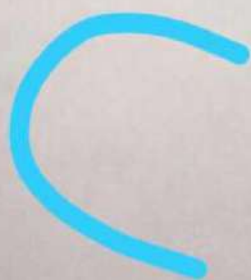
In a *basic* solution, pH is _____ and $[H_3O^+]$ is _____

- ○ $= 7, 1 \times 10^{-7} M$
- ○ $< 7, > 1 \times 10^{-7} M$
- ○ $< 7, < 1 \times 10^{-7} M$
- ○ $> 7, < 1 \times 10^{-7} M$

$\mathcal{D}$

In an *acidic* solution, pH is _____ and $[H_3O^+]$ is _____.

- $= 7, 1 \times 10^{-7}$ M
- $> 7, < 1 \times 10^{-7}$ M
- $< 7, > 1 \times 10^{-7}$ M
- $< 7, < 1 \times 10^{-7}$ M

Provide the name of the compound below.
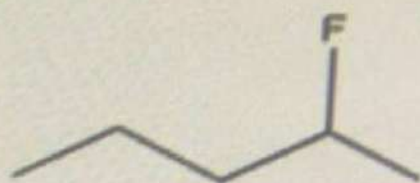
- 4-fluoro-4-methylbutane
- 2-fluoro-2-methylpentane
- 4-fluoro pentane
- 2-fluoro pentane

Save & Next حفظ وتالي

Question No. 34

Name the following compound.

$$CH_3CH_2CHCH_3$$
with branch $C\equiv CH$
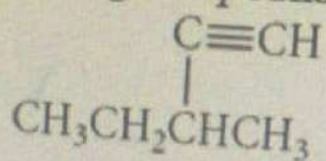
○ 3-methyl-1-pentyne
○ 3-ethyl-1-butyne
○ 2-ethynebutane
○ 3-methyl-4-pentyne

Save & Next

Name the following compound.

$$CH_3CH=CHCHCH_3$$
$$|$$
$$CH_3$$
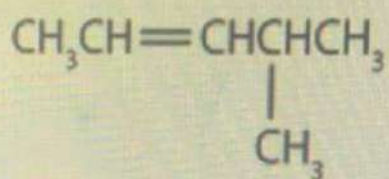
- ⦾ 2-methyl-4-pentane
- ⦾ 2-methylpentane
- ⦾ 4-methyl-2-pentene
- ⦾ 1,1-dimethyl-3-butene

Save & Next ايات التالي

What is the IUPAC name for the following compound?

$$CH_3\text{-}CH_2\text{-}CH = \overset{\overset{\displaystyle CH_3}{|}}{C}\text{-}CH_3$$
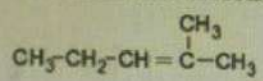
- ○ 3-methyl-4-pentene
- ○ 2-methyl-3-pentene
- ○ 2-methyl-2-pentene
- ○ 4-methyl-3-pentene
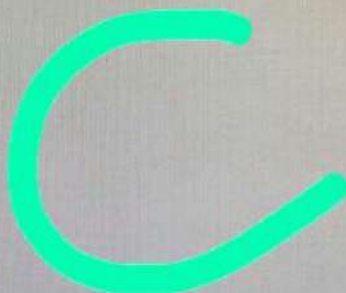
What is the IUPAC name for: $CH_3-CH_2-CH_2-CH_2-CH_2-CH_3$?

- butane
- pentane
- hexane
- heptane

Question No. 8

The most correct name for the compound SO_3 is:

- sulfur(II) oxide
- sulfur oxide
- sulfur trioxide
- mono sulfur trioxide

Save & Next ﺿﻐﻂ ﺍﻟﻘﺎﺋﻤﺔ

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Question No. 11

The gaining of one or more electrons is known as:

- reduction
- oxidation
- redox
- electrochemistry

Save & Next حفظ رقم

A

Question No. 36

The molecular formula of "cyclohexane" is _____ .

- C_6H_{12}
- C_6H
- C_6H_{10}
- C_6H_6

A

Question No. 42

How many hydrogen atoms are there in "butane" ?

- 4
- 10
- 8
- 6

B

Save & Next سنو و منامل

Question No. 40

Organic compounds that contain a "benzene ring" are called _____ compounds

- carboxylic
- saturated
- aromatic
- cycloalkane

Question No. 37

Identify the functional group:
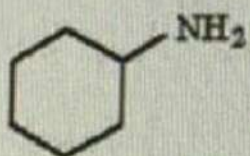
○ ketone

○ amide

○ carboxylic acid

○ amine

Question No. 38

Identify the functional group:
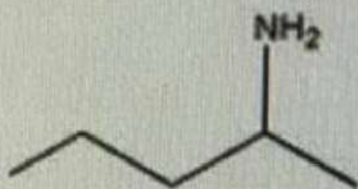
- ○ ketone
- ○ amide
- ○ carboxylic acid
- ○ amine

Question No. 39

What is the family of this organic compound?

$$CH_3-\overset{\overset{\displaystyle O}{\|}}{C}-O-CH_3$$
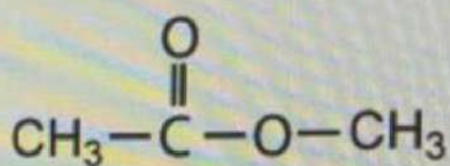
- ○ ester
- ○ aldehyde
- ○ carboxylic acid
- ○ ketone

Save & Next حفظ والتالي

Question No. 45

A chemical reaction that absorbs heat from the surroundings is called _____ and has a _____ ΔH.

- endothermic, positive
- exothermic, positive
- exothermic, negative
- endothermic, negative

Question No. 44

When heat (q) has positive value, this means that _____

- The work (w) = 0.
- The surrounding gains thermal energy.
- The system gains thermal energy.
- The system loses thermal energy.

Save & Next حفظ والتالي

Question

Question No. 11

In the chemical reaction below: what is oxidized and what is reduced in the following reaction?

$$2Al + 3Br_2 \rightarrow 2AlBr_3$$
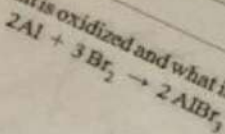
- Al is oxidized and Br_2 is reduced.
- $AlBr_3$ is reduced and Al is oxidized.
- $AlBr_3$ is reduced and Br_2 is oxidized.
- Al is reduced and Br_2 is oxidized.

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Question No. 12

What is the oxidation number of carbon in Na_2CO_3 ?

- +4
- +1
- +2
- 0

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Question No. 19

Which of the following is true before a reaction reaches chemical equilibrium?

- The amount of reactants is increasing.
- The amount of reactants and products are equal.
- The amount of reactants is decreasing.
- The amount of reactants and products are constant.

Question No. 23

The reaction that requires thermal energy to proceed is known as _____ reactio

- oxidation
- exothermic
- isothermic
- endothermic

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Question No. 8

Determine the empirical formula for a compound that contains C, H and O. It contains 52.14% C, 13.13% H and 34.73% O by mass.

- $C_2H_6O_2$
- $C_4H_{13}O_2$
- C_2H_6O
- CH_4O_3

$$C_{\frac{52.14}{12}} \quad H_{\frac{13.13}{1}} \quad O_{\frac{34.73}{16}}$$

$$C_{\frac{4.33}{2.17}} H_{\frac{13.13}{2.17}} O_{\frac{2.17}{2.17}}$$

$$C_2 H_6 O_1$$

Question No. 23

A reaction that releases energy as it occurs, is classified as _____.

○ oxidation-reduction reaction
○ exothermic reaction
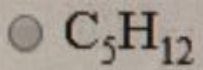○ catalyzed reaction
○ endothermic reaction

Question No. 14

Which of the following compounds gives a strong electrolyte aqueous solution?

○ NH_3
◉ HI
○ CH_3COOH
○ $C_6H_{12}O_6$

Save & Next حفظ والتالي

Question No. 31
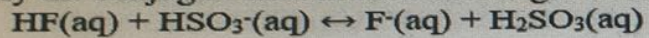
The formula for pentyne is
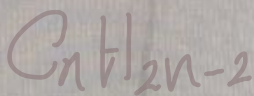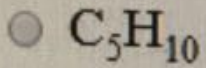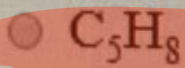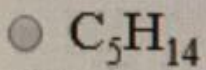
○ C_5H_{12}

○ C_5H_{14}

○ C_5H_8 C_nH_{2n-2}

○ C_5H_{10}

Identify the conjugate acid in the following reversible reaction.

$$HF(aq) + HSO_3^-(aq) \leftrightarrow F^-(aq) + H_2SO_3(aq)$$

○ $H_2SO_3(aq)$

○ $HF(aq)$

○ $HSO_3-(aq)$

○ $F^-(aq)$

Question No. 37

Oxidation of an aldehyde produces a

- ○ ester.
- ○ carboxylic acid.
- ○ alcohol.
- ○ ketone.

What is the equilibrium constant expression for the following reaction?

$$2\ CH_4(g) + O_2(g) \rightleftharpoons 2\ CO(g) + 4\ H_2(g)$$

- $Kc = [CH_4]^2\ [O_2]\ /\ [CO]^2\ [H_2]^4$
- $Kc = [CH_4]\ [O_2]\ /\ [CO]\ [H_2]$
- $Kc = [CO]\ [H_2]\ /\ [CH_4]\ [O_2]$
- $Kc = [CO]^2\ [H_2]^4\ /\ [CH_4]^2\ [O_2]$

Question No. 29

The change in enthalpy (ΔH) has negative value means that ...

- ○ The energy flows into the system: endothermic.
- ○ The energy flows into the system: exothermic.
- ○ The energy flows out of the system: exothermic.
- ○ The energy flows out of the system: endothermic.

Question No. 24

The change in enthalpy (ΔH) has negative value means that ....

- ○ The energy flows into the system.
- ○ The energy is added to the system.
- ○ The system is endothermic.
- ○ The energy flows out of the system.

Question No. 18

When a reaction is at equilibrium,

○ no more reactants are converted to products.

○ the forward and reverse reactions occur at the same rate.

○ the reaction is no longer reversible.

○ the whole reaction stops.

Question No. 15

Which of the following is the strongest acid?

- HNO_3
- H_2CO_3
- NaOH
- H_3PO_4

Organic compounds that contain a benzene ring or possess certain properties similar to those of benzene are called _____

- ○ saturated
- ○ aromatic
- ○ carboxylic
- ○ acidic

Proteins are polymers. They consist of monomer units which are

- amino acids
- aldehydes
- ketones
- amines

Question No. 34

Provide the name of the compound below.

- ○ 5-methyl-3-ethyl-1-hexyne
- ○ 3-ethyl-5-methyl-1-hexyne
- ○ 4-ethyl-2-methyl-5-hexyne
- ○ 2-methyl-4-ethyl-5-hexyne

Save & Next حفظ والتلي
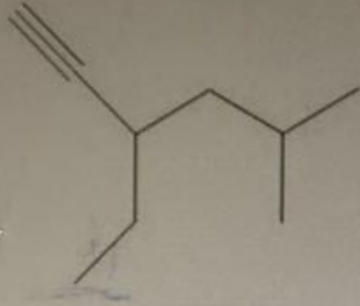
Question No. 28

For a given process at constant pressure, ΔH is negative. This means that the process is _____

- ○ equithermic
- ○ exothermic
- ○ endothermic
- ○ energy

Save & Next حفظ و 13

Question No. 20

An aqueous solution has a pH of 7.3. We would consider this solution to be:

- ○ slightly basic
- ○ slightly acidic
- ○ very basic
- ○ very acidic

Question:
Another term for alkanes is

Options:

- saturated hydrocarbons.
- unsaturated hydrocarbons.
- alkenes.
- alkynes.

A

Question:
What is the term for a family of unsaturated hydrocarbon compounds having a double bond

Options:

- alkynes
- aromatics
- alkanes
- alkenes

D

Question:

What class of hydrocarbons has the general formula C_nH_{2n}?

Options:

- ⊙ alkenes
- ⊙ aromatics
- ⊙ alkynes
- ⊙ alkanes

A

Question:

In organic chemistry, compounds are generally classified by

Options:

○ taste.
○ color.
○ odor.
○ functional group.

D

Question:

Identify the functional group:
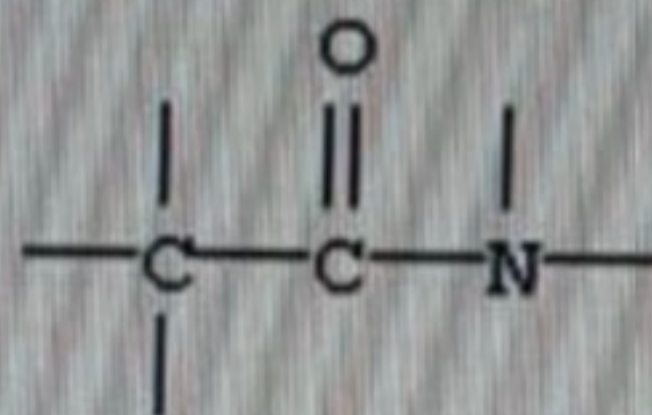
Options:

- ⊙ alcohol
- ⊙ amine
- ⊙ amide
- ⊙ ester

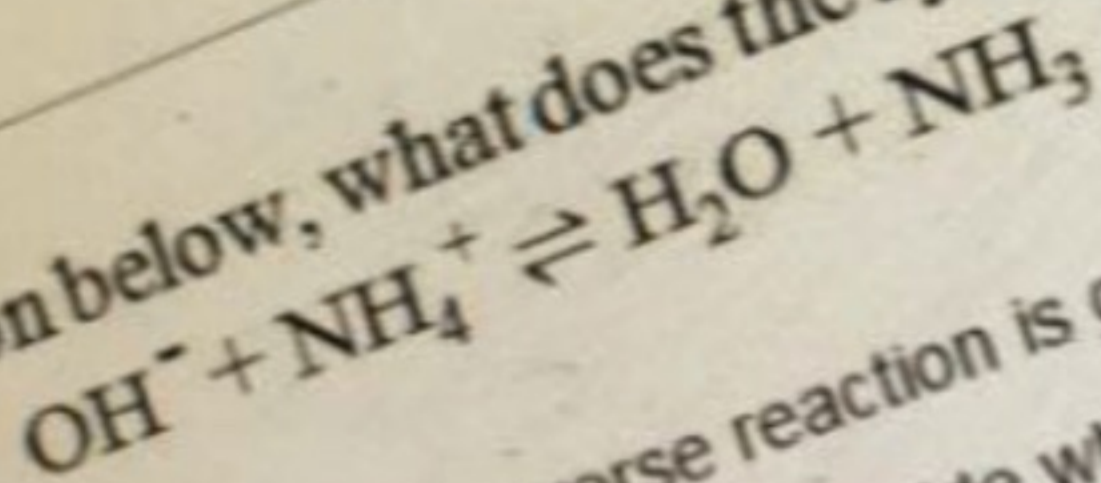## Question No. 35

Provide the name of the compound below.
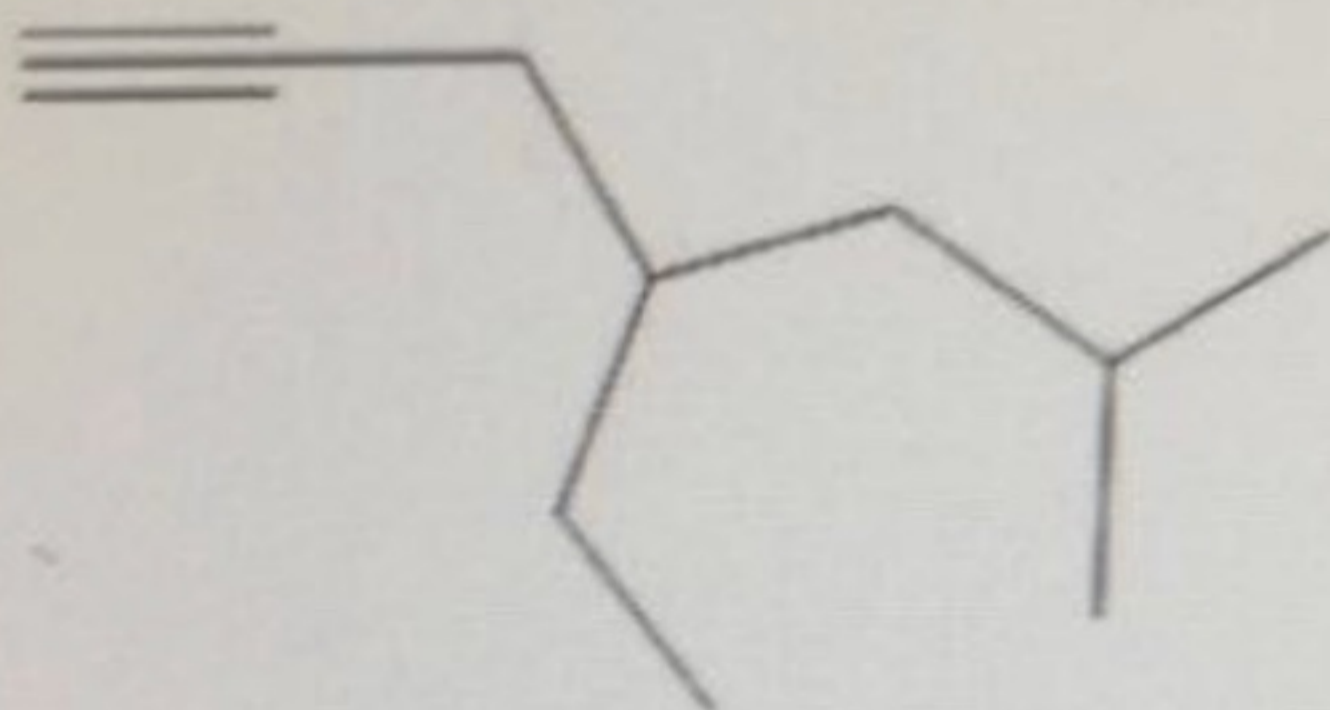
- ○ 2-ethyl-2-methyl-6-heptyne
- ○ 4-ethyl-6-methyl-1-heptyne
- ○ 4-ethyl-2-methyl-6-heptyne
- ○ 2-methyl-4-ethyl-1-heptyne

Question No. 23

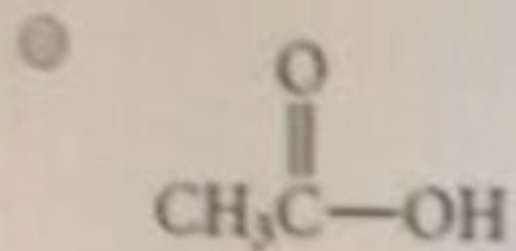In the reaction below, what does the symbol $\rightleftharpoons$ mean?
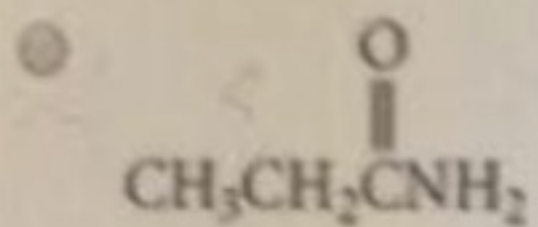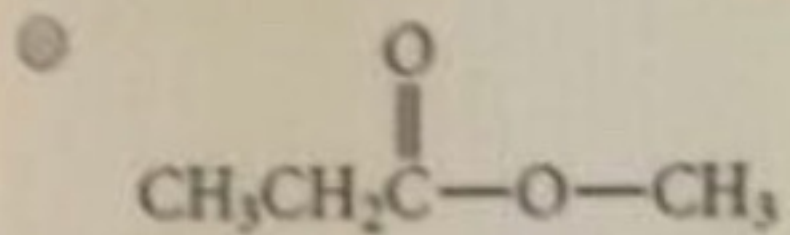
$$OH^- + NH_4^+ \rightleftharpoons H_2O + NH_3$$

○ It means that the rate of reverse reaction is greater than the forward reaction.

○ It means that the reaction cannot decide which way to go.

○ It means that the rates of forward and reverse reactions are equal.

○ It means that the forward reaction does not progress

Question No. 37

Which of the following compounds is an ester?

○ $CH_3CH_2\overset{\displaystyle O}{\overset{\|}{C}}-O-CH_3$

○ $CH_3CH_2\overset{\displaystyle O}{\overset{\|}{C}}NH_2$

○ $CH_3\overset{\displaystyle O}{\overset{\|}{C}}-OH$

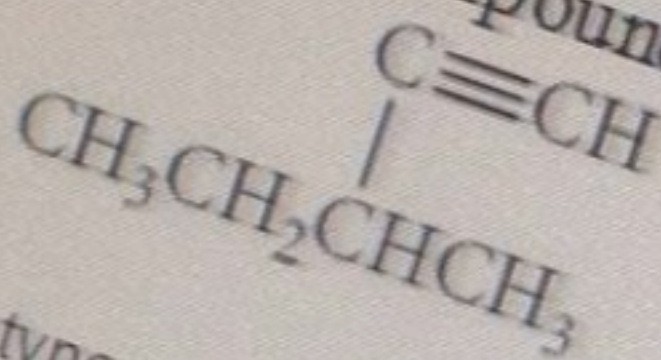○ $CH_3CH_2\overset{\displaystyle O}{\overset{\|}{C}}CH_3$
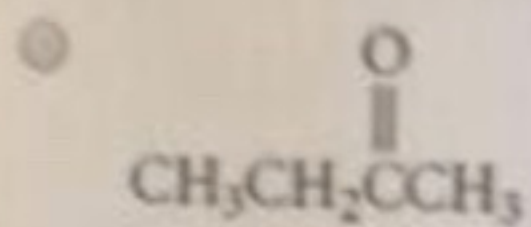
Question No. 27

Lewis base is defined as

B

- an electron pair acceptor
- an electron pair donor
- Produces OH⁻ ions in an aqueous solution
- a proton acceptor

Question No. 35

Name the following compound.

$$CH_3CH_2CHCH_3$$

with $C\equiv CH$ group attached

- 3-methyl-4-pentyne
- 3-methyl-1-pentyne
- 2-ethynebutane
- 3-ethyl-butyne

B

Question No. 40

Amino acids are the "building blocks" of

○ proteins.
○ vitamins
○ fats.
● carbohydrates.

A

CO_2 acts as a Lewis acid in the reaction $CaO(s) + CO_2 \rightarrow CaCO_3(s)$ because it _____.

- turns blue litmus to red
- reacts with a metal
- is a proton donor
- is an electron-pair acceptor

D

What is the systematic name suffix of carboxylic acid?

- -oic acid
- oate.
- -al
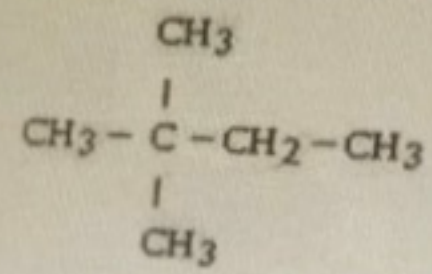- -one

A

What is the IUPAC name for the following compound?

○ 2-pentene

○ 1-pentene

○ 1-methylbutene

○ 3-pentene

A

Question No. 32

What is the IUPAC name for the following?

$$CH_3 - \underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}} - CH_2 - CH_3$$

- 2,2-dimethylbutane
- 3,3-dimethylbutane
- 2-dimethylbutane
- dimethylbutane

A

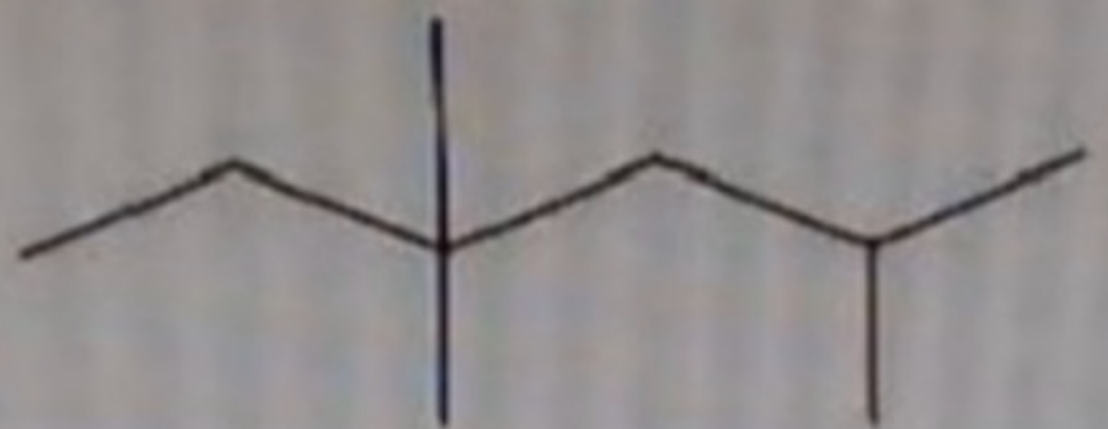All of the following is a general property of a basic solution Except?

- tastes sour
- neutralizes acids
- feels slippery
- turns litmus paper blue

A

Question No. 32
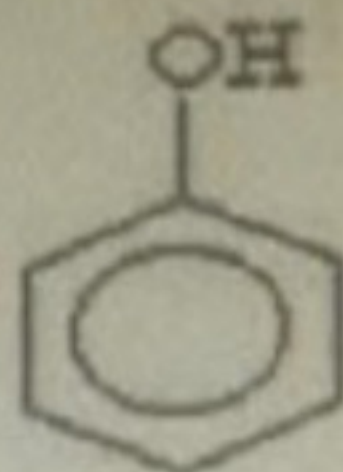
What is the IUPAC name of the following structure?

- 1,1,3,3-tetramethylpentane
- 2,2,5-trimethylhexane
- 2,4,4-trimethylhexane
- 3,3,5-trimethylhexane

What is the name of compound shown below?

- aniline
- benzene
- phenol
- toluene

C

Question No. 15

In a neutralization reaction

- ⦿ an acid and a base react to form a salt and water.
- ⦿ water and a salt react to form an acid and a base.
- ⦿ an acid and a salt react to form water and a base.
- ⦿ two acids react to form water.

A

Question No. 13
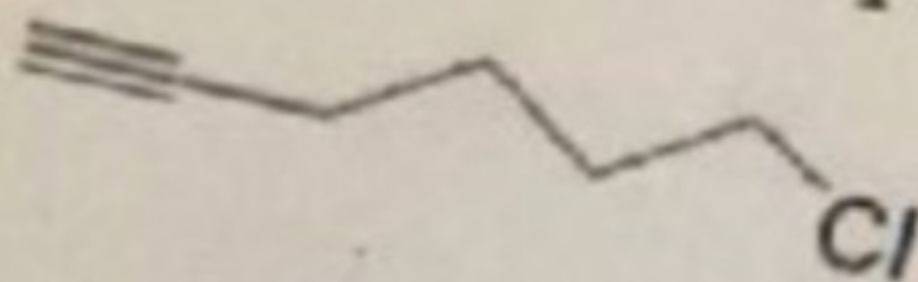
In a solution, the solvent is _____.

- always a solid
- the substance present in the greatest amount
- always water
- substance present in a small amount

B

What is the IUPAC name for the following compound?

- 6-chloro-1-pentyne
- 6-chloro-2-pentyne
- 1-chloro-5-hexyne
- 6-chloro-1-hexyne

D

Question:

What is the IUPAC name for CH_3-CH=CH-CH_2-CH_2-CH_3?

Options:

- 2-hexene
- 1-hexene
- 3-hexene
- hexene

A

Which of the following is a diprotic acid?

$\frac{x^{\frac{1}{3}}}{x^{-3}}$

- H_3PO_4
- HNO_3
- H_2SO_4
- $HC_2H_3O_2$
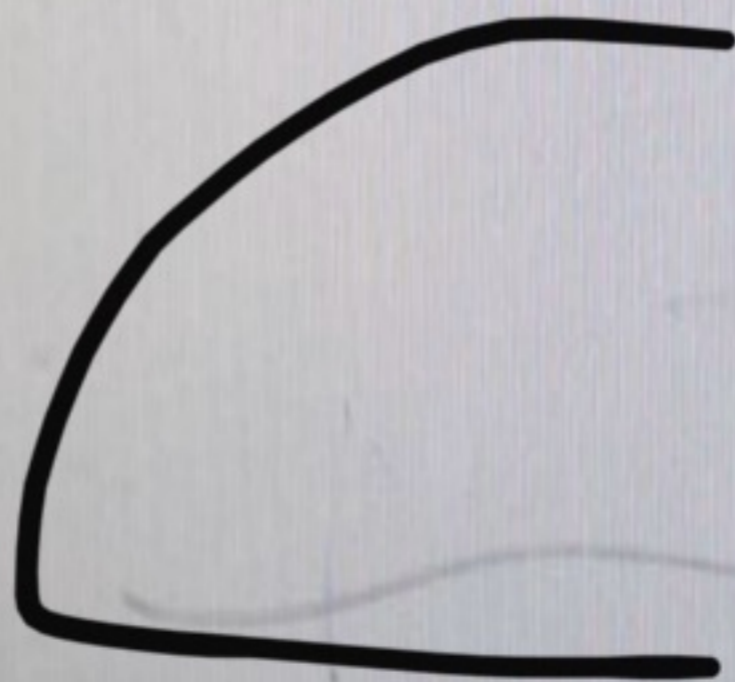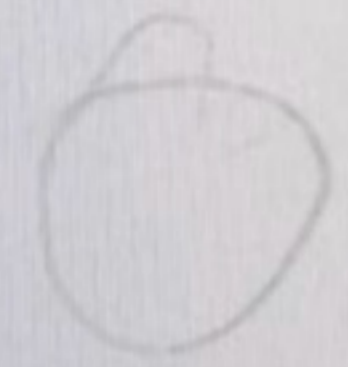
Question No. 14

Which of the following indicates a liquid in a chemical equation?

- ○ (g)
- ◉ (l)
- ○ (aq)
- ○ (s)

Question:

What is the common name for $HC\equiv CH$?

Options:

○ propyne
○ ethene
◉ acetylene
○ ethylene