SS
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CHEMISTRY REVISION KIT

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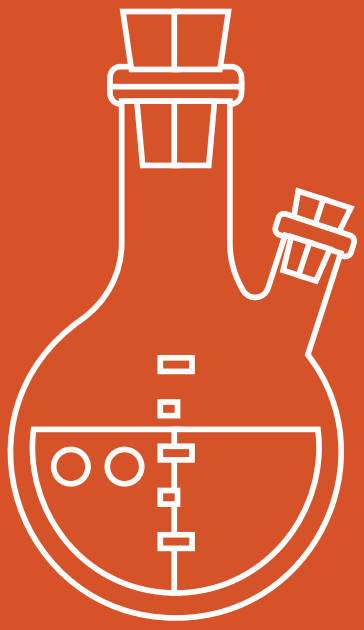
Contents

THEME 01



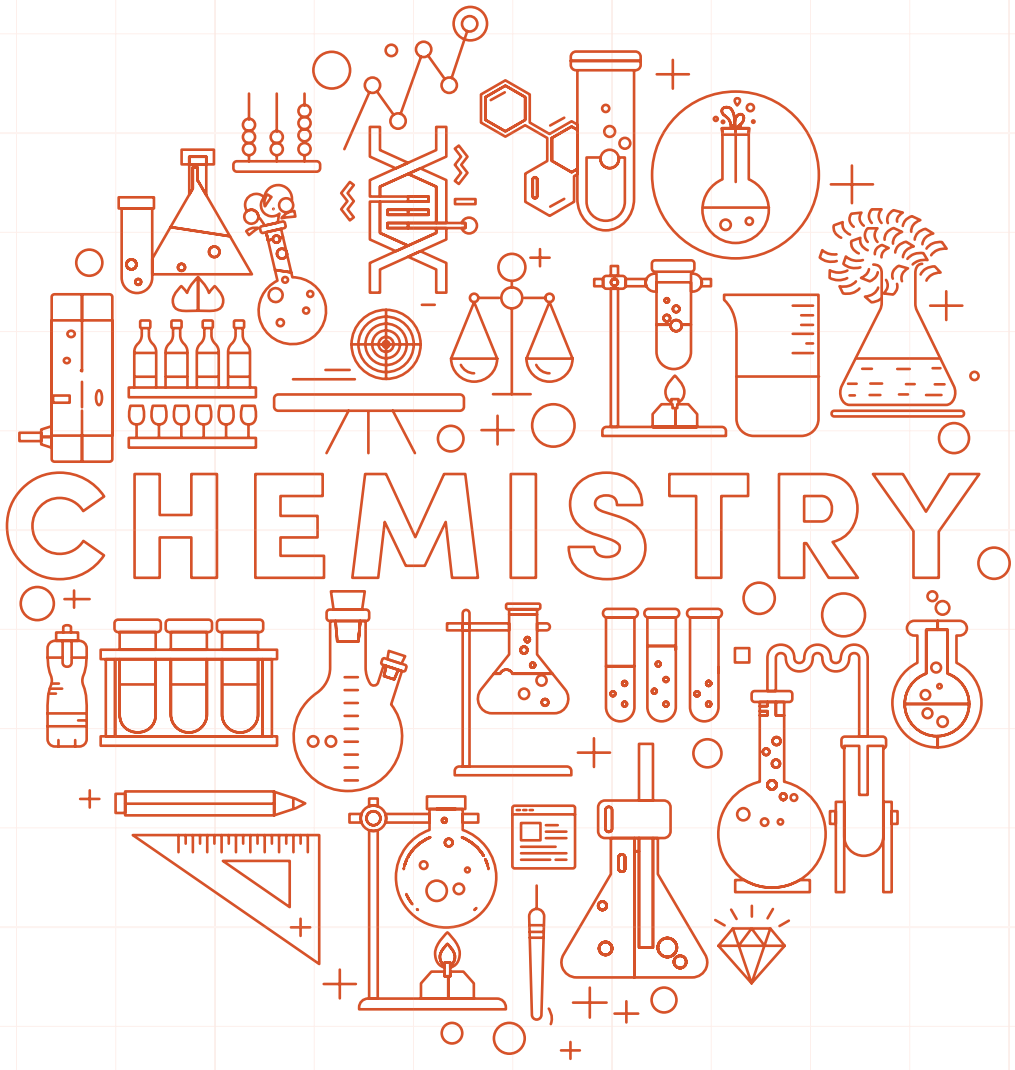
Chemical World.

Chemistry and Industry.

Chemistry of life.

QUANTITATIVE AND QUALITATIVE ANALYSIS

INTERACTIVE ASSESSMENT QUESTIONS AND ANSWERS



MALEZI
EMPOWERING THOSE WHO CARE

1. 25.0cm^3 of a solution containing 1.0g impure sodium hydroxide pellets per 250cm^3 required 20.0cm^3 of 0.050$moldm^{-3}$ tetraoxosulphate (vi) acid for complete neutralization. Determine the percentage purity of the sodium hydroxide pellets. (Na=23, O=16, H=1.0, S=32.0)

A 20%
B 50%
C 80%
D 100%
E 60%

Correct Answer

The Correct answer is **C.**

Solution

Equation for the reaction is:

$$H_2SO_{4(aq)} + 2NaOH_{(aq)} \longrightarrow Na_2SO_{4(aq)} + 2H_2O_{(l)}$$

$C_A = 0.050moldm^{-3}$, $C_B = ?$, $V_A = 20.0cm^3$, $V_B = 25.0cm^3$

$$\text{By Using} = \frac{C_AV_A}{C_BV_B} = \frac{n_A}{n_B}$$

$$\frac{0.050 \times 20}{C_B \times 25} = \frac{1}{2}$$

$$C_B = \frac{0.050 \times 20 \times 2}{25 \times 1} = \frac{1}{2} = 0.080moldm^{-3}$$

Molar mass of pure NaOH = 23 + 16 + 1 = 40 $gmol^{-1}$

Mass concentration of pure NaOH = C_B x molar mass = (0.080 X 40) gdm^{-3}

= 3.2gdm^{-3}

Concentration of impure NaOH = 1.0gper 250cm^3 = 4.0gdm^{-3}

$$\% \text{ Purity of NaOH pellets} = \frac{3.2}{4} \times \frac{100}{1} = 80\%$$

2. 250cm^3 of aqueous solution of ethanedioic acid (oxalic acid) crystals, $H_2C_2O_4.XH_2O$ contains 5g of the crystals. If 25cm^3 of this solution require 15.9cm^3 of 0.5moldm^{-3} NaOH solution to neutralize it. Calculate the number of molecules of water of crystallization in the acid. (H=1, C=12, O=16)

A 4.0
B 3.0
C 2.0
D 1.0
E 0

Correct Answer

The Correct answer is **C.**

Solution

Equation for the reaction is:

$$H_2C_2O_4 + 2NaOH \longrightarrow Na_2C_2O_4 + 2H_2O$$

By Using $= \frac{C_AV_A}{C_BV_B} = \frac{n_A}{n_B}$ **We get,** $\frac{C_A \times 25}{0.5 \times 15.9} = \frac{1}{2}$

$$C_A = \frac{0.5 \times 15.9}{25 \times 2} = 0.159 moldm^{-3}$$

To find the value of X, Mass concentration of hydrated acid in 5g in 250cm^3

i.e. 250cm^3 contain 5g of hydrated acid.

1000cm^3 contain 5g $\times \frac{1000}{250}$ **= (5 x 4)g per dm^3 = 20g per dm^3**

Molar mass of hydrated acid $= \frac{\text{Mass concentration}}{\text{Molar concentration}} = \frac{20}{0.159} = 125.79 gmol^{-1}$

But molar mass of H2C2O4.XH2O = 90 + 18X

Therefore, 90 + 18x = 125.79

18x = 125.79 – 90

18x = 35.79

$$x = \frac{35.79}{18} = 2.0$$

The number of molecules of water of crystallization in ethanedioic acid crystal is 2

3. Consider the reaction represented by the equation $XO + YO \longrightarrow X + YO_2$; In the reaction YO acts as

A	An acidic oxide
B	A reducing agent
C	A weak base
D	An oxidizing agent
E	An amphoteric solution

Correct Answer

The correct answer is **B.**

Solution

$XO + YO \longrightarrow X + YO_2$

By calculating the oxidation number of the constituent elements

XO + YO $\longrightarrow$ X + YO_2

For **XO**
X + (-2) = 0
X – 2 = 0
X = 0 + 2 = +2

For **YO**
Y + (-2) = 0
Y – 2 = 0
Y = 0 + 2 = +2

For **X**
The oxidation number = 0 (element in uncombined state)

From the equation above, the oxidation number of Y increases from +2 in YO to +4 in YO_2.
Hence, YO acts as a reducing agent.

4. Consider the redox reaction as represented by the equation:
$I_{2(aq)} + 2S_2O_3^{2-}{}_{(aq)} \longrightarrow 2I^-_{(aq)} + S_4O_6^{2-}{}_{(aq)}$ Which of the species in the equation is reduced?

A $S_4O_6^{2-}{}_{(aq)}$
B $S_2O_3^{2-}{}_{(aq)}$
C $I_{2\ (aq)}$
D $2I^-_{(aq)}$
E Both $I^-_{(aq)}$ and $S_2O_3^{2-}{}_{(aq)}$

Correct Answer

The correct answer is **C.**

Explanation

$I_{2(aq)} + 2S_2O_3^{2-}{}_{(aq)} \longrightarrow 2I^-_{(aq)} + S_4O_6^{2-}{}_{(aq)}$

By calculating the oxidation number of the constituent elements

$I_{2(aq)} + 2S_2\ \ O_3^{2-}{}_{(aq)} \longrightarrow 2I^-_{(aq)} + S_4\ \ O_6^{2-}{}_{(aq)}$

0 +2 −2 −1 +2.5 −2

i.e For I_2	**For $S_2O_3^{2-}$**	**For I^-**	**For $S_4O_6^{2-}$**
$I_2 = 0$	$2S + 3(-2) = -2$	$I- = -1$	$4S + 6(-2) = -2$
(Element in	$2S - 6 = -2$		$4S - 12 = -2$
uncombined	$2S = -2 + 6$		$4S = 10$
state)	$2S = +4$		$S = +2.5$
	$S = +2$		

From the equation above, the oxidation number of I decreases from 0 in I_2 to -1 in I^-
Hence, I_2 acts as an oxidizing agent but itself is reduced to I^-

5. Which of the following gives a green gelatinous precipitate when its compound is treated with $NaOH_{(aq)}$ and turns reddish brown on exposure to air

A NH_4^+
B Ca^{2+}
C Fe^{2+}
D Fe^{3+}
E K^+

Correct Answer

The correct answer is **C.**

Explanation

S/N	Test	Observation	Inference
1.	To the unknown solution, add dilute $NaOH_{(aq)}$ in drops and then in excess	Green gelatinous precipitate insoluble in excess $NaOH_{(aq)}$ and turns reddish-brown on exposure to air.	Fe^{2+} confirmed

6. When aqueous ammonia is added to one of the following solutions, a white precipitate which dissolves in excess ammonia is formed. Identify the solution.

A $ZnCl_{2(aq)}$
B $Pb(NO_3)_{2(aq)}$
C $CuSO_{4(aq)}$
D $FeSO_{4(aq)}$
E $K_2CO_{3(aq)}$

Correct Answer

The correct answer is **A.**

Explanation

S/N	Test	Observation	Inference
1	To the unknown solution, add dilute $NaOH_{(aq)}$ in drops and then in excess	White gelatinous precipitate formed which is soluble in excess $NaOH_{(aq)}$	Zn^{2+} or Pb^{2+} or Al^{3+} present
2	To the unknown solution, add a few drops of dilute $NH_{3(aq)}$; And then in excess	White gelatinous precipitate formed Precipitate formed which is soluble in excess $NH_{3(aq)}$	Zn^{2+} or Pb^{2+} or Al^{3+} present Zn^{2+} confirmed

7. Which of the following pairs of solutions will produce a precipitate when mixed?

A $Pb(NO_3)_{2(aq)}$ and $NaCl_{(aq)}$
B $MgSO_{4(aq)}$ and $NaCl_{(aq)}$
C $MgSO_{4(aq)}$ and $HCl_{(aq)}$
D $ZnCl_{2(aq)}$ and $Na_2SO_{4(aq)}$
E $NaOH_{(aq)}$ and $HNO_{3(aq)}$

Correct Answer

The correct answer is **A.**

Explanation

S/N	Test	Observation	Inference
1.	To the unknown solution, add $AgNO_{3(aq)}$ or $Pb(NO_3)_{2(aq)}$ in drops	White precipitate is formed	Cl^- , present

8. If chlorine gas is tested with a damp starch-iodide paper, the paper turns.

A Green
B Pale-red
C Blue-black
D Orange
E Red

Correct Answer

The correct answer is **C.**

Explanation

Yes, that's correct! Turning of starch-iodide paper blue-black confirms the presence of chlorine

9. A salt sample was added to cold dilute HCl. The gas evolved turned acidified $K_2Cr_2O_7$ solution to green. It can be inferred that the salt sample contains

A SO_4^{2-}
B SO_3^{2-}
C CO_32-
D S^{2-}
E NH^{4+}

Correct Answer

The correct answer is **C.**

Explanation

S/N	Test	Observation	Inference
1	Sample + Cold dilute HCl	Evolution of a colourless and a poisonous acidic gas with an irritating or choking smell. It turns moist blue litmus paper red.	The gas is SO_2
2	Gas bubbled through $K_2Cr_2O_7$ acidified with dilute H_2SO_4	The colour of $K_2Cr_2O_7$ changes from golden yellow or orange to green.	The gas is SO_2

10. The presence of un-saturation in an organic compound can be confirmed by the use of the reagent,

A Tollen's reagent
B Fehling's solution
C Bromine water
D Million,s reagent
E Acidified $K_2Cr_2O_7$

Correct Answer

The correct answer is **C.**

Explanation

Unsaturated hydrocarbons decolorize the reddish brown bromine water but saturated hydrocarbon do not

11. Which of the following organic compounds would give an effervescence with sodium hydrogentrioxocarbonate (IV) solution?

A Tollen's reagent
B Fehling's solution
C Bromine water
D Million,s reagent
E Acidified $K_2Cr_2O_7$

Correct Answer

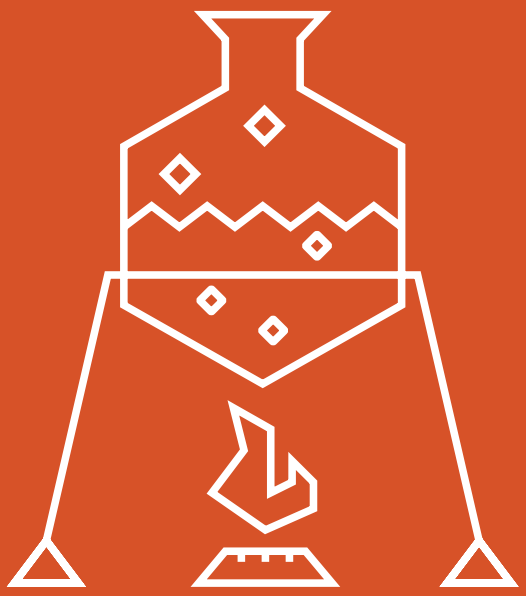
The correct answer is **B.**

Explanation

Alkanoic acids are colourless liquid with a characteristic sharp and pungent smell. The dilute solution had a sour taste. It turns blue litmus red.

S/N	Test	Observation	Inference
1	To little amount of the unknown substance, add $NaHCO_{3(aq)}$ or $KHCO_{3(aq)}$	There is effervescence, a colourless and odorless gas is given off which is acidic to litmus paper and turns lime water milky.	The gas is CO_2 and hence the substance is carboxylic acid.
2	To $2cm^3$ of the unknown solution, add $2cm^3$ of ethanol, followed by $1cm^3$ of conc. $H_2SO_{4(aq)}$ then heat the mixture.	A liquid with the characteristic pleasant fruity smell is formed.	This indicates the presence of organic acid.

THEME 02



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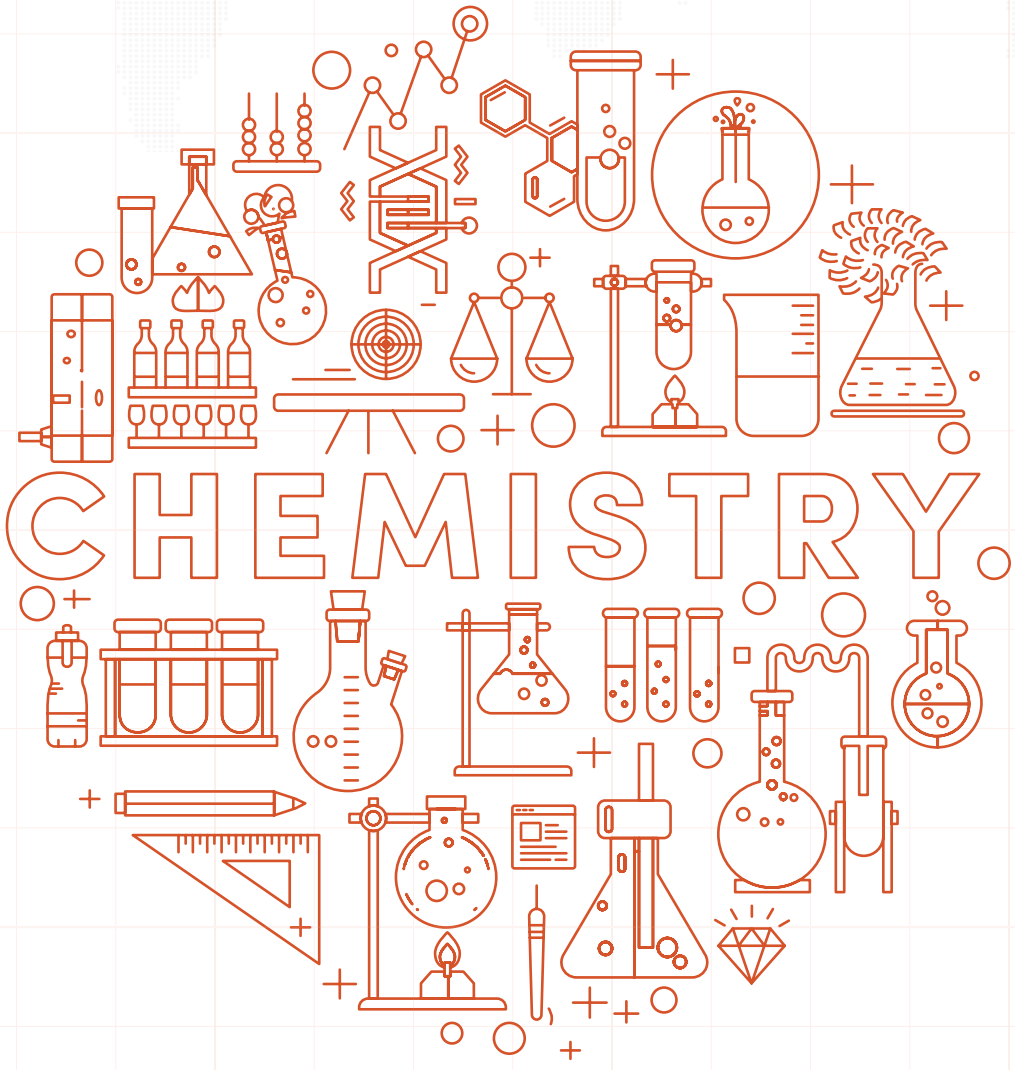
PETROLEUM OR CRUDE OIL

INTERACTIVE ASSESSMENT QUESTIONS AND ANSWERS



MALEZI
EMPOWERING THOSE WHO CARE

1. The separation of petroleum fraction depends on the differences in their

   A Melting points
   B Molar masses
   C Solubilities
   D Boiling points
   E Physical state

Correct Answer

The correct answer is **D.**

Explanation

The petroleum fractions with the lower boiling point distill first before the petroleum with a higher boiling point.

2. Which of the following is not a direct petroleum product?

   A Methane
   B Ethanol
   C Petrol
   D Vaseline
   E Kerosene

Correct Answer

The correct answer is **B.**

Explanation

Yes. Organic compounds such as ethanol, ethane, propanol, benzene and toluene are not direct petroleum products

3. Which of the following fractions of crude oil is likely to contain the hydrocarbon $C_{12}H_{26}$?

   A Kerosene
   B Naphtha
   C Gas oil
   D Fuel oil
   E Bitumen

Correct Answer

The correct answer is **A.**

Explanation

Kerosene is a mixture of hydrocarbons containing C_{11} to C_{15} carbon atoms per molecules

4. Which of the following hydrocarbons is not likely to be present in petrol?

A $C_{14}H_{30}$
B $C_{10}H_{22}$
C C_9H_{20}
D C_7H_{16}
E C_5H_{12}

Correct Answer

The correct answer is **A.**

Explanation

Kerosene is a mixture of hydrocarbons containing C5 to C10 carbon atoms per molecules

5. Petrol can be obtained from diesel by

A Distillation
B Cracking
C Catalysis
D Polymerization
E Dehydrogenation

Correct Answer

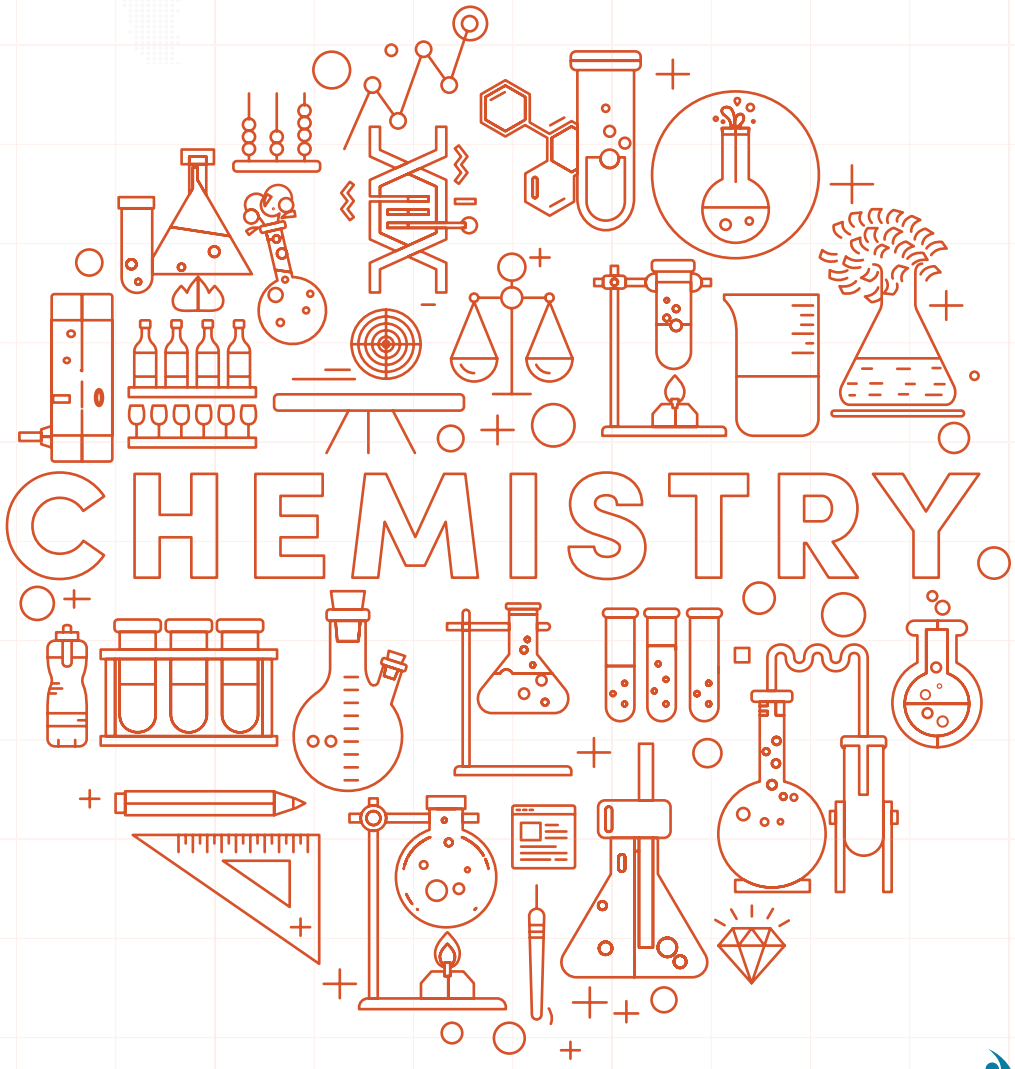
The correct answer is **B.**

Explanation

Cracking is the process by which a heavier hydrocarbon is split into two more lighter hydrocarbon molecules.

METALS AND THEIR COMPOUNDS

INTERACTIVE ASSESSMENT QUESTIONS AND ANSWERS



MALEZI
EMPOWERING THOSE WHO CARE

1. Which of the following metals is the strongest reducing agent?

A Sodium
B Silver
C Potassium
D Copper
E Gold

Correct Answer

The correct answer is **C.**

Explanation

Potassium is the first element in the activity series. So, it is the strongest reducing agent

2. Metals can be stretched to wires because they are

A Ductile
B Good conductors
C Lustrous
D Malleable
E Sonorous

Correct Answer

The correct answer is **A.**

Explanation

That metal is ductile means it can be drawn into wires

3. Which of the following arrangements is in order of increasing metallic property?

A Li < Na < K
B Na < Li < K
C K < Na < Li
D K < Li < Na
E Na < K < Li

Correct Answer

The correct answer is **A.**

Explanation

Potassium(K) has the highest metallic property, next is sodium(Na) and next is Lithium (Li)

4. The following substances are ores of metals except.

A Bauxite
B Cuprite
C Cassiterite
D Graphite
E Magnetite

Correct Answer

The correct answer is **D.**

Explanation

Bauxite is an ore of aluminium, Cuprite is an ore of copper, Cassiterite is an ore of tin, and haematite is an ore of iron. But graphite is not an ore but an allotrope (a form) of carbon.

5. Which of the following is the main compound used for removing impurities from bauxite?

A $NaOH$
B $CaCO_3$
C Na_3Al_6
D H_2SO_4
E $MgSO_4$

Correct Answer

The correct answer is **A.**

Explanation

Sodium hydroxide is used to remove impurities during the extraction of Aluminium. Powdered aluminium oxide is dissolved under pressure in hot concentrated sodium hydroxide solution. The aluminium oxide forms sodium aluminate solution.

6. Zinc displaces copper from an aqueous solution of copper (II) salt because.

A Copper is a transition element
B Copper is a moderately reactive metal
C Zinc is more reactive than copper
D Zinc reacts with both acids and alkalis.
E Zinc and Copper have reducing properties

Correct Answer

The correct answer is **D.**

Explanation

Since Zinc is more reactive than copper, it displaces copper from copper solution.

7. A metal that is widely used in the manufacture of paints and overhead electric cables is

A Aluminum
B Copper
C Iron
D Lead
E Sodium

Correct Answer

The correct answer is **A.**

Explanation

Aluminium is widely used in the manufacture of paints and overhead electric cables

8. The following transition metal ions would be coloured in aqueous solution except

A Cr^{3+}
B Fe^{3+}
C Mn^{3+}
D SC^{3+}
E Fe^{2+}

Correct Answer

The correct answer is **A.**

Explanation

Scandium and scandium ion do not have electrons in the d-orbital. So, do not form coloured ions.

9. The following are characteristics of transition elements except

A Formation of complex ions
B Fixed oxidation states
C Formation of coloured compounds
D Catalytic abilities
E Variable oxidation states

Correct Answer

The correct answer is **B.**

Explanation

Transition elements have variable oxidation states

10. One of the characteristics of transition metal is

A Reducing ability
B Ductility
C Ability to conduct electricity
D Formation of coloured ions
E Sonorous

Correct Answer

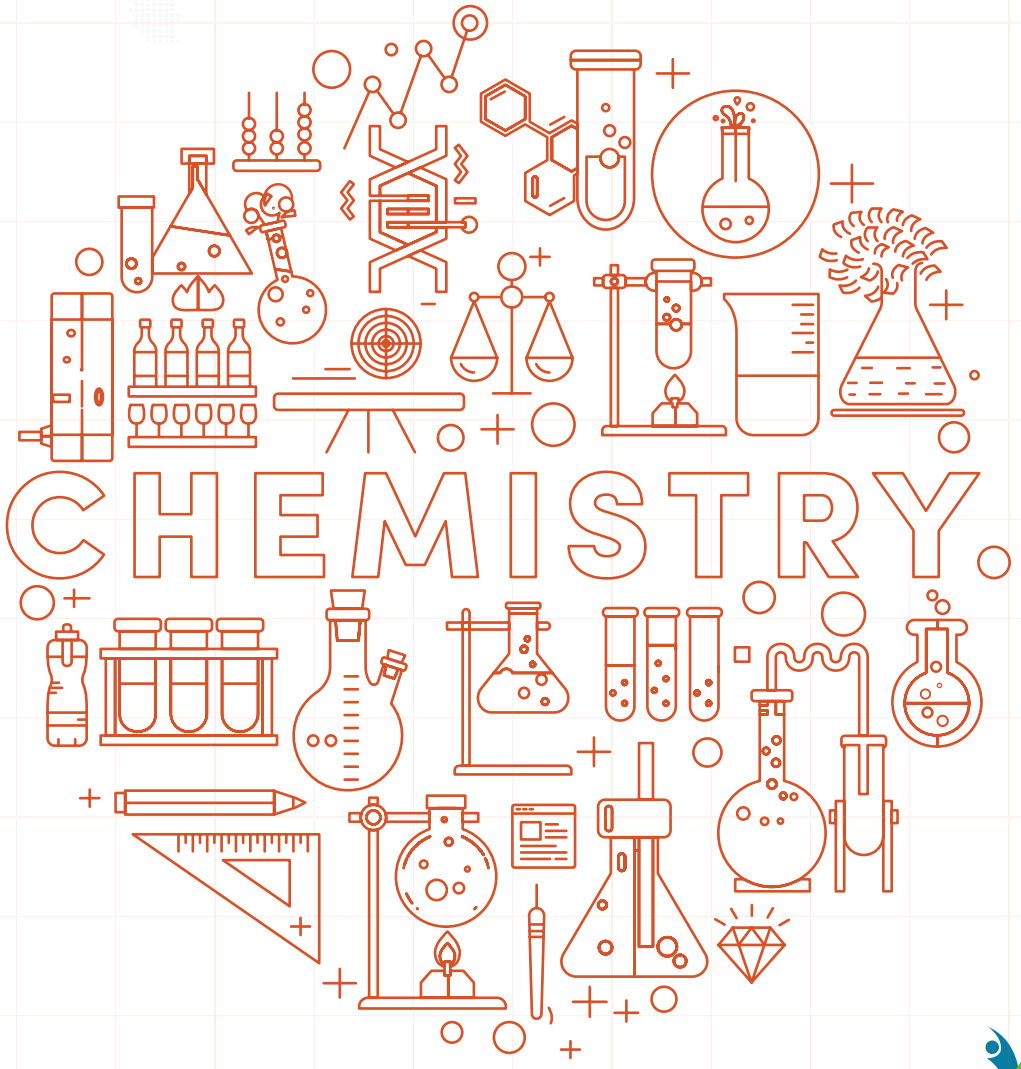
The correct answer is **D.**

Explanation

Formation of coloured ions: - This is due to partial filled d-orbital

IRON

INTERACTIVE ASSESSMENT QUESTIONS AND ANSWERS



MALEZI
EMPOWERING THOSE WHO CARE

1. Iron is extracted from which of the following ores?
   I. Haematite, II Bauxite, III Magnetite, IV Cassiterite

A I and II only
B I and III only
C I, II, and III only
D I, II, III, and IV
E II and III only

Correct Answer

The correct answer is **B.**

Explanation

The ores are, I. Haematite, Fe_2O_3 and II. Magnetite, Fe_3O_4
Other ores of iron are
i. Iron pyrites, FeS_2
ii. Siderite or spathic iron ore, $FeCO_3$
iii. Limonite, $Fe_2O_3.H_2O$
But Bauxite, $Al_2O_3.2H_2O$, and Cassiterite, SnO_2 are ores of Aluminium and Tin respectively.

2. An element that would produce colored ions in aqueous solutions is?

A Calcium
B Magnesium
C Sodium
D Iron
E Potassium

Correct Answer

The correct answer is **D.**

Explanation

All transition elements such as Vanadium, copper, Iron, Manganese, etc. produce coloured ions in an aqueous solution.

3. During the extraction of iron, the limestone which is fed into the blast furnace produces CaO which removes

A Excess air
B Unburnt Coke
C Earthy impurities
D Molten Iron
E Marbles

Correct Answer

The correct answer is **C.**

Explanation

The earthy impurities present is silica which reacts with calcium oxide to form calcium trisilicate (iv), $CaSiO_3$

$$CaO_{(s)} + SiO_{2(s)} \longrightarrow CaSiO_{3(s)}$$

4. Metals which only react with steam when they are red hot include

A Copper
B Sodium
C Calcium
D Gold
E Iron

Correct Answer

The correct answer is **E.**

Explanation

Iron reacts with steam only when they are red-hot.

5. Pig-iron is brittle because it contains

A A high percentage of carbon as an impurity
B Calcium trisilicate (iv)
C Unreacted haematite
D Undecomposed limestone
E Steel

Correct Answer

The correct answer is **A.**

Explanation

The high percentage of carbon in pig iron because of the high percentage of carbon in it.

6. Iron is often galvanized to

A Make it more malleable
B Remove the impurities in it
C Protect it against corrosion
D Render it passive
E Melt it.

Correct Answer

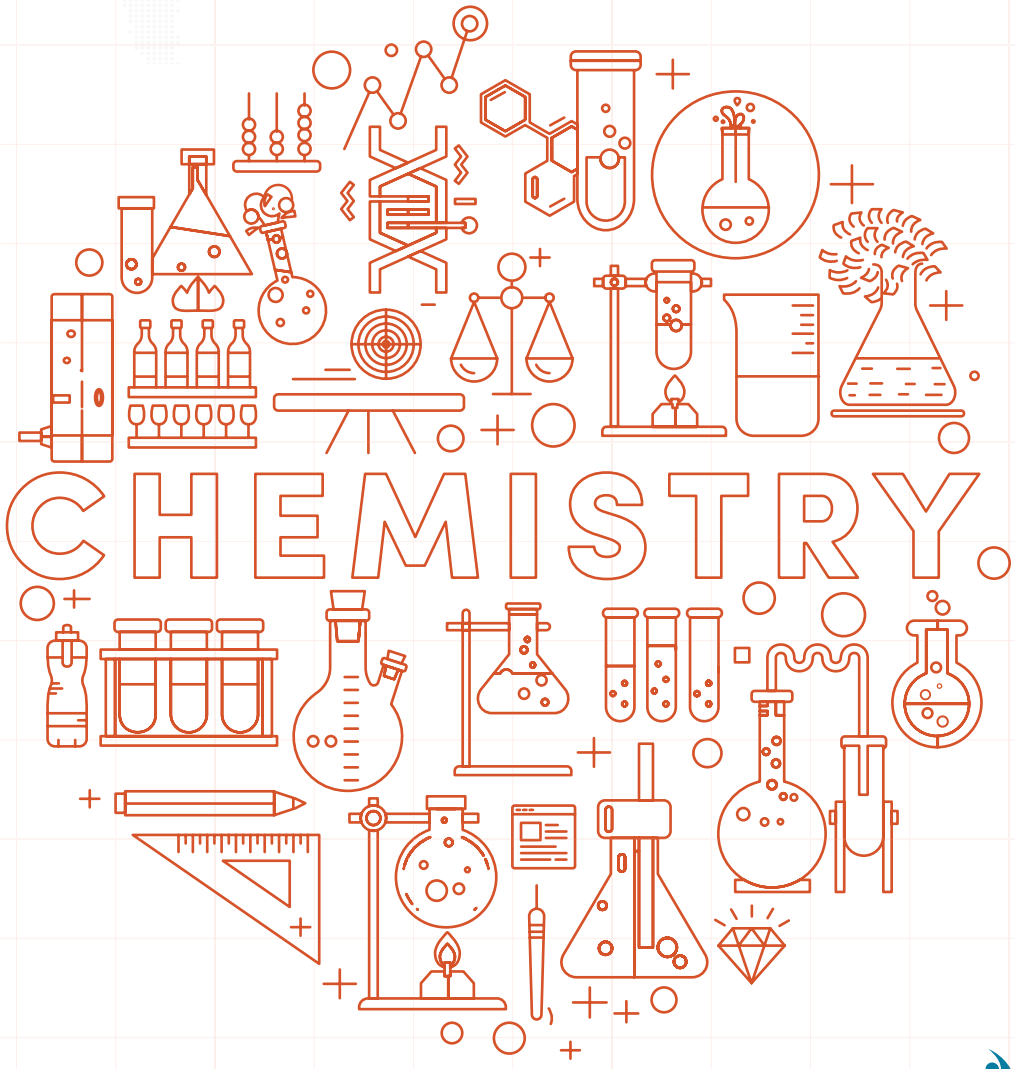
The correct answer is **C.**

Explanation

Iron is often galvanized with Zinc to protect it from rust.

ETHICAL, LEGAL AND SOCIAL ISSUES

INTERACTIVE ASSESSMENT QUESTIONS AND ANSWERS



MALEZI
EMPOWERING THOSE WHO CARE

1. The following are major industrial pollution except.

A CO_2
B CO
C SO_2
D NO_2
E Lead

Correct Answer

The correct answer is **A.**

Explanation

Gaseous pollutants include carbon monoxide, hydrocarbon, oxides of sulfur, and oxides of nitrogen. Heavy metals (particularly lead, mercury, and cadmium) are industrial pollutants.

2. The following diseases are caused by industrial pollutants except.

A Cancer
B Lead poisoning
C Leukemia
D Irritation
E Polio

Correct Answer

The correct answer is **E.**

Explanation

Cancer, lead poisoning, leukemia, skin irritation are diseases caused by industrial pollutants. Polio is caused by the poliovirus.

3. Which of the following gases can cause blood poisoning?

A NO_2
B CO_2
C SO_2
D CFC
E CO

Correct Answer

The correct answer is **E.**

Explanation

When too much carbon monoxide, CO is in the air, your body replaces the oxygen in your red blood cells with carbon monoxide. This can lead to serious blood poisoning, damage tissue and may even lead to death.

4. The un-covered raw food that is sold along major road is likely to contain some amounts of.

   A Lead
   B Copper
   C Argon
   D Sodium
   E Iron

Correct Answer

The correct answer is **D.**

Explanation

"The uncovered raw food that is sold along major roads is likely to contain some amounts of 'Pb - Lead'.

5. The gas that is most useful in protecting humans against solar radiation is

   A Chlorine
   B Ozone
   C CO_2
   D H_2S
   E NO_2

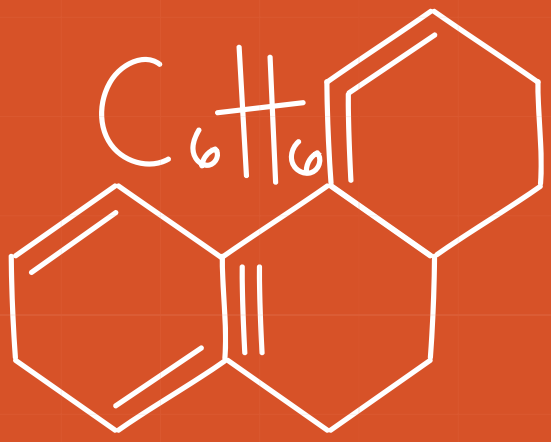
Correct Answer

The correct answer is **B.**

Explanation

The ozone layer is a natural layer of gas in the upper atmosphere that protects humans and other living things from harmful ultraviolet (UV) radiation that comes from the sun.

THEME 03



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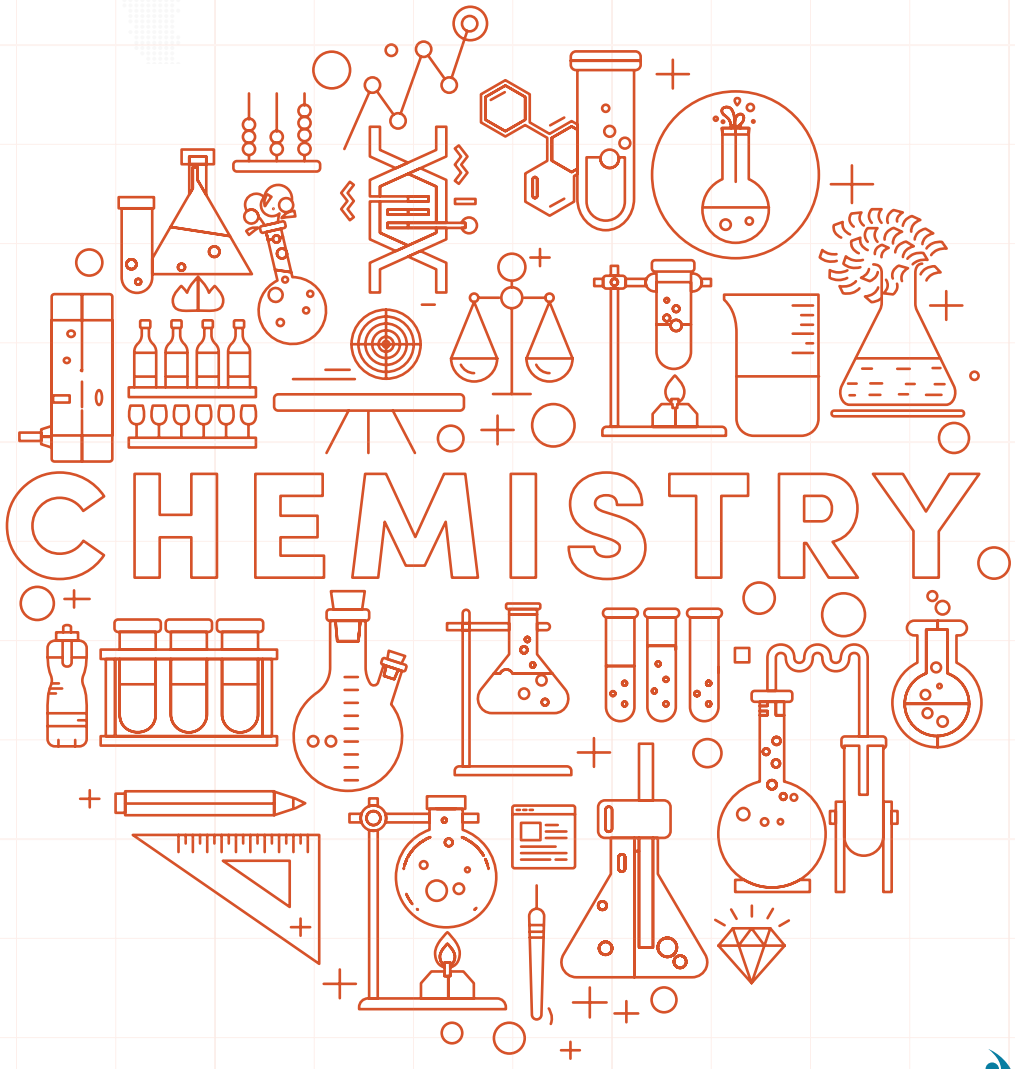
FATS AND OIL

INTERACTIVE ASSESSMENT QUESTIONS AND ANSWERS



MALEZI
EMPOWERING THOSE WHO CARE

1. The following oils can serve as a raw material for the production of margarine except.

A Palm kernel oil
B Sunflower
C Coconut oil
D Olive oil
E Paraffin oil

Correct Answer

The correct answer is **E.**

Explanation

Palm kernel oil, sunflower oil, coconut oil, olive oil are oils from plants. These oils are often used for making margarine. while paraffine oil is an oil from crude oil. It cannot be used to make margarine.

2. We can change oil into fat by using nickel as catalyst at 180°C through a process called

A Polymerization
B Alkylation
C Hydrogenation
D Substitution
E Decomposition

Correct Answer

The correct answer is **C.**

Explanation

Hydrogenation of oil is known as hardening of oils to produce solid fats. This is achieved by passing hydrogen into an unsaturated oil at about 180oC and 3 atmospheric pressure by using finely divided Nickel as catalyst. The unsaturated part of the oil is saturated and the oil becomes hardened into fat.

3. Which of these solvents cannot be used to dissolve fats?

A Tetrachloromethane
B Ethoxyethane
C Chloroform
D Water
E Benzene

Correct Answer

The correct answer is **D.**

Explanation

Fats and oils are all insoluble in polar solvents like water but very soluble in the non-polar or weakly polar organic solvents, including kerosene, chloroform, ether, benzene, acetone, ethoxyethane, tetrachloromethane etc.

4. The alkanol obtained when soap is produced is

A Dihydric alkanol
B Monohydric alkanol
C Trihydricalkanol
D Tertiary alkanol
E Secondary alcohol

Correct Answer

The correct answer is **C.**

Explanation

Trihydric alkanol is the alkanol obtained when soap is produced.

5. The boiling of fats and an aqueous solution of caustic soda is called ?

A Acidification
B Hydrolysis
C Saponification
D Esterification
E Neutralization

Correct Answer

The correct answer is **C.**

Explanation

Option C is the correct answer. Saponification is the alkaline hydrolysis of fats and oils to give a mixture of salts of fatty acids (soaps) and propane-1,2,3-triol (glycerol)

Fats or oils + Caustic alkali ⟶ Glycerol + Soaps

Hard soaps are produced if caustic soda (NaOH) is used for the reaction. Soft or liquid soaps are produced if caustic potash (KOH) is used.

6. A liquid that will dissolve fat is

A Kerosene
B Hydrochloric acid
C Calcium hydroxide
D Water
E Tetraoxosulphate (IV) acid

Correct Answer

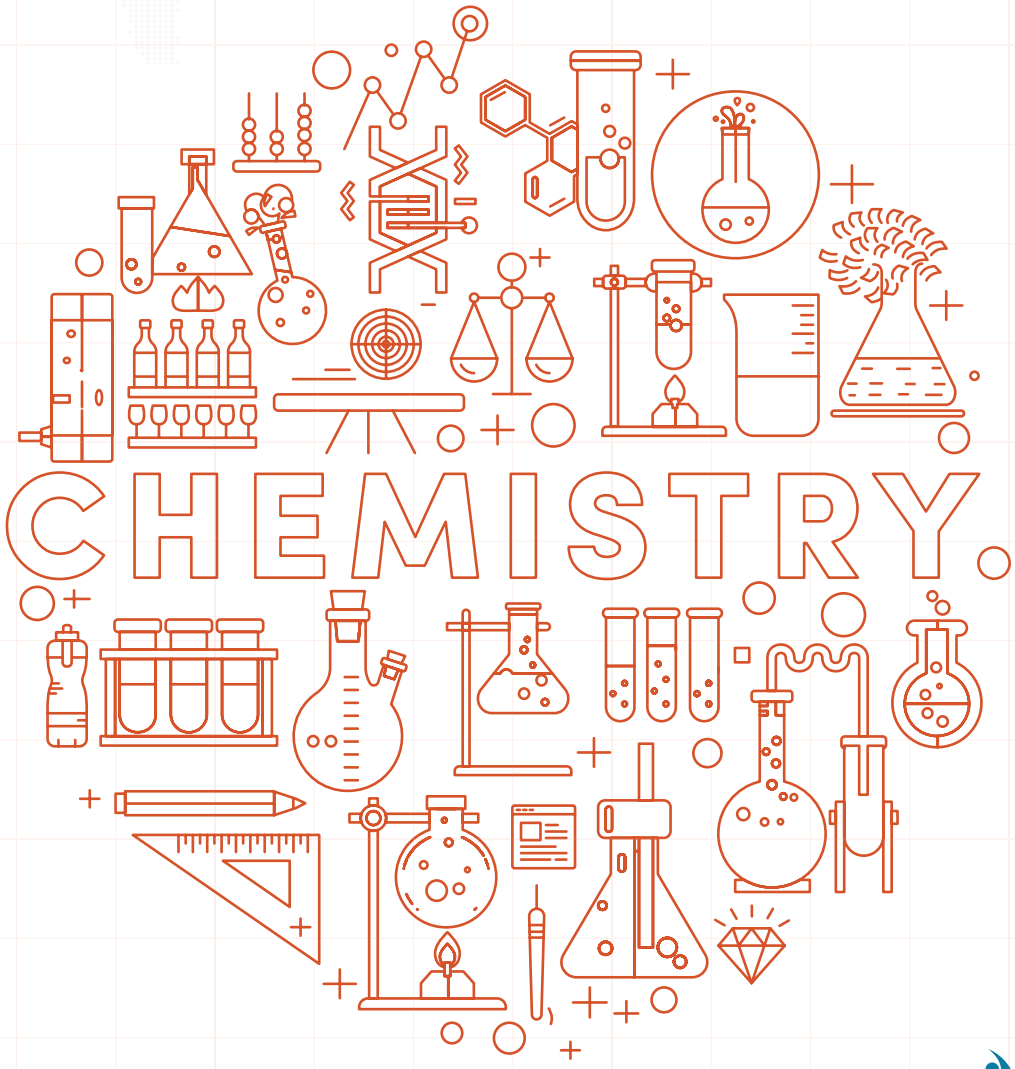
The correct answer is **A.**

Explanation

Fats and oils are all insoluble in polar solvents like water but very soluble in the non-polar or weakly polar organic solvents, including kerosene, ether, benzene chloroform, acetone, ethoxyethane, tetrachloromethane etc.

SOAP AND DETERGENTS

INTERACTIVE ASSESSMENT QUESTIONS AND ANSWERS



MALEZI
EMPOWERING THOSE WHO CARE

1. Which of the following is a soapless detergent?

A $C_{12}H_{25}OSO_3Na$
B $C_{17}H_{35}COONa$
C C_6H_5OH
D $C_4H_9COOC_2H_5$
E $CuSO_4.5H_2O$

Correct Answer

The correct answer is **A.**

Explanation

$C_{12}H_{25}OSO_3Na$. This is from a long chain alkene.
The presence of SO_3^- Na^+ in the molecules of soapless detergents is responsible for their high solubility in water.

2. By shaking a detergent solution with _____, an emulsion is produced.

A Water
B Palm oil
C Ethanoic acid
D Palm wine
E Sand

Correct Answer

The correct answer is **D.**

Explanation

If some oil is poured into a beaker of water, the oil will float on the water surface as a separate layer. If the oil-water mixture is shaken vigorously, the oil will be suspended as tiny droplets in the aqueous layer. This is an oil-water emulsion.

3. "Lux" "Omo" washing liquids are all

A All contain synthetics and oils
B Emulsifying and curdy agents
C Detergents
D Soaps
E Alkanol

Correct Answer

The correct answer is **C.**

Explanation

Lux is a soapy detergent while Omo is a soapless detergent.

4. The structural component that makes detergent dissolve in quickly in water than soap is

A SO_4^- Na^+
B COO^- K^+
C COO^- Na^+
D SO_3^- Na^+
E SO_4^{2-} K^+

Correct Answer

The correct answer is **D.**

Explanation

The solubility of detergents in water is due to the presence of SO_3^- Na^+

5. The saponification of alkanoate for the production of soap and alkanol involves

A Hydrolysis
B Esterification
C Dehydration
D Oxidation
E Neutralization

6. In the production of soap, concentrated sodium chloride is added to

A Saponify the soap
B Decrease the solubility of the soap
C Increase the volume of the soap
D Increase the solubility of soap
E Emulsify the soap

Correct Answer

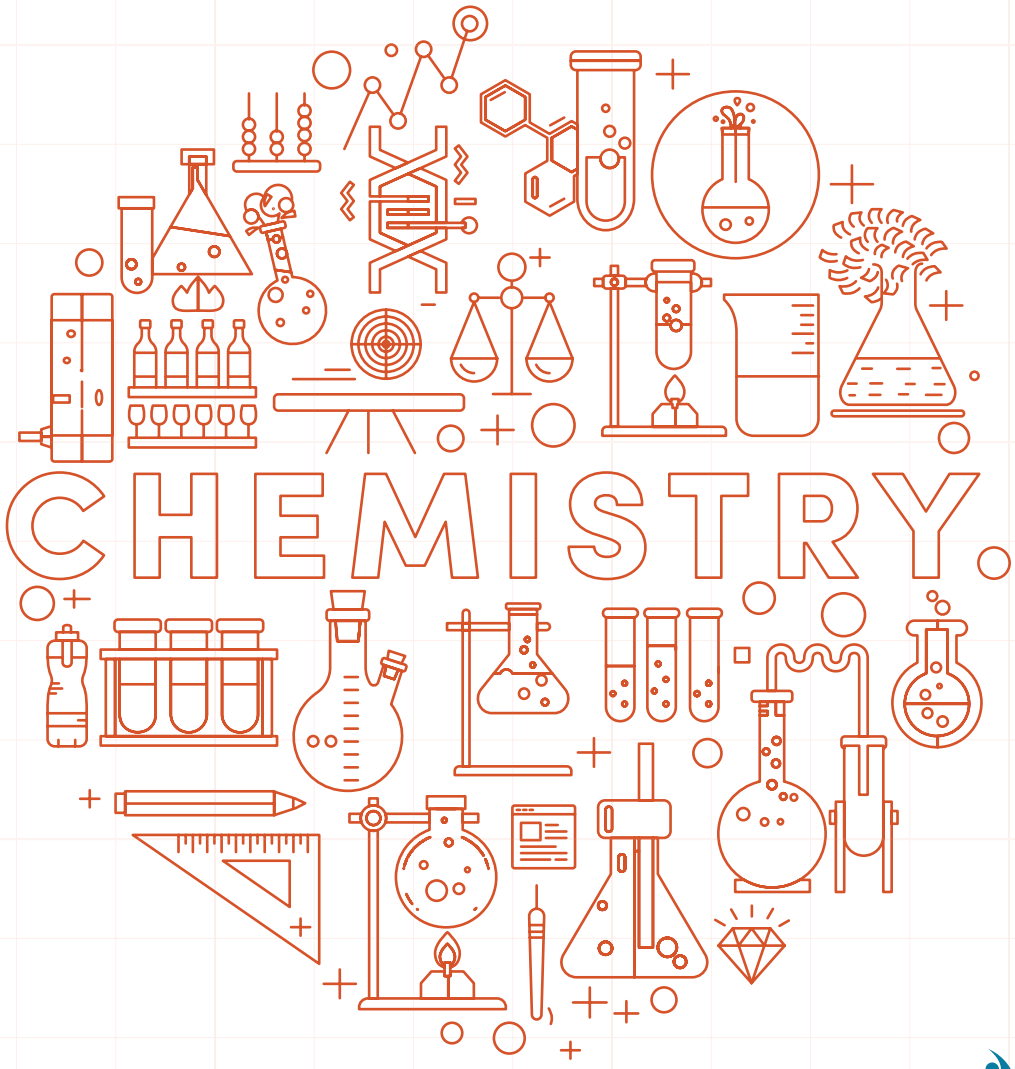
The correct answer is **B.**

Explanation

The addition of sodium chloride to the crude form of soap forms fatty-acid salts. The sodium ions from the sodium chloride bond with the fatty acid and form a product that is not as soluble in water as before. This makes the soap leave the solution and form a solid mass.

GIANT MOLECULES: CARBOHYDRATES

INTERACTIVE ASSESSMENT QUESTIONS AND ANSWERS



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1. The following are hexoses except,

A Glucose
B Cellulose
C Fructose
D Galactose
E Mannose

Correct Answer

The correct answer is **B.**

Explanation

The most common and important monosaccharides are the ones containing six carbon atoms per molecule and they are called hexoses. Examples of hexoses are glucose, fructose, mannose, and galactose. All hexoses have the same molecular formula of C6H12O6 but possess different spatial arrangements.

2. Glucose will be dehydrated to _____ if it is heated with concentrated tetraoxosulphate (VI) acid

A Carbon
B Carbon (IV) oxide
C Ethene
D Ethanol
E Ethanoic acid

Correct Answer

The correct answer is **A.**

Explanation

When glucose is heated with concentrated tetraoxosulphate (VI) acid, a black residue of carbon is formed.

$$C_6H_{12}O_6 \xrightarrow{-6H_2O} 6C$$

This dehydration reaction with concentrated tetraoxosulphate (VI) acid is characteristic of all carbohydrates.

3. $C_6H_{12}O_6 \xrightarrow[25^oC]{\text{Zymase}} 2C_2H_5OH + 2CO_2 + \text{Energy.}$

The reaction represented by the equation above is useful in the production of

A Ethanol
B Propanol
C Butanol
D Methanol
E Pentanol

Correct Answer

The correct answer is **A.**

Explanation

Yes, the correct answer is option "A". Glucose solution is readily fermented to ethanol and carbon (iv) oxide by the enzymes.

$$C_6H_{12}O_6 \xrightarrow{\text{Zymase}} C_6H_5OH_{(aq)} + 2CO_{2(g)}$$

4. Cellulose and starch can be classified as one of the following

A Sugars
B Sucrose
C Hydrocarbons
D Carbohydrates
E Isomers

Correct Answer

The correct answer is **D.**

Explanation

Cellulose and starch can be classified as carbohydrates

5. An example of a polysaccharide is

A Dextrose
B Starch
C Glucose
D Mannose
E Fructose

Correct Answer

The correct answer is **B.**

Explanation

Examples of polysaccharides are starch, glycogen, cellulose, and inulin.

6. Sucrose is made up of

A Glucose and glucose
B Fructose and fructose
C Galactose and glucose
D Glucose and fructose
E Fructose and galactose

Correct Answer

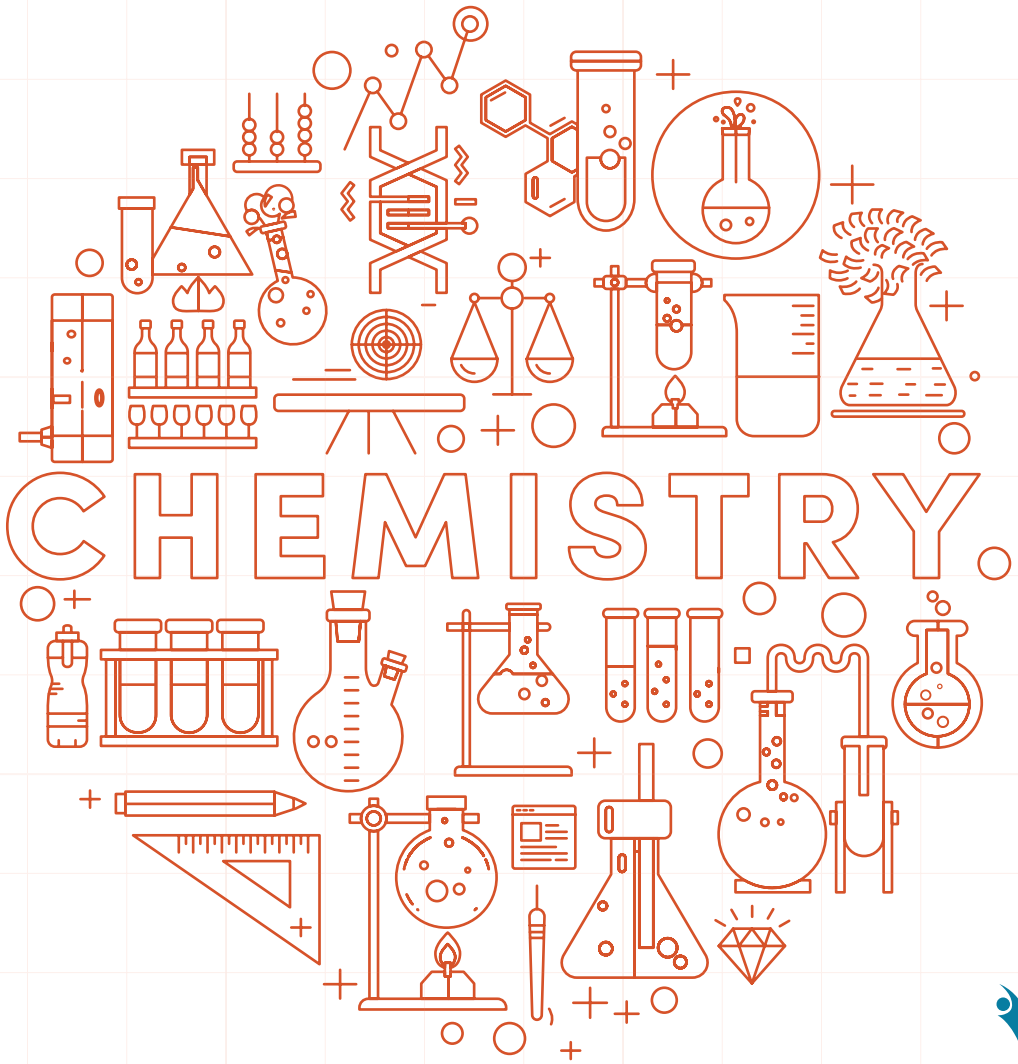
The correct answer is **D.**

Explanation

Sucrose comprises glucose and fructose.

GIANT MOLECULES: PROTEIN

INTERACTIVE ASSESSMENT QUESTIONS AND ANSWERS



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1. Proteins in acid solution undergo

A Substitution
B Fermentation
C Hydrolysis
D Polymerization
E Neutralization

Correct Answer

The correct answer is **C.**

Explanation

Proteins can be hydrolyzed to give amino acid by boiling them with solutions of hydrochloric acid or sodium hydroxide. Hydrolysis can also be carried out by using suitable enzymes.

2. Amino acids are obtained from proteins by

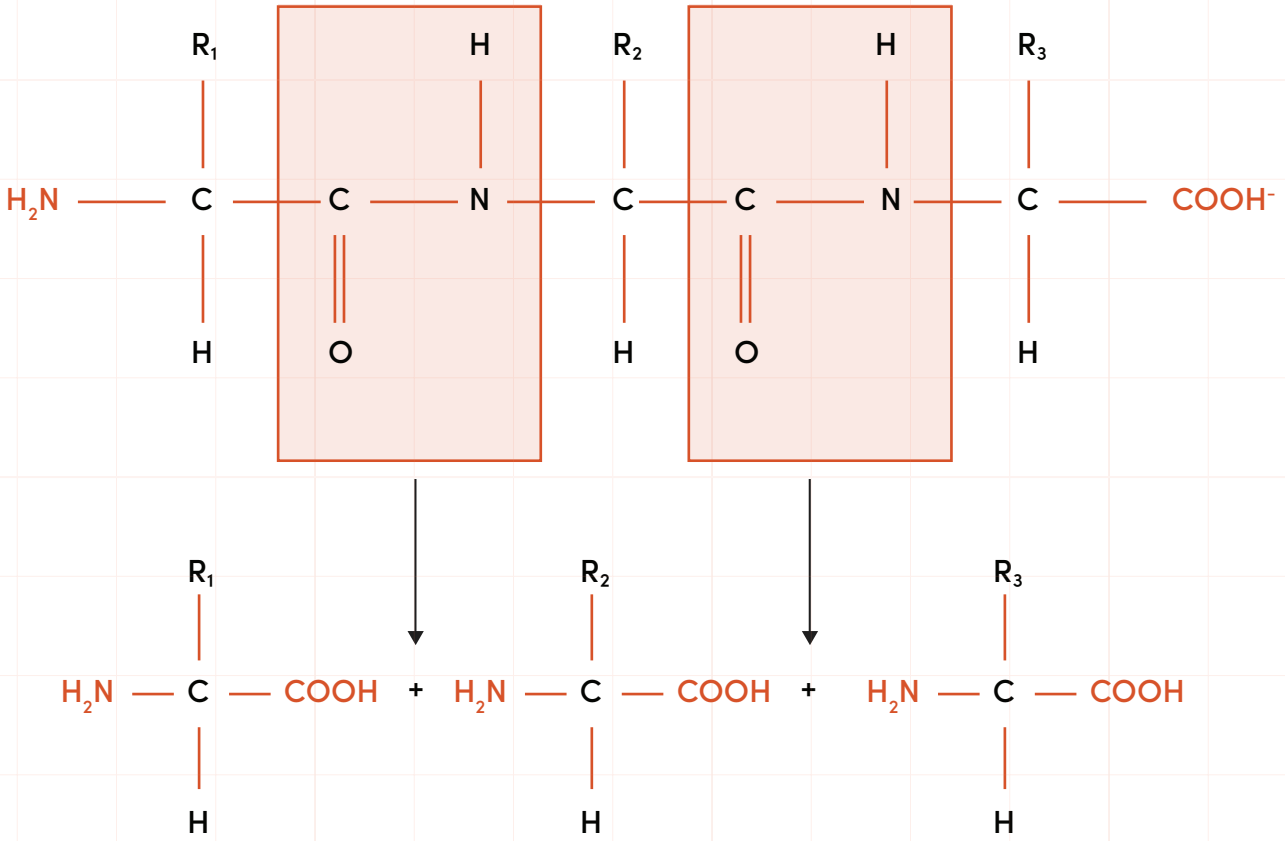
A Hydrolysis
B Oxidation
C Polymerization
D Reduction
E Heating

Correct Answer

The correct answer is **A.**

Explanation

Yes, that's correct! A



3. When protein is heated to a high temperature it undergoes

A Condensation
B Denaturation
C Hydrolysis
D Polymerization
E Neutralization

Correct Answer

The correct answer is **B.**

Explanation

Denaturation means when protein is heated to a high temperature, the protein precipitates or coagulates. This is due to irreversible changes in the molecular shapes of the proteins and the proteins are said to be denatured.

4. The following are examples of protein except?

A Haemoglobin
B Sucrose
C Collagen
D Insulin
E Ribonucleus

Correct Answer

The correct answer is **B.**

Explanation

Examples of proteins

1. **Insulin (a hormone)**
2. **Haemoglobin (oxygen-carrying pigment in blood),**
3. **Ribonuclease (an enzyme), and**
4. **Collagen (a muscle protein)**

5. Sources of proteins include the following except

A Rice
B Fish
C Milk
D Cheese
E Meat

Correct Answer

The correct answer is **A.**

Explanation

Sources Of Protein: Milk, Fish, Egg, Meat, Cheese, Chicken. While plant sources are: Beans, groundnut, soya beans, cowpea e.t.c

6. What is observed when a million's reagent is treated with an egg-white solution in a test-tube.

A A blue precipitate is formed
B A green precipitate is formed
C A yellow precipitate is formed
D A formation of a white precipitate which turns brick-red on heating.
E Formation of a black precipitate which turns white after a while

Correct Answer

The correct answer is **D.**

Explanation

Million's Test

S/N	Test	Observation	Inference
1.	Add a few drops of million's reagent to some egg–white solution in a test tube.	A white precipitate is formed. The white precipitate formed turns brick – red on heating.	This shows the presence of protein.

BUSINESS DETAILS

Website : Malezi.co.ke / learnathome.ng
Business : Education
Concern : E- Leaning