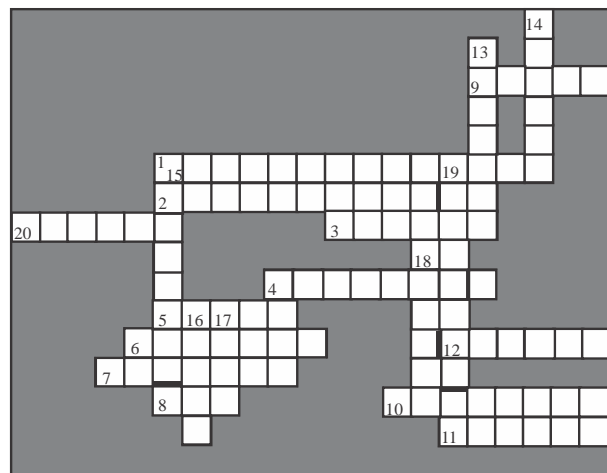


Road to IIT is pretty straight, you just need to take first step in the right direction & then continue moving on it.

ACROSS

- This method is used to separate butter from cream in dairies and in washing machines to squeeze out water from wet clothes.
- Sulphur in carbon disulphide is a mixture.
- The isotope of this element is used in treatment of goitre.
- The highly exothermic reaction between Fe_2O_3 and Al which is used to join railway tracks and cracked machine parts
- These rays are positively charged radiations which were discovered by E. Goldstien in gas discharge tube even before electron was discovered.
- The combining power or capacity of an element.
- The size of particles of this mixture is too small to be individually seen by naked eye but big enough to scatter a beam of light
- Compounds compose of metals of non metals which contain charged species which can be positively or negatively charged. These charged species are called.....
- '..... water' is highly corrosive & fuming liquid which is a reagent to dissolve Au & Pt.
- During the electrolysis of water, gas obtained at cathode is
- A purple dye obtained from a plant lichen and is commonly used as an indicator.
- When fats and oils in food gets oxidised and their smell and taste change they are said to become.....

- During the extraction of metals the impurities found in are such as sand gravel are called.....



DOWN

- A 17th group element which is liquid at room temperature.
- This element was initially chosen as a reference for measuring atomic masses because it reacts with large number of elements and forms compounds.
- The formula of a compound shows its constituent element and number of atoms of each combining element.
- A homogenous mixture of a metal and a non-metal or two or more metals often used to make articles resistant to corrosion .
- First inert gas in periodic table which posses a complete octet
- The simplest compounds which are made up of two different element are called..... compounds.
- Solution of iodine (solute) in alcohol(solvent) is called "..... of iodine".

ANSWER**ACROSS**

1. Centrifugation
2. Homogenous
3. Iodine
4. Thermite
5. Canal
6. Valency
7. Colloid
8. Ion
9. Royal
10. Hydrogen

DOWN

11. Litmus
12. Rancid
13. Bromine
14. Oxygen
15. Chemical
16. Alloy
17. Neon
18. Binary
19. Tincture
20. Gangue

DPP # 02

INORGANIC CHEMISTRY

TIME : 35 Min.

Road to IIT is pretty straight, you just need to take first step in the right direction & then continue moving on it.

ELEMENTS AND PROPERTIES OF SUBSTANCES

ACROSS

2. assists the metabolism of sugar.
5. Melting is also called
6. CaCl_2 is in nature.
7. is not indicated in chemical equation.
9. Boiling is phenomenon.
10. is used for white washing walls.
11. Second element showing maximum catenation.
15. involved in production of RBC.
17. is added to alcohol in industries to avoid misuse of alcohol.
19. is important constituent of banana.
21. plants are most efficient convertor of sunlight energy into chemical energy.
22. The complete neutralisation is indicated by sudden change in colour of indicator. This is called.....
25. Stibium is the latin name of
26. maintain proper calcium level in bones.
28. bush are blue in colour in acidic soil & pink in alkaline soil.

DOWN

1. gas is used in welding & cutting.
3. acid is used in antirust point & fertiliser
4. Noble gas which is major component of air.

8. Colour flame of potassium.



12. NaOH is manufacture in cell.
13. is added in power alcohol so as to mix alcohol & petrol.
14. is present in vitamin B12.
16. is used for differentiating cancerous tissue from normal tissue.
18. Carnallite is ore of
20. Rutherford model is also called model.
23. Element of group 16 are called
24. Amalgam is reducing agent.
27. Eka boron is
29. Which element means moon in Greek word.
30. Methanol is also called

ANSWER

- | | |
|---------------------|-----------------|
| 1. Oxyacetylene | 16. Sodium |
| 2. Chromium | 17. Methanol |
| 3. Phosphoric | 18. Magnesium |
| 4. Argon | 19. Potassium |
| 5. Fusion | 20. Planetary |
| 6. Deliquescence | 21. Sugarcane |
| 7. Explosion | 22. End point |
| 8. Lilac | 23. Chalcogens |
| 9. Bulk | 24. Sodium |
| 10. Slaked lime | 25. Antimony |
| 11. Sulphur | 26. Manganese |
| 12. Castner-kellner | 27. Scandium |
| 13. Benzene | 28. Hydrangea |
| 14. Cobalt | 29. Selenium |
| 15. Copper | 30. Wood spirit |

Road to IIT is pretty straight, you just need to take first step in the right direction & then continue moving on it.

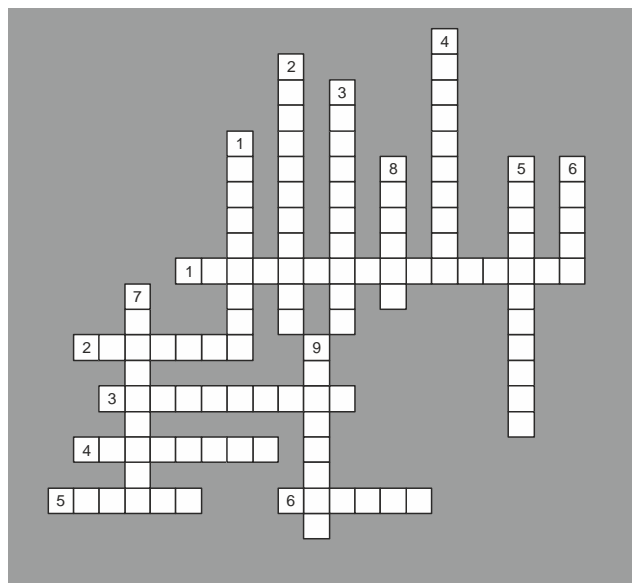
ELEMENTS AND PROPERTIES OF SUBSTANCES

ACROSS

1. A colourless gas which smells of rotten eggs. (words = no space)
2. Mendeleev predicted this then undiscovered element and named it eka-aluminium
3. A compound is colourless and used as a gas odorant.
4. Known as the 'Gold Schmidt process' this process is used in welding.
5. heat is the energy released during a constant temperature process.
6. The name of this element originated from the word 'cyprus'. It is used in 'bronze'.

DOWN

1. This element is used as a catalyst in hydrogenation of unsaturated hydrocarbon.
2. The compound used to degrease metals.
3. An aromatic compound which sublimates
4. Weak forces also called
5. Conversion of carbonates into oxides, used in metallurgy.
6. A hot and concentrated solution of common salt.
7. This allotrope of carbon looks like the geodesic dome designed by US architect Buckminster.
8. The hydrogen and oxygen ratio in water is always 2 : 1. This law given by.....
9. Milky glass is this type of colloid.



ANSWER KEY**ACROSS**

1. Hydrogensulphide
2. Gallium
3. Mercaptile
4. Thermite
5. Latent
6. Copper

DOWN

1. Palladium
2. Caustic soda
3. Anthracene
4. Vander waal
5. Calcination
6. Brine
7. Fullerene
8. Proust
9. Solid sol

Road to IIT is pretty straight, you just need to take first step in the right direction & then continue moving on it.

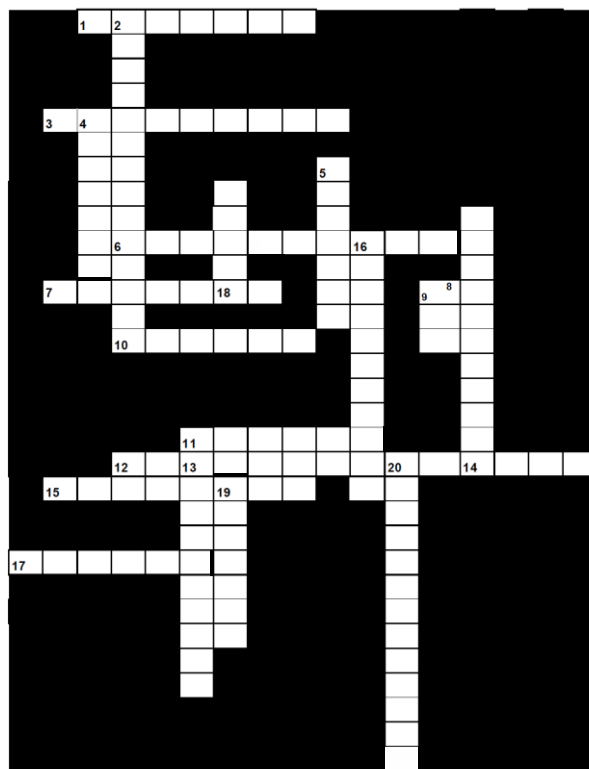
ELEMENTS AND PROPERTIES OF SUBSTANCES

ACROSS

1. It is used as nail polish remover.
3. It starts with the name of a nation and have the properties of both metals & non-metal.
6. It converts directly to gas from solid.
7. It is a bulk phenomenon & it's value for water is 100°C.
8. A gas having odour like rotten egg
10. Element which is used as a catalyst during hydrogenation of vegetable oil.
11. These are water soluble bases
12. He introduced the word mole.
15. A mineral from which mercury can be extracted profitably.
17. An element exhibits greatest property of catenation.

DOWN

1. Process used in washing machine to squeeze out water from wet clothes
4. A good organic solvent used in medicines
5. It is the only liquid metal at 26°C.
16. A surface phenomena causes cooling.
9. A dehydrating agent which removes water from ethanol.
13. It is the hidden heat into the content.
19. Neither a metal nor a metalloid but liquid at room temperature.
20. This constitutes the thick white & yellowish atmosphere of Venus.



UP

14. Used to remove permanent hardness of water.
18. Used in soda-acid fire extinguisher.

ANSWER KEY**ACROSS**

1. Acetone
3. Germanium
6. Anthracene
7. Boiling
8. H_2S
10. Nickle
11. Alkali
12. Wilhelm Ostwald
15. Cinnabar
17. Carbon

DOWN

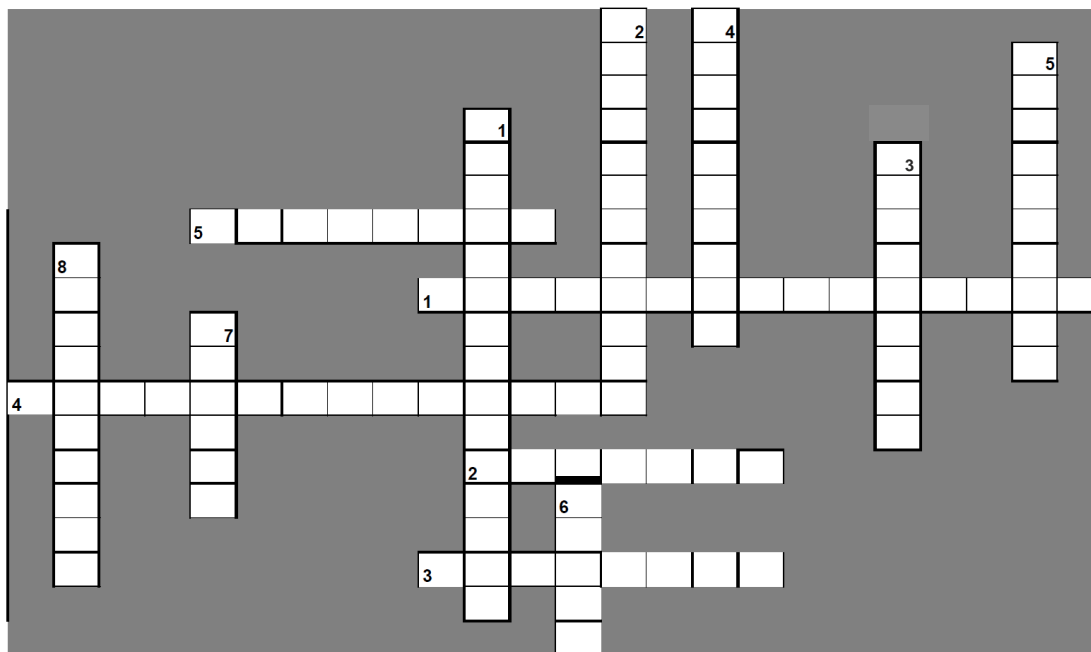
2. Centrifugation
4. Ethanol
5. Mercury
16. Evaporation
9. H_2SO_4
13. Latent Heat
19. Bromine
20. Sulphuric acid

UP

14. Washing Soda
18. NaHCO_3

Road to IIT is pretty straight, you just need to take first step in the right direction & then continue moving on it.

ELEMENTS AND PROPERTIES OF SUBSTANCES



ACROSS

- This process precipitates a colloid.
- An alloy of mercury with another metal.
- A scarlet-red coloured major ore of mercury.
- The random movement of particles suspended in a fluid (2 words - no space)
- Process of conversion of sulphide ore to oxide
- Commonly known as 'royal water', this mixture dissolves gold.
- This property of carbon is the reason for the vast number of organic compounds in nature.
- This variety of coal has the highest calorific value of all types of a coal.
- This noble element is used in photographic flash lamps
- The unwanted material which is loosely mixed with a mineral in an ore deposit.

DOWN

- An indicator used in acid-base titration.
- This process is named after a gaseous non metal widely used as disinfectant
- Chemical compound with formula CHCl_3 used in anesthesia in medical surgeries.

ANSWER**ACROSS**

1. Electrophoresis
2. Amalgam
3. Cinnabar
4. brownianmotion
5. Roasting

DOWN

1. Phenolphthalein
2. Chlorination
3. Aquaregia
4. Catenation
5. Anthracite
6. Xenon
7. Gangue
8. Chloroform

Road to IIT is pretty straight, you just need to take first step in the right direction & then continue moving on it.

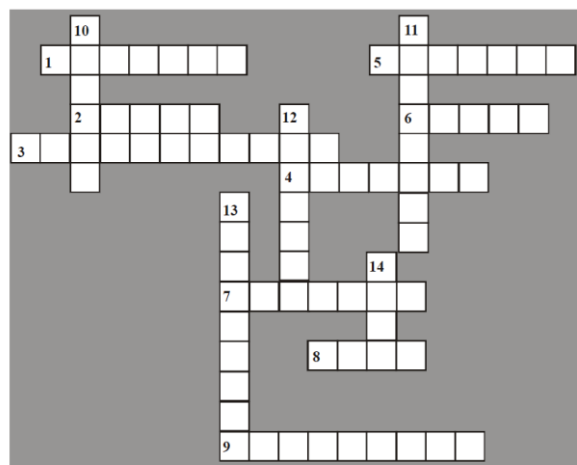
ELEMENTS AND PROPERTIES OF SUBSTANCES

ACROSS

- Used to manufacture cement, helps in building strong bones.
- Used to prepare fiberglass and insecticides, also used in eyedrops.
- This element is used in fertilizers, also used as a substitute salts.
- Used as a lubricant and also used in batteries and for medicinal purposes.
- Used in making computer chips. Also has medicinal properties.
- This noble gas is used in light bulbs and also for arc welding.
- This liquid metal is used in thermometers, it was found in a 3,500 years old Egyptian tomb.
- Brass is an alloy of copper and this metal.
- Used in preparation of batteries, steel and ceramics.

DOWN

- Used as a fuel in thermal power plants, usually found as coal or soot.
- This metal is used to make aircraft, naval ships, and body replacements.
- Used to prepare gunpowder and fire crackers. It is a pale yellow material also used in ayurved.



- Used in packing food and making cooking utensils.
- This cheap metal is used since 5000 years. It is used to make nails and it is an important component of chlorophyll.

ANSWER**ACROSS**

1. Calcium
2. Boron
3. Phosphorous
4. Lithium
5. Silicon
6. Argon
7. Mercury
8. Zinc
9. Manganese


DOWN

10. Carbon
11. Titanium
12. Sulphur
13. Aluminium
14. Iron

Road to IIT is pretty straight, you just need to take first step in the right direction & then continue moving on it.

ELEMENTS AND PROPERTIES OF SUBSTANCES

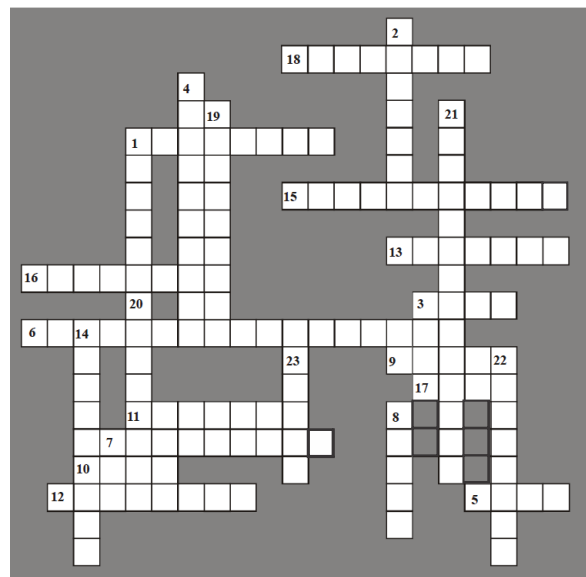
ACROSS

1. Hardest metal
12. This element gets its name from a Greek word which means 'MOON'.
6. It is kept in amber coloured bottles so as to cut off light.
13. This term refers to any substance participating in a reactions.
7. While moving from outer to inner side of "INNER PLANETS" the atmosphere of third planet is made up of this acid.
5. Galvanisation is done to protect iron & steel articles. It is done with the help of this element.
9. Number of structural isomers of pentane
3. This word was introduced by Wihelm Ostwald.
17. Standard atmospheric pressure is measured in
16. Generally this gas is present in fluorescent tubes
11. He is one of the person to receive nobel prize in 2001 for achieving Bose Einstein condensation.
15. This symbol  suggested by Berzillius represents which element
10. Most ductile metal
18. This element is present in water but not in Heavy Water

DOWN

1. Third most abundant metal
2. Castner kellner cell is used to manufacture an Alkali metal of this alkali is

3. BEC is which state of matter.



14. These are generally ammonium or sulphonate salts of long carboxylic acids & also remain effective in hard water.
19. Canal rays were discovered by
7. Milk of magnesia is which type of colloid.
20. Smallest particle of an element or a compound that is capable of independent existence & shows all the properties of that substance
22. Which type of colloid is face cream.
21. The technique is used for separation of those solutes that dissolve in the same solvent.
23. Tincture of iodine is a solution of iodine in alcohol. In this solution, iodine is present in which state of matter [solid/liquid/gas]
4. This alloy is made up of aluminium, copper, magnesium & manganese

ANSWER**ACROSS**

1. Chromium
12. Selenium
6. Hydrogen peroxide
13. Reagent
7. Sulphuric acid
5. Zinc
9. Three
3. Mole
17. Bar
16. Helium
11. Cornell
18. Hydrogen
15. Phosphorous
10. Gold

DOWN

1. Calcium
2. Sodium
8. Fifth
14. Detergent
19. Goldstein
7. Sol
20. Molecule
22. Emulsion
21. Chromatography
23. Solid
4. Duralumin

DPP # 08

INORGANIC CHEMISTRY

TIME : 35 Min.

Road to IIT is pretty straight, you just need to take first step in the right direction & then continue moving on it.

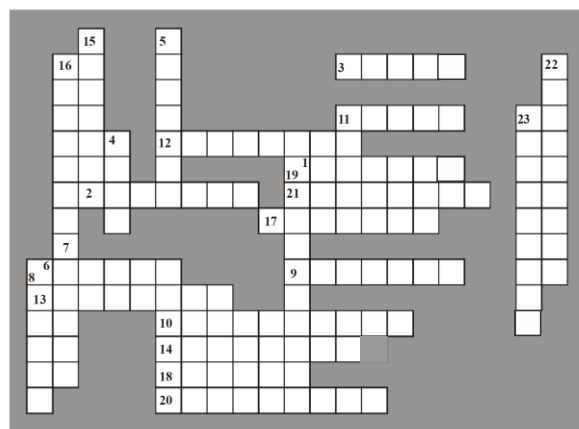
ELEMENTS AND PROPERTIES OF SUBSTANCES

ACROSS

1. Gas having Red-brown vapours.
2. It is a sublimable compound commonly used in prayers.
3. Mixture of zinc and copper is alloy
6. Element used in destroying malignant cells of patients of cancer.
9. Special name given to atoms having same atomic number.
10. An element necessary for plants.
11. Colour of lead nitrate is
12. Synonym for unbalanced reaction is reaction.
13. All synthesis reaction are reaction.
14. Iron is a/an agent.
17. Aluminium is used as agent in fire extinguishers.
18. Naturally methyl orange is in colour.
19. Used in swelling bread.
20. powder is used to form chloroform.
21. Process of extremely heating concentrated ore in presence of excess air is known as

DOWN

4. Shaving cream is which type of colloidal solution.
5. Law of constant proportion was stated by
7. Element used for examining circulation of blood.



8. Element used for finding age of plants, fossils etc.
15. Silver sulphide is in colour.
16. HF is acid.
22. Name process in purification of metal which is based of fusibility differences between impurity and metal.
23. Which carbon allotropes has football shape?

ANSWER**ACROSS**

1. Bromine
2. Camphor
3. Brass
6. Cobalt
9. Isotope
10. Molybdenum
11. White
12. Skeletal
13. Addition
14. Reducing
17. Foaming
18. Yellow
19. Baking soda
20. Bleaching
21. Roasting

DOWN

4. Foam
5. Proust
7. Sodium
8. Carbon
15. Black
16. Dibasic
22. Liqutation
23. Fullerene

DPP # 09

INORGANIC CHEMISTRY

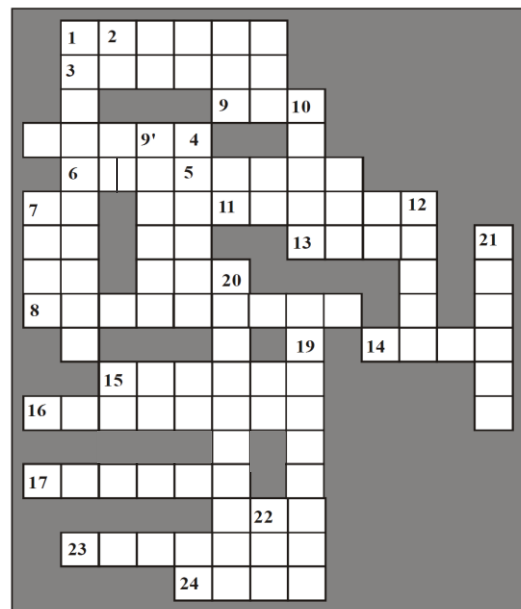
TIME : 35 Min.

Road to IIT is pretty straight, you just need to take **first step** in the right direction & then continue moving on it.

ELEMENTS AND PROPERTIES OF SUBSTANCES

ACROSS

2. Elements belonging to the same can be in a triad according to Doberiner
4. FeS_2 is commonly called.....gold (from right to left)
6. Bleaching action of CaOCl_2 is the oxidation of this element. It is named so due to its greenish yellow colour.
8. Most negative is of chlorine in periodic table
9. The maximum oxidation state possible of an element is x . Then $x - 1 = ?$ (Prominent in manganese)
11. In electrolysis, is made of impure metal. Oxidation takes place here.
13. It is prepared in Castner-Kellner cell. Prominent alkali.
14. Galena is an ore of
15. It is obtained as a decay product of ^{226}Ra . Group 18 element.
16. Although present in d-block, zinc, cadmium & are not called transition element.
17. KNO_3 is commonly known as salt petre.
18. H_2O can be called all type of acid & base except base (type of classification)
22. Water gas is $\text{H}_2 + \text{x}$, produces gas is $\text{H}_2 + \text{x}$. What is x ?
23. Quartz is made of this element used to make solar cells.
24. Earlier bell metal ($\text{Cu} + \text{Sn}$) was mixed as transformed into this metal (At. no $\rightarrow 79$)



DOWN

1. Group 16 elements are called (ore producing)
3. The noble gas is used to fill balloon. Can be called exception of p-block.
5. HNO_3 is prepared by this process in a large scale.
7. Shaving cream is a foam whereas cream is an emulsion.
9. $\text{H}_2\text{S}_2\text{O}_7$ is commonly known as It is a mixture of SO_3 & H_2SO_4 .
10. This noble gas has maximum number of compounds known.
12. The formula of inorganic benzene can be $\text{B}_x\text{N}_x\text{H}_{2x}$ where $x = ?$
19. The color of flame of lithium is
20. In group 17, has only single oxidation state possible (-1)
21. It is an alloy of $\text{Pb} + \text{Sn}$.

ANSWER KEY**ACROSS:**

- 2. Group
- 4. Fools
- 6. Chlorine
- 8.
- 9. Six
- 11. Anode
- 13. NaOH
- 14. Lead
- 15. Radon
- 16. Mercury
- 17. Indian
- 18.
- 22. CO
- 23. Silicon
- 24. Gold

DOWN

- 1. Chalcogens
- 3. Helium
- 5. Ostwald
- 7. Hair
- 9. Oleum
- 10. Xenon
- 12. Three
- 19. Crimson
- 20. Flourine
- 21. Solder

DPP # 10

INORGANIC CHEMISTRY

TIME : 35 Min.

Road to IIT is pretty straight, you just need to take first step in the right direction & then continue moving on it.

ELEMENTS AND PROPERTIES OF SUBSTANCES

ACROSS

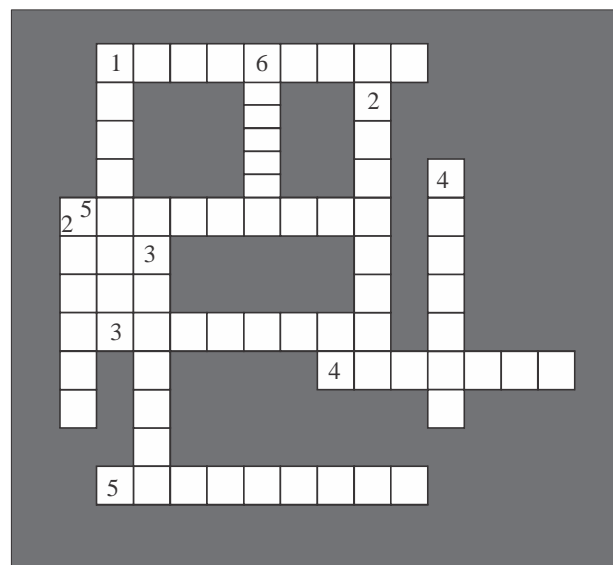
- Used as an oxidising agent in many chemical industries powder.
- Chips manufactures usually flush bags of chips from this gas to prevent the chips from getting oxidised.

- Gas used to make PVC.
- Substance used to neutralise the excess acid in our stomach
- Metal used in aluminothermite process

DOWN

- Compound used in Black & White photography is silver
- Gas used to make margarine.

- Alcohol used for drinking purposes.
- 7% aq. solution of CH_3COOH , used as a preservative & for flavouring.
- Used as a strong oxidising agent acid
- Used in smelting



ANSWER**ACROSS:**

1. Bleaching
2. Nitrogen
3. Chlorine
4. Antacid
5. Aluminium

DOWN:

1. Bromide
2. Hydrogen
3. Ethanol
4. Vinegar
5. Nitric
6. Carbon

Road to IIT is pretty straight, you just need to take first step in the right direction & then continue moving on it.

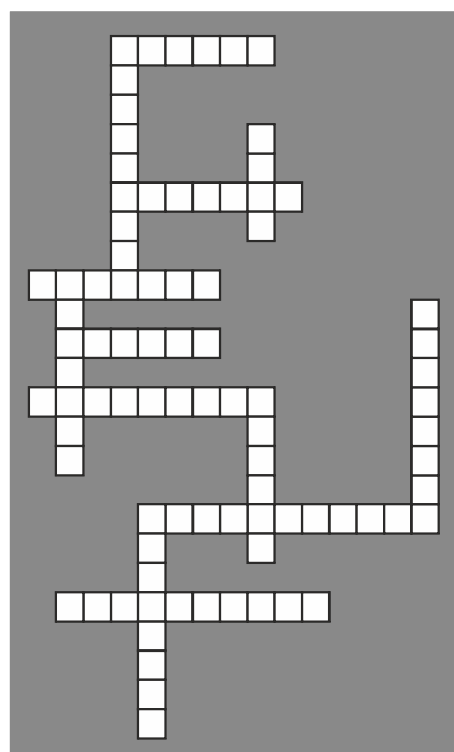
ELEMENTS AND PROPERTIES OF SUBSTANCES

UP-DOWN

1. Branch of physical science important for study of matter and our selection in IIT.
2. Steel contains it as its major part also magnet attracts this element
3. Branch of science dedicated primarily to a single element.
4. Most electronegative in their respective periods.
5. Electric wires are made of it and many pipes are also made.
6. Found in excess, we can't directly use it and plants need bacteria to fix it.
10. Study of all known elements and their compounds except hydrocarbons and their derivatives.
6. Gold, silver and platinum are called as
11. A metal that is now being used as a fuel as a part of latest technology, the idea was given by an indian scientist in the early 1900s.

ACROSS

1. This element has the highest property of catenation.
7. This element has a valley named after it.
8. A class of chemistry is dedicated to this, plastic also belongs to this.
9. A calcium salt that is a major component of cement.



ANSWERKEY**DOWN :**

1. Chemistry
2. Iron
3. Organic
4. Halogens
5. Copper
6. Nitrogen

ACROSS :

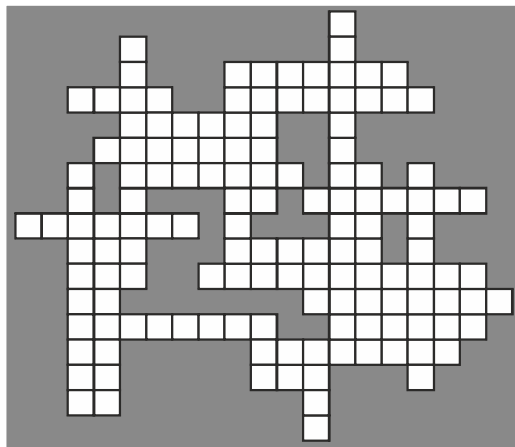
1. Carbon
7. Silicon
8. Polymer
9. Gypsum
10. Inorganic
6. Native metals
- 11.

Road to IIT is pretty straight, you just need to take first step in the right direction & then continue moving on it.

ELEMENTS AND PROPERTIES OF SUBSTANCES
ACROSS **DOWN**

1. Substances which gives $(OH)^-$ ion when dissolved in water.
3. The state of matter consists of super energetic particle & excited particle.
4. The type of mixture in which particle size ranges from 10^{-7} to 10^{-9} .
6. It is mixture (homogenous) of two or more metals or a metal or non-metal.
8. A non-metal which is liquid at room temperature.
9. Main component of atmosphere has higher concentration.
13. The substance which has highest conc. in solution.
15. It is the substance that gives $(H)^+$ ion. When dissolved in water.
16. Reduction with carbon is called.....
17. Positively charged ion is
18. Negatively charged ion is
19. Common name of O_3
20. The homogenous mixture whose particle size is $< 10^{-9}$ m.
21. Minerals from which metals are extracted economically.
23. The subatomic particle carry negative charge is.
26. The colloid in which dispersing medium is solid & dispersed phase is liquid.

2. The type of mixture whose particle size range is 10^{-7} to 10^{-5}



5. The sub-atomic particle carry positive charged particles.
7. The branch of chemistry that deals with study of all known element their compounds & except hydrocarbon & their derivatives.
10. The type of colloid in which dispersing medium is liquid & dispersed phase is solid.
11. The smallest particle that take part in chemical reaction.
12. It is SI unit of amount of substance.
14. Addition of H_2 , gain of electron or loss of O_2 is called.....
22. Poorest conductor of electricity.
24. The ray formed by removing all electrons from helium atom.
25. The probability of finding an electron in an atom is maximum at this place.

ANSWER**ACROSS:**

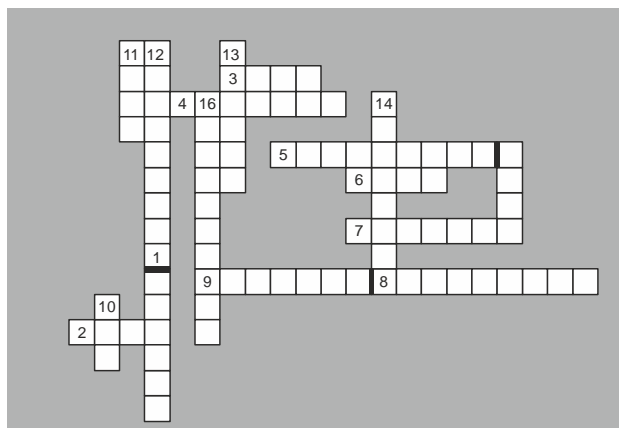
1. Base
3. Plasma
4. Colloid
6. Alloy
8. Bromine
9. Nitrogen
13. Solvent
15. Acid
16. Smelting
17. Cation
18. Anion
19. Ozone
20. Solution
21. Ore
23. Electron
26. Gel

DOWN:

2. Suspension
5. Proton
7. Inorganic
10. Sol
11. Electron
12. Mole
14. Reduction
22. Lead
24. Alpha
25. Orbital

Road to IIT is pretty straight, you just need to take first step in the right direction & then continue moving on it.

ELEMENTS AND PROPERTIES OF SUBSTANCES



DOWN

ACROSS

- | | |
|---|--|
| <p>1. Used in thermometers and is liquid at room temperature.</p> <p>10. Metal which is non-poisonous and used to coat tiffin boxes</p> <p>11. Yellow colour elements which is most ductile and is used in jewellery.</p> <p>12. The most abundant metal on the earth surface.</p> <p>13. Best conductor of electricity and is used to make jewellery.</p> <p>14. Hardest metal which is used is electroplating.</p> <p>15. Metal which is poorest conductor of heat.</p> <p>16. Substances having different physical properties but have almost similar chemical properties.</p> | <p>2. Used as a major component in galvanisation</p> <p>3. Exhibits magnetic properties and its corrosion process is termed as rust .</p> <p>4. Egg-shell contain this element as the main constituent.</p> <p>5. Element which is not a metal but placed in reactivity series .</p> <p>6. Yellow colour elements which is most ductile and is used in jewellery</p> <p>7. Allotrope of carbon which is hardest substance</p> <p>8. Floats on water surface if immersed and when ignited gives white dazzling flame.</p> <p>9. A synthetic substance which can be moulded into any shape by heating.</p> |
|---|--|

ANSWER KEY
DOWN

1. Mercury
10. Tin
11. Gold
12. Aluminium
13. Silver
14. Chromium
15. Lead
16. Allotropes

ACROSS

1. Magnesium
2. Zinc
3. Iron
4. Calcium
5. Hydrogen
6. Gold
7. Diamond
8. Malleable
9. Plastic