

## **1. ACIDS - BASES**

### **Indicators :**

The substances which change in colour when some substances are added to them are called indicators.

- \* Turmeric, Hibiscus, beetroot, Oleandar, Mango leaf .. etc. are natural indicators.

### **Acids :**

The Substances that are sour taste and turn blue listmey to red are called acids.

### **Natural Acids :**

The substances present in plants and animals are called natural acids.

Ex: Formic acid, Citric acid etc.

- \* Hydrochloric acid, sulphuric acid and Nitric acid etc. are prepared from minerals.
- \* We experienced a burning sensation when bitten by an ant. The sensation is due to the presence of formic acid that the ant releases.
- \* Acids react with metals like zinc, copper, magnesium and liberate Hydrogen gas.
- \* Acids react with peaces of marbles and liberate Carbon-dioxide gas, which turns lime water into milky.

### **Bases:**

The substances which are soapy to touch and bitter in taste and turn red litmus to blue are called bases.

Ex : Sodium Hydroxide, Ammonium Hydroxide etc.

### **Neutralization :**

When acids and bases are mixed definite proportions and form salt and water. This is called neutralization.     Acid + base → Salt + water

### **Salt :**

Salts are formed by the reaction of acids with bases. EX : Sodium chloride, copper sulphate etc.

- \* The salts which show acidic property are called acidic salts.
- \* The salts which show basic property are called basic salts
- \* The salts which show neutral property are called neutral salts
- \* When some substances are kept in a copper container for a long time then copper reacts with the acids present in the substances and forms a blue - green layer in the innerwalls of the container.

To avoid this reaction the inner walls of these vessels are coated with tin.

Indicator	In the presence of Acidic medium	In the presence of basic medium	In the presence of neutral medium
Blue Litmus	Turns to red	No change	No change
Red Litmus	No Change	Turns to Blue	No Change
Methyle orange	Turns to red	Turns to Yellow	No change
Phenphtneline	Colour less	Turns to Pink	No change

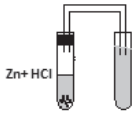
Acid	Substance
Acetric Acid	Vinegar
Olive Acid	Olive oil
Citric Acid	Lemon, orange
Stearic Acid	Fats
Buetaric Acid	Butter
Tartoric Acid	Grapes, Tamarind
Lactic Acid	Curd, Butter Milk
Palmtic acid	Palm oil
Oxalic acid	Tomatoes, Beetroot
Ascorbic acid	Amla, citrus fruits
Malic acid	unripe apples
Uric acid	urine

Acids	Bases	Salts
Preparation of pickles - Acetic Acid	Removing of greasy stains - Ammonium Hydroxide	Food preservation - Common Salt
Preparation of pulihora - citric acid	Soap contains potassium Hydroxide & Sodium hydroxide	Wash clothes - Washing soda
Cool drinks - Carbonic Acid	Bleaching powder contains - Calcium hydroxide	Cold drinks, cake - baking soda
Manures, Batteries - Sulphuric Acid	Fire extinguisher contains - Aluminium hydroxide	
Medicines, Dyes - Hydrochloric acid		
Explosives - Nitric Acid		

Substance	Base
Lime Water	Calcium Hydroxide
Glass Cleaner	Ammonium Hydroxide
Soaps	Sodium Hydroxide/ Potassium Hydroxide
Milk of Magnesium	Magnesium Hydroxide

Acidic Substances	Basic Substances	Natural Substances
Orange	Shampoo	Mineral water
Tomato	Washing soda	Salt water
Vinegar	Bathing Soap	Sugar
Spirit	Detergent soap	
Saliva	Lime water	
Cucumber	Baking soda	
Ridge gourd	Sodium carbonate	
Kheera		
Milk, Butter Milk		
Cool Drinks		
Lemon Juice		
Grape Juice		

**BITS**

1. An example of natural acid ( )  
1. Hydrochloric acid                      2. Sulphuric Acid  
3. Formic Acid                              4. Nitric Acid
2. The inner walls of vessels made up of copper are coated with ( )  
1. Bronze                      2. Tin                      3. Iron                      4. Gold
3. An example of natural indicator ( )  
1. Methylene orange                      2. Phenolphthalein  
3. Turmeric paper                      4. Litmus
4. When acids react with metals ... gas is evolved ( )  
1. Hydrogen                      2. Oxygen                      3. Carbon dioxide                      4. Nitrogen
5. The acid present in ant's bite ( )  
1. Tartaric acid                      2. Lactic acid                      3. Oxalic acid                      4. Formic acid
6. The common name of acetic acid is ( )  
1. Olive oil                      2. Lime water                      3. Vinegar                      4. All of these
7. Acidity of soil is decreased by adding .. to the soil ( )  
1. Acid                      2. Lime                      3. Fertilisers                      4. Salts
8. The process of mixing of acids and bases in definite proportions is called ( )  
1. Salt                      2. Water                      3. Neutralization                      4. Concentration
9. Curd contains .... acid ( )  
1. Tartaric                      2. Lactic                      3. Formic                      4. Oxalic
10. For removing ink stains on clothes ... acid is used ( )  
1. Sulphuric acid                      2. Oxalic acid                      3. Hydrochloric acid                      4. Acetic acid
11. The colour of methyl orange indicator in acidic solution ( )  
1. Blue                      2. Red                      3. Yellow                      4. Pink
12. In the following which one is neutral solution ( )  
1. Vinegar                      2. Tea                      3. Lime water                      4. Sugar solution
13. The substances which can change colour when added to other substances are called... ( )  
1. Acids                      2. Bases                      3. Indicators                      4. Neutrals
14. Which gas test is this ( )  
  
1. oxygen                      2. Nitrogen                      3. Hydrogen                      4. Carbon dioxide

15. Pickels, Jams and jellys should not preserve in the following vessels ( )  
 1. Plastic                    2. Glass                    3. Earthen ware                    4. Copper
16. Which of the following is acidic in nature ? ( )  
 1. Lemon Juice                    2. Baking soda                    3. Lime water                    4. Antacid
17. ... is used to clean windows ( )  
 1. Calcium Hydroxide                    2. Potassium Hydroxide  
 3. Ammonium Hydroxide                    4. Magnesium hydroxide
18. What is the main cause of acid rain ? ( )  
 1. Pollution                    2. Deforestation  
 3. Afforestation                    4. Excessive rains
19. When nitric acid added to egg shells .. gas is evolved ( )  
 1. Hydrogen                    2. Oxygen                    3. Carbondioxide                    4. Nitrogen
20. Window cleaners are ... in nature ( )  
 1. Acidic                    2. Basic                    3. Neutral                    4. None
21. To protect tooth decay we are advised to brush our teeth regularly. The nature of the tooth paste commanly used is ... ( )  
 1. Acidic                    2. Neutral                    3. Basic                    4. Baking Soda
22. The gas which puts off burning splinter with POP sound is ( )  
 1. Hydrogen                    2. Oxygen                    3. Carbondioxide                    4. Nitrogen
23. Methyl orange indicator gives .. colour with acids and .. colour with bases  
 a. Red                    b. Yellow                    c. Green                    d. Blue ( )  
 1. a and c                    2. a and b                    3. c and d                    4. a and d

**KEY FOR ACIDS - BASES**

- |       |       |       |       |       |
|-------|-------|-------|-------|-------|
| 1) 3  | 2) 2  | 3) 3  | 4) 1  | 5) 4  |
| 6) 2  | 7) 2  | 8) 3  | 9) 2  | 10) 2 |
| 11) 2 | 12) 4 | 13) 3 | 14) 4 | 15) 4 |
| 16) 1 | 17) 3 | 18) 1 | 19) 3 | 20) 2 |
| 21) 3 | 22) 1 | 23) 2 |       |       |

## **2. COMBUSTION, FUELS AND FLAME**

**Materials are of two types :** 1. Combustible materials, 2. Non-Combustible Materials.

- \* Oxygen which is present in air is required for burning. Burning a material in the presence of air (oxygen) is called combustion.
- \* Oxygen is evolved on heating potassium permanganate (or) Potassium chlorate (or) Hydrogen peroxide.
- \* The temperature at which a substance catches fire is called ignition temperature.
- \* The ignition temperature is different for different substances.
- \* Inflammable substances like Petrol, Alcohol, LPG etc have very low ignition temperature and easily catch fire.
- \* The type of combustion in which material suddenly burns into flames without the application of any external agent is called spontaneous combustion.  
Eg : Sodium, phosphorous Etc.
- \* The type of combustion in which material burns rapidly and produces heat and light is called rapid combustion.  
Eg : Gas, Petrol, Spirit, camphor etc.
- \* The type of combustion in which a sudden reaction takes place with the evolution of heat, light and sound is called explosion.  
Eg : Crackers and few chemicals.
- \* The amount of heat energy produced on complete combustion of 1kg of that fuel is called Calorific value. Calorific value measured in kilo joules/kg (or) kj/kg.
- \* By cutting of air supply and lowering the temperature are better methods to control fire.
- \* The most common fire extinguisher is water, it works only when things like wood, cloth and paper are on fire.
- \* Carbon dioxide gas is the best controller for fires involving oil petrol and electrical equipments.
- \* The head of match stick contains a mixture of antimony trisulphide, potassium chlorate and white phosphorous with some glue and starch.
- \* The rubbing surface has powdered glass and a little red phosphorus. When the match stick is struck against the rubbing surface, red phosphorus converts into white phosphorus, this immediately reacts with potassium chlorate and produces enough heat to ignite antimony trisulphide.
- \* In the blue zone of the candle flame, vaporized wax burns completely due to good supply of oxygen.
- \* In the dark zone of candle flame, wax does not burn due to insufficient supply of oxygen.



12. **Fuels** **Components present** ( )
- |                     |     |                        |
|---------------------|-----|------------------------|
| (i) L.P.G.          | ( ) | a. Methane             |
| (ii) C.N.G.         | ( ) | b. Propane (or) Butane |
| (iii) Bio Gas       | ( ) | c. Acetome             |
| 1. i-a, ii-c, iii-c |     | 2. i-b, ii-a, iii-c    |
| 3. i-b, ii-a, iii-a |     | 4. i-a, ii-b, iii-b    |
13. **Colours in candle flame** **Heat** ( )
- |                     |     |                     |
|---------------------|-----|---------------------|
| (i) Blue zone       | ( ) | a. Moderately hot   |
| (ii) Yellow Zone    | ( ) | b. Least hot        |
| (iii) Dark zone     | ( ) | c. Hottest part     |
| 1. i-a, ii-b, iii-c |     | 2. i-c, ii-a, iii-b |
| 3. i-c, ii-b, iii-a |     | 4. i-a, ii-c, iii-b |
14. **Fuel** **Calorific value** ( )
- |                     |     |                     |
|---------------------|-----|---------------------|
| (i) Cow dung        | ( ) | a. 35000-40000      |
| (ii) Bio-Gas        | ( ) | b. 6000-8000        |
| (iii) Coal          | ( ) | c. 25000-30000      |
| 1. i-b, ii-a, iii-c |     | 2. i-c, ii-a, iii-b |
| 3. i-b, ii-c, iii-a |     | 4. i-c, ii-b, iii-a |
15. **Element** **Preserving Place** ( )
- |                     |     |                     |
|---------------------|-----|---------------------|
| (i) Sodium          | ( ) | a. Water            |
| (ii) Phosphorous    | ( ) | b. Black Bottle     |
| (iii) Iodine        | ( ) | c. Kerosene         |
| 1. i-c, ii-b, iii-c |     | 2. i-a, ii-b, iii-c |
| 3. i-a, ii-c, iii-b |     | 4. i-c, ii-a, iii-b |

**OPTIONS**

**Find the correct statement**

- A. Statement (i) & (ii) are correct  
 B. Statement (i) is correct  
 C. Statement (ii) is correct  
 D. Statement (i) & (ii) are not correct
16. Statement (i) : The lowest temperature at which a substance catches fire is called ignition temperature. ( )  
 Statement (ii): Burning a material in the presence of carbondioxide is called combustion.

1. A                      2. B                      3. C                      4.D



17. Statement (i): Petrol and alcohol are combustible materials ( )  
 Statement (ii): Sand, and Iron are non-combustible materials.  
 1. A                      2. B                      3. C                      4.D
18. Statement (i) : Good fuel should have low calorific value ( )  
 Statement (ii) : Good fuel should be readily available  
 1. A                      2. B                      3. C                      4.D
19. Statement (i) : On heating potassium permanganate produces oxygen.  
 Statement (ii): On adding manganese dioxide to hydrogen peroxide produces oxygen. ( )  
 1. A                      2. B                      3. C                      4.D
20. Statement (i) : In a candle flame the hottest part is in yellow colour  
 Statement (ii): Explosion reaction takes place with evolution of heat and light only ( )  
 1. A                      2. B                      3. C                      4.D
21. Statement (i): Incomplete combustion of a fuel gives carbon monoxide gas.  
 Statement (ii): on combustion of fuel gives carbondioxide. ( )  
 1. A                      2. B                      3. C                      4.D
22. Statement (i) : Water is commonly used to control fires ( )  
 Statement (ii): Inflammable substances have very high ignition temperature.  
 1. A                      2. B                      3. C                      4.D
23. Statement (i) : Cutting of trees leads to deforestation ( )  
 Statement (ii): Carbondioxide in the environment causes global warming.  
 1. A                      2. B                      3. C                      4.D
24. Statement (i) : The amount of heat energy produced on complete Combustion of 1gm of fuel is called its calorific value. ( )  
 Statement (ii): Calorific value expressed in a unit KJ/gm.  
 1. A                      2. B                      3. C                      4.D
25. Statement (i): Magnesium on burning in air gives Magnesium carbonate.  
 Statement (ii): Oxides of sulphur and nitrogen causes acid rain ( )  
 1. A                      2. B                      3. C                      4.D

**Find the correct one**

- A) Both 'A' and 'R' are true and 'R' is correct explanation of 'A'  
 B) Both 'A' and 'R' are true and 'R' is not correct explanation of 'A'  
 C) 'A' is true and 'R' is false.  
 D) 'A' is false and 'R' is true

26. Assertion (A): The lowest temperature at which a substance catches fire is called ignition temperature.  
Reason (R) : Spirit and Petrol have very low ignition temperature. ( )  
1. A                      2. B                      3. C                      4.D
27. Assertion (A) : We should not spray water on oil fires  
Reason (R) : Water is heavier than the oil it sinks below the oil and oil keeps burning on the top. ( )  
1. A                      2. B                      3. C                      4.D
28. Assertion (A) : Water containing paper cup doesn't burn.  
Reason (R) : The water in cup prevents the paper to reach its ignition temperature and hence it doesn't burn. ( )  
1. A                      2. B                      3. C                      4.D
29. Assertion (A): Faraday proved in his experiments that oxygen is necessary for burning.  
Reason (R) : Potassium chlorate, Potassium permanganate gives oxygen on heating. ( )  
1. A                      2. B                      3. C                      4.D
30. Assertion (A): On introducing a clean glass slide into the yellow zone of flame, a blackish circular ring is formed on the glass slide.  
Reason (R): In the yellow zone of the flame incomplete combustion takes place and un-burnt carbon particles deposit as circular ring. ( )  
1. A                      2. B                      3. C                      4.D

**BITS**

31. Which of the following have least ignition temperature ( )  
a) Charcoal              b) Kerosene              c) Petrol              d) Diesel  
e) Camphor              f) LPG  
A) only b,c, & d                                      B) Only b,c,d & e  
C) Only b,c,d,e & f                                      D) a,b,c,d,e & f
32. Reason for the circular blackish ring formed on the slide when placed in the luminous zone (Yellow colour zone) of candle ( )  
A) Burnt carbon                                      B) Water vapour  
C) Wax Particles                                      D) Unburnt carbon
33. Units of calorific value ( )  
A) kilo calorie/Kg                                      B) Kilo-Joule/Kg  
C) Kilo Joule/ gm                                      D) Kilo calorie/ gm

34. The caution wrote on petrol tankers ( )  
 A) Highly flammable B) Highly purified  
 C) Highly inflammable D) None of these
35. The fuels with same calorific values (approximately) ( )  
 A) Cow dung cake - coal B) L.P.G. - Biogas  
 C) Petrol - Diesel D) All of these
36. Which of the following is non-combustible ( )  
 A) Spirit B) Camphor C) Metals D) Dry grass E) Gas  
 A) only a,b &e B) only - a C) only C D) Only C&D
37. The glass material used to burn paper by sun rays ( )  
 A) Convex lens B) Concave lens C) Convex mirror D) All of these
38. The gas released by the action of baking soda and acid ( )  
 A) CO B) CO<sub>2</sub> C) O<sub>2</sub> D) SO<sub>2</sub>
39. Which of the following is used to extinguish fire ( )  
 a) Water b) CO<sub>2</sub> c) Sand d) Spirit  
 A) Only a&B B) only B&C C) only a,b&c d) All of these
40. Which of the following is correct descending order of calorific values of fuel( )  
 A) dung cake > coal > petrol > bio gas B) Hydrogen > petrol > LPG > CNG  
 C) LPG > Hydrogen > Coal > Petrol D) CNG > petrol > Coal > dung cake.

**KEY FOR COMBUSTION, FUELS AND FLAME**

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

### **3. METALS AND NON METALS**

#### **Synopsis :-**

1. In ancient days man used stone and wood to make his tools and weapons.
2. Bronze age and Iron age are classified corresponding to the period related to the discovery of metals.
3. Now a days metals and not necessary are used for making tools, machines, cars, trucks, ships, jewellery, utensils etc.
4. Some of the common metals used are Iron, copper, silver, gold, lead, zinc, aluminium, magnesium, chromium, and mercury.
5. Some of the common non metals used are carbon, sulphur, Iodine, Oxygen, Hydrogen, phosphorus and chlorine, nitrogen.
6. Physical properties of metals 1. Lustre.

Generally metals are lustrous natured i.e bright.

Note : All lustrous materials are not metals Ex : Mirror.

**2. Sonorous :-** Metals produce ringing sounds so they are said to be sonorous the other materials other than metals are not sonorous.

**3. Malleability:-** Metals when beaten harder, could be changed into sheets. Non metals like carbon, sulphur broke into small pieces and then forms powder. But did not get flattened.

**4. Ductility :-** The property of the elements due to which they can be drawn into wires is called ductility.

**5. Electric conductivity:-**Materials which flow electricity through them are called conductors. Which do not pass electricity through them are called insulators. Metals are good conductors of electricity Non-metals do not conduct electricity.

**6. Heat conductivity:-** Metals are good conductors of heat where as nonmetals are Bad conductors of heat.

Metals:-Elements which are generally.

1. Solid in state.
2. Hard,
3. Lustrous
4. Heavier than water
5. Malleable
6. Ductible
7. Tensile
8. High melting and boiling points
9. Good conductors of heat and Electricity.
10. Sonorous

Non Metals :-Elements which are generally.

1. Brittle solids or liquids or gases.
2. Not hard
3. Non lustrous
4. Low melting and boiling points
5. Bad conductors of heat and Electricity
6. Non Sonorous.

Metalloids or semimetals :- Materials which have properties of neither metals nor nonmetals.

Ex : Boron, silicon, germanium, Arsenic.

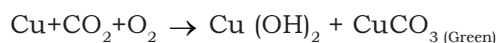
### **Chemical Properties :-**

#### **1. Reaction with Oxygen :-**

1. Metals reacts with oxygen and forms corresponding metal oxides when these metal oxides dissolved in water they forms bases.

Ex : Iron in the presence of oxygen + water = Rust.

2. Copper vessel when exposed to moist air for a long time acquires a dull green coating.



- b) Non metals reacts with oxygen and forms non metallic oxides when dissolved in water forms acids.



#### **2. Reaction with Water :-**

1. Some metals reacts with water vigorously where as some metals reacts with water slowly.

Ex : Sodium (Na) reacts vigorously

Iron (Fe) reacts slowly.

Generally nonmetals do not react with water though they are very reactive in air.

Ex:- Phosphorous is reactive in air. But not reactive in water so it is stored in water.

#### **3. Reaction with acids :-**

Metals reacts with acids and produce hydrogen gas with a pop sound.

Non metals do not react with acids metal activity series.

(Potassium (k) > Sodium > Calcium > Magnesium > Aluminium > Zinc > Iron > lead > Tin > Copper > Silver > mercury > Gold)  $\geq$

#### 4. Reaction with bases :-

Metals reacts with bases and produce hydrogen gas.

Reaction of non metals with bases are complex.

#### 5. Displacement reactions :-

One metal displaces another metal in its compound and such reactions are called displacement reactions.

#### Uses :

Metals : Machinery, automobiles, airoplanes, trains, satellites, industeal gadges, cooking utensils water boilers etc are made by metals.

Non metals :

1. Non metal which is essential for life and inhale during breathing by all living beings - oxygen.
2. Non metal used in fertilizers to enhance the growth of plants is - nitrogen.
3. Non metal used in water purification - chlorine.
4. Non metal used in purple coloured solution which is applied on wounds as an antiseptic - Iodine.

#### **OBJECTIVE TYPE BITS (METALS AND NON METALS)**

1. Which of the following metal is in liquid state at room temperature ( )  
A. Sodium                  B. Zinc                  C. Mercury                  D. Magnesium
2. Which of the following can be beaten into thin sheets ( )  
A. Zinc                  B. PhosphorusC. Sulpher                  D. Oxygen
3. .... is a very reactive nonmetal ( )  
A. Sulpher                  B. Nitrogen                  C. Chlorine                  D. Phosphorus
4. Metals reacts with acids to produce ... gas ( )  
A. H<sub>2</sub>                  B. O<sub>2</sub>                  C. Cl<sub>2</sub>                  D. N<sub>2</sub>
5. .... Foils are used to wrap food items ( )  
A. Gold                  b. Aluminium                  C. Magnesium                  D. Zinc
6. Which metal is stored in kerosine ( )  
A. Zinc                  B. Magnesium                  C. Iron                  D. Sodium
7. Which of the following metal is nonsonorous ( )  
A. Mercury                  B. Iron                  C. Copper                  D. Carbon

8. Saloni burns a piece of charcoal in a test tube which gas will be evolved  
 A. H<sub>2</sub>                      B. O<sub>2</sub>                      C. CO<sub>2</sub>                      D. SO<sub>2</sub>                      (   )
9. Which is used in making foils to decorate sweets                      (   )  
 A. Aluminium              B. Silver              C. Zinc              D. Sodium
10. The property which can be drawn into copper and aluminium wires is                      (   )  
 A. Lustre                      B. Sonorous              C. Ductility                      D. Malleability
11. Metals react with oxygen and form their oxides which are.. in nature                      (   )  
 A. Neutral in nature                      B. Acidic in nature  
 C. Basic in nature                      D. None of these
12. Which of the following is correct                      (   )  
 A. All metals are ductile                      B. All nonmetals are ductile  
 C. Generally metals are ductile                      D. Generally non metals are ductile.
13. Some elements neither fit with the metals nor with the non metals they are called  
 A. Metalloids              B. Mixtures              C. Compounds              D. All of these                      (   )
14. Which nonmetal conducts electricity                      (   )  
 A. Sulphur              B. Phosphorous              C. Graphite                      D. Sodium
15. Phosphorous is stored in...                      (   )  
 A. Kerosine              B. Water              C. Glass Jar                      D. Air
16. The oxides which react with both acidic and Basic solutions are called                      (   )  
 A. Metal oxide                      B. Non metal oxides  
 C. Amphoteric oxides                      D. None
17. Which of the following is a soft metal and can be cut with a knife                      (   )  
 A. Iron                      B. Sodium              C. Zinc                      D. Magnesium
18. Which of the following has low melting and boiling points                      (   )  
 A. Potassium              B. Iron              C. Zinc                      D. Magnesium
19. Which of the following is a poor conductor of electricity                      (   )  
 A. Copper                      B. Tungsten              C. Silver                      D. Gold
20. An allotropic form of carbon which is hardest in nature                      (   )  
 A. Graphite                      B. Diamond              C. Iron                      D. Steel
21. Which of the following nonmetal is lustrous                      (   )  
 A. Carbon                      B. Sulphur              C. Iodine                      D. Nitrogen
22. Which is the nonmetal acts as a good conductor of electricity                      (   )  
 A. Diamond                      B. Copper              C. Graphite                      D. Silver

23. Which of the following metal is in liquid state at room temperature ( )  
 A. Sodium                      B. Magnesium    C. Galllicum                      D. Potassium
24. Which of the following is a metalloid ( )  
 A. Arsenic                      B. Steel                      C. Iron                      D. Carbon
25. Which of the following is least reactive ( )  
 A. Potassium                      B. Iron                      C. Aluminium                      D. Zinc
26. Which of the following is a natural oxide ( )  
 A. SO<sub>2</sub>                      B. CO                      C. MgO                      D. CaO
27. Name the metal used to make utensils as well as electric wires ( )  
 A. Zinc                      B. Iron                      C. Copper                      D. Slver
28. Which metal is used in making thermometers ( )  
 A. Copper                      B. Zinc                      C. Mercury                      D. Steel
29. Which non metal is used in purifying water ( )  
 A. Oxygen                      B. Chlorine                      C. Sulpher                      D. Phoshprous
30. ... metal presents in central atom of chlorophyll in plants ( )  
 A. Carbon                      B. Sulpher                      C. Magnesium                      D. Nitrogen
31. The metal present in our blood is ( )  
 A. Magnesium                      B. Iron                      C. Oxygen                      D. Carbon
32. Earlymen used these metals to make his tools ( )  
 A. Iron and Copper                      B. Gold and silver  
 C. Aluminium and gold                      D. Silver and mercury
33. The handles of the utensils are made up of ( )  
 A. Metals                      B. Non metals    C. Both A and B                      D. Bakalite
34. Out of these which is more reactive with water ( )  
 A. Copper                      B. Iron                      C. Magnesium                      D. Sodium
35. Choose the correct matching ( )  
 i) Iodine                      a) gun powder  
 ii) Silver                      b) Packing of food material  
 iii) Aluminium                      c) Medical Purpose  
 iv) Oxygen                      d) Jewellery  
 v) Sulpher                      e) living things need to live  
 A. d,c,a,b,e                      B. c,d,b,e,a                      C. a,c,b,d,e                      D. e,a,c,b,d



36. Choose the correct matching ( )

- |                                 |                                   |
|---------------------------------|-----------------------------------|
| i) shiny surface                | a) Ductility                      |
| ii) Ringing sound               | b) lustrous                       |
| iii) Flattered into sheet       | c) Good conductors of electricity |
| iv) Drawn into wires            | d) Sonorous                       |
| v) Allow passage of electricity | e) Malleability                   |
- A. b,d,e,a,c      B. d,c,a,e,b      C. b,c,d,e,a      D. b,d,a,c,e

**KEY FOR METALS AND NON METALS**

- |     |     |     |     |     |
|-----|-----|-----|-----|-----|
| 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) |     |     |     |     |

#### **4. COAL AND PETROLEUM**

1. The branch of science which deals with materials is material science.
2. Materials were used not only sources but also sources of energy.
3. Energy sources are two types 1. Exhaustible Resources, 2. In exhaustible Resources.
4. Exhaustible resources :- Air, water, solar energy.  
In exhaustible resources :- Petroleum, coal, natural gas
5. Died Plankton organisms settled at the bottom of the sea or ocean and covered with layers of sand and clay over millions of years due to absence of air, high temperature and high pressure these dead organisms transformed into petroleum and natural gas.
6. Petroleum contains hydrocarbons.
7. The useful substances obtained from petroleum and natural gas are called petrochemicals.
8. Gas, Petrol, Diesel, Kerosene, Lubricants, Paraffin wax etc. are examples of petrochemicals
9. petrochemicals are used in the manufacture of washing liquids, fertilizers, synthetic rubber, paints, ointment, face cream, fibres etc.
10. Petroleum is called as "Liquid Gold".
11. The organic matter sank deeper and deeper under high pressure and high temperature, these dead plants slowly converted to coal.
12. The process of conversion of dead vegetation into coal is called carbonisation.
13. Coal consists of mainly carbon
14. Coal gives as coke, coal tar, coal gas.
15. Coke is pure form of carbon it is used in the manufacture of steel and in the extraction of metals.
16. Coal tar is used in the production of Naphthalene, plastics, perfumes, paints etc.
17. Coal gas is used as fuel in industries.
18. Natural gas is not just an important domestic and industrial fuel but also used in the manufacture of fertilizers.
19. Coal, petroleum and natural gas called as fossil fuels.
20. Excessive use of fossil fuels causes air pollution (Hg,Se,Pb, Ar like heavy metals) green house effect, global warming and many health problems.

1. The first oil well was drilled in... ( )  
A. UK                      B. USA                      C. USSR                      D. UAE

2. Purest form of Carbon is ( )  
 A. Coal                      B. Charcaol      C. Coke                      D. All of these
3. The substance obtained from coal tar is ( )  
 A. petrol                      B. Grease          C. Vaseline                  D. Naphthalene
4. Coke is used in the manufacture of .. ( )  
 A. Perfumes                  B. Medicines      C. Steel                      D. Synthetic fibres
5. An example of fossil fuel is ( )  
 A. Wood                      B. Animal Waste    C. Coal                      D. All of these
6. Coaltar contians about .. substances ( )  
 A. 100                      B. 200                  C. 300                      D. 400
7. What is the technique used to separate various components of petroleum  
 A. Decantation                                      B. Distillation ( )  
 C. Fractional Distillation                      D. Chromato graphy
8. The slow process of conversion of dead vegetation into coal is called ( )  
 A. Combustion                                      B. Carbonisation  
 C. Calcination                                      D. Dehydration
9. Example for inexhaustible resources ( )  
 A. Solar energy          B. Wind Energy    C. Tidal energy          D. All of these
10. Which of the following is named as Black Gold ( )  
 A. Coke                      B. Natural gas    C. petroleum                  D. Coal

**MATCH THE FOLLOWING**

11. **Products of coal**                                      **Byproducts** ( )
- |                     |     |                     |
|---------------------|-----|---------------------|
| (i) Coke            | ( ) | a. Perfumes         |
| (ii) Coal Tar       | ( ) | b. Water gas        |
| (iii) Coal gas      | ( ) | c. Domestic gas     |
| 1. i-a, ii-b, iii-c |     | 2. i-a, ii-c, iii-b |
| 3. i-b, ii-a, iii-c |     | 4. i-c, ii-b, iii-a |
12. **Sources**                                      **Products** ( )
- |                     |     |                     |
|---------------------|-----|---------------------|
| (i) Coal            | ( ) | a. Fertilizers      |
| (ii) Petroleum      | ( ) | b. Kerosine         |
| (iii) Natural gas   | ( ) | c. Coal gas         |
| 1. i-a, ii-b, iii-c |     | 2. i-a, ii-c, iii-b |
| 3. i-b, ii-a, iii-c |     | 4. i-c, ii-b, iii-a |

13. **Types of Coal** **Carbon %** ( )
- (i) Anthracite ( ) a. 38%
- (ii) Bituminous ( ) b. 65%
- (iii) Lignite ( ) c. 96%
1. i-c, ii-a, iii-b 2. i-c, ii-b, iii-a
3. i-a, ii-b, iii-c 4. i-b, ii-a, iii-c
14. **Petroleum Products** **Evaluation temperature (nearly)** ( )
- (i) Gasoline ( ) a. 150°C to 250°C
- (ii) Kerosine ( ) b. 50°C to 150°C
- (iii) Diesel ( ) c. 250°C to 350°C
1. i-a, ii-b, iii-c 2. i-a, ii-c, iii-b
3. i-b, ii-c, iii-a 4. i-b, ii-a, iii-c
15. **Fuels** **Utilizers** ( )
- (i) Coal ( ) a. Motor Cycles
- (ii) Diesel ( ) b. Trucks
- (iii) Petrol ( ) c. Thermal Power stations
1. i-b, ii-c, iii-a 2. i-c, ii-a, iii-b
3. i-c, ii-b, iii-a 4. i-b, ii-a, iii-c

**Choose the correct one**

- A. Statement (i) & (ii) are correct
- B. Statement (i) is correct
- C. Statement (ii) is correct
- D. Statement (i) & (ii) are not correct
16. Statement (i) : Coal gas was used for street lighting for the first time in london in 1810 ( )
- Statement (ii): CNG is used for power generation.
1. A 2. B 3. C 4.D
17. Statement (i) : Compressed natural gas (CNG) is a cleaner fuel ( )
- Statement (ii): Paraffin wax is used for paints.
1. A 2. B 3. C 4.D
18. Statement (i) : Coal tar is the purest form of carbon ( )
- Statement (ii): Bituminus is used in place of coal tar for metalling the roads
1. A 2. B 3. C 4.D

19. Statement (i) : Coal tar is a mixtures of about 300 substances ( )  
 Statement (ii): Coal, petroleum and natural gas be prepared in the laboratory from dead organisms.  
 1. A                      2. B                      3. C                      4.D
20. Statement (i) : The slow process of conversion of dead vegetation into coal is called carbonisation. ( )  
 Statement (ii): Petroleum is formed from the remains of tiny organism called planktom.  
 1. A                      2. B                      3. C                      4.D
21. Statement (i): Biodiesel is toxic and non-renewable ( )  
 Statement (ii): The seperation technique used to seperate various components of petroleum is called fractional distillation.  
 1. A                      2. B                      3. C                      4.D
22. Statement (i): Asphalt was used in the construction of walls and towers of Babylon. ( )  
 Statement (ii): Coke is used in the manufacture of plastic.  
 1. A                      2. B                      3. C                      4.D
23. Statement (i): Coal consists of mainly carbon. ( )  
 Statement (ii): Petroleum consits of mainly carbohydrates.  
 1. A                      2. B                      3. C                      4.D
24. Statement (i): Petroleum products such as petrol and diesel are used as fuels in transport. ( )  
 Statement (ii): Due to great commercial importance petroelum is called liquid gold.  
 1. A                      2. B                      3. C                      4.D
25. Statement (i): Coal fired power plants emits mercury. ( )  
 Statement (ii): Sail boats and sailing ships have been using wind power since thousands of years.  
 1. A                      2. B                      3. C                      4.D
26. Choose correct example to misuse of fuel resources. ( )  
 a. Do not stopping the engine at traffic signals.  
 b. using personal vehicles by evoiding public transport.  
 c. using cookers while cooking.  
 d. By leaving fan and lights on when exist a room  
 A) only a & b    B) only b & c                      C) only a,b & d    D) a,b,c,d

27. Choose the incorrect one from the following. ( )
- a. CNG - compressed nitrogen gas      b. CFC- Chlore flouro carbons  
 c. LPG - Liquid petroleum gas  
 d. ONGC - Oxygen and Nitrogen gas corporation  
 A) only a,b,c      B) only a&b      C) only a&d      D) only a
28. Choose correct example to meet the future energy needs ( )
- a. By utilizing wind energy      B. By utilizing Nuclear energy  
 c. By utilizing Garbage energy      D. By utilizing Solar energy  
 A) only a,b&c      B)only b,c, &d      C) onlya,b&D      D) a,b,c,d
29. Choose correct one from the following ( )
- a. The branch of science which deals with materials is called material science.  
 b. Availability of coal and petroleum is limited.  
 c. Volume of petroleum is measured in barrel  
 d. 1 barrel = 169 litres  
 A) only a,b&c      B) only b,c, &d      C) only a,c,&d      D) a,b,c,&d
30. Choose the false one among the following ( )
- a. Carbondioxide, methane, causes global warming  
 b. CFC gases deplete ozone layer  
 c. Sulphur oxides and nitrogen oxides causes acid rain  
 d. Carbon monoxide increases the capacity of Hemoglobin in blood  
 A. a,b,c,&d      B) only a      C) only C      D) only D

**Choose the correct one**

- A) Both 'A' and 'R' are true and 'R' is correct explanation of 'A'  
 B) Both 'A' and 'R' are true and 'R' is not correct explanation of 'A'  
 C) 'A' is true and 'R' is false.  
 D) 'A' is false and 'R' is true ( )
31. Assertion (A): Coal, Petroleum and Natural gas are fossil fuels.  
 Reason (R) : Fossil fuels are formed from the dead remains of living organism under the earth over millions of years.  
 1. A      2. B      3. C      4.D
32. Assertion (A) : The slow process of conversion of dead vegetation into petroleum is called carbonisation. ( )  
 Reason (R) : Petroleum like complex mixtures are separated into various components by the technique fractional distillation  
 1. A      2. B      3. C      4.D

33. Assertion (A) : Excessive use of fossil fuels releases carbon monoxide, carbon dioxide, nitrogen dioxide, lead, CFC and other oxides in to atmosphere.  
Reason (R) : CFC (Chloro fluoro carbons) cases ozone depletion so UV rays directly enter into earth's atmospere it leads to skin diseases, blindnesetc.  
( )  
1. A                      2. B                      3. C                      4.D
34. Assertion (A) : Bio-diesel is made from the plant oilsor animal fat through a series of chemial reactions.  
Reason (R) : Bio-diesel is non-toxic and renewable ( )
35. Assertion (A) : Carbon monoxide is a poisonous gas.  
Reason (R) : Carbon monoxide on combining with hemoglobin forms carboxy hemoglobin which preventing the blood from carrying oxygen.  
1. A                      2. B                      3. C                      4.D                      ( )
36. The Component which extracted first from Petroleum ( )  
a. Lubricants              b. Aspatt              c. Kerosene              d. Petrol
37. Which products used to prepare varies cheap plastics ( )  
a. Coal                      b. Petroleum              c. Natural gas  
A. only a                      B. only b                      C. only a & b                      D. a,b&c
38. The paints which are prepared from petroleum and heavy metals causes type of health effects ( )  
a. Heart attack              b. Lung damage c. Nausea                      d. Unconsciousness  
A. only a&b                      B. only b&c                      C. only a,b&c                      D. a,b,c,d
39. Where is coal deposits found in Andhra Pradesh ( )  
a. Krishna Godavari delta                      b. Singareni  
c. Kadapa                      d. None of these
40. In exhaustible energy resource used for electricity production ( )  
a. Solar energy                      b. water energy              c. wind energy  
d. Tidal energy                      e. Bio-mass energy  
a. a,b,c only                      b. a,b,c,d &e                      c. only a,b,c, &d                      d. a & b only
41. The colourless gas evolved on heating coal powder is ... ( )  
a. Carbon dioxide              b. Hydrogen              c. Oxygen                      d. Coal gas
42. In our country where natural gas has been not found ( )  
a. Tripura                      b. Bengalore              c. Jaisalmir                      d. Mumbai-Hi





## **5. SYNTHETIC FIBRES AND PLASTICS**

### **Fibres:-**

A group of fibres combined to form yarn- yarn are interlaced to form fabric - clothes.

Fibre :- Fibre is a long, thin strand or thread from which the fabrics are made.

### **Natural Fibre :-**

The fibres which are obtained from natural sources like plants and animals are called natural fibres.

Plant fibres : Cotton, Jute etc

Animal fibres : Wool, silk etc.

### **Synthetic fibres :-**

Fibres that are prepared artificially in factories by using chemicals like petrochemicals are called synthetic (or) Artificial (or) Man made fibres.

Ex : Rayon, Nylon, Acrylic, Polyesters etc.

Petrochemicals are the substances which obtained from petroleum by fractional distillation.

- Synthetic fibres are made of polymers.

### **Polymer :-**

It is a substance which has a molecular structure built completely from large number of similar units joined together like the beads in Necklace.

- Cellulose is a natural polymer of Glucose molecules.
- Rayon is the first synthetic fibre made from cellulose (wood pulp) it is also called artificial silk.
- Nylon is fully synthetic fibre prepared from coal, water and air.  
It is very strong, lustrous, elastic and light weight catches fire easily.
- Acrylic made from a polymer called as polyacrylo nitrile. It is also called as Artificial wool.

Blending :- Any synthetic fibre can be combined with two or more fibres. This is called blending.

- Polyester is made upto repeating units of chemical substances called esters.
- Terylene is a popular polyester.  
Terylene blended with cotton to prepare terricott, blended with wool to get terriwool.
- PET is popular polyester.

### **Resin (Plastic) Identification codes : (PIC) : Code**

- |         |   |                            |
|---------|---|----------------------------|
| 1. PET  | - | Polyeth Eyne Terephthalate |
| 2. HDPE | - | High Density Polyetheylene |

3. PVC - Polyvinyl Chloride (or) vinyl

4. LDPE - Low Density Polyethylene


5. PP - Polypropylene

6. PS - Polystyrene

- PTFE (Polytetrafluoro ethylene) : It is popularly known as Teflon, widely used for nastic cookware.

- Plastics are typical polymers with high molecular mass and low melting points.

- Depending up on the arrangement of monomers plastics are classified into two types

1. Thermoplastics : 

2. Thermosetting Plastics : 

### **Thermoplastics :**

The plastics which are soft and get easily deformed and melt on heating.

Ex : Polyethene, Polystyrene, PVC, Teflon etc.

### **Thermosetting plastics :**

The plastics which can with stand to heat and electricity and moulded once can't be saftened by heating.

Ex : Backlite, malamine.

- Backlite is used in making electrical switches and handles.

- Malamine is used in making floortiles, kitchen ware and fire resistant fabrics.

### **Biodegradable substances :-**

Substances which gets decomposed through natural process such as bacterial action are called biodegradable substances.

Ex : paper, Peels of vegetables etc.

### **Non Biodegradable substances -**

The substances which are not easily decomposed by natural process are called non biodegradable substances.

Ex : Plastics, Tin, Aluminium and other metal cans.

4R principle is useful to reduce the effect of plastics on environment 4R's are Reduce, Reuse, Recycle and Recover.

### **MULTIPLE CHOICE QUESTIONS**














1. Rayon is made up of ( )

a. Coal                      b. Oxygen                      c. Flax                      d. Cellulose

2. Which of the following is complete synthetic fibre ( )

a. Rayon                      b. Nylon                      c. Acrylic                      d. Polyethene










3. Fabrics made up of which synthetic fibre do not get wrinkled easily ( )  
 a. Rayon                      b. Nylon                      c. Polyester                      d. Acrylic
4. Non-stic cooking vessels coated with ( )  
 a. Bakelite                      b. Teflon                      c. Malamine                      d. Steel
5. The first syntehtic fibre from cellulose is ( )  
 a. Nylon                      b. Rayon                      c. Acrylic                      d. Polyester
6. The synthetic fibre that resemble wool is ( )  
 a. Nylon                      b. Rayon                      c. Acrylic                      d. Teflon
7. most of synthetic plastic materials are prepared from ( )  
 a. coal                      b. Plants                      c. petroleum                      d. animals
8. Which of the following is natural fibre ( )  
 a. Rayon                      b. Silk                      c. Nylon                      d. Polyester
9. Polyethylene is which type of plastic ( )  
 a. Thermoplastic                      b. Thermosetting plastic  
 c. Nonstick plastic                      d. None of these
10. Which of the following thermosetting polymer is produced by the condensation of phenol and formaldehyde ( )  
 a. Melamine                      b. Rayon                      c. Backlite                      d. Teflon
11. Which of the following is the lightest plastic material ( )  
 a. Polyester                      b. Nylon                      c. Rayon                      d. Polypropylene (PP)
12. The plastic which is used for waterpipes or tubes or tank linings or for chemcial engineering purpose ( )  
 a. PET                      b. PVC                      c. HDPE                      d. LDPE
13. The material which was not wetted by water and oil and with high melting point is ( )  
 a. Polyethene                      b. polytetrafluroethylene (Teflon)  
 c. Polypropylene                      d. Polyvinyl chloride
14. Whic of the following are biodegradable substances ( )  
 a. Polyethene cover                      b. Dead leaves of plants  
 c. Plastics                      d. Carry bags
15. Which of the following are nonbiodegradable ( )  
 a. Paper                      b. Wood                      c. Woollen clothes                      d. Metal cans
16. Which of the following statements is incorrect about plastics ? ( )  
 a. Plastics are durable                      b. Plastics are chemcially inert  
 c. Plastics are environmental friendly  
 d. Plastic are non-conductors of heat and electricity

17. Climbing ropes are made from which fibres ( )  
 a. Rayon                      b. Nylon                      c. Acrylic                      d. Plastic
18. Among the following which fibre is strong ( )  
 a. Rayon                      b. Nylon                      c. Acrylic                      d. Silk
19. The plastic which cannot be reclaimed from the wastes (or) recycled ( )  
 a. Polyethene                      b. Backlite                      c. PET                      d. HDPE
20. Computer and TV cabinets are made from ( )  
 a. Backlite                      b. Malamine                      c. PP                      d. LDPE
21. The creator of first manmade plastic i.e. 'Parkesine' is ( )  
 a. Leo hendrik Bakeland                      b. Herman Staudinger  
 c. Alexander Parkes                      d. Alexander Fleming
22. Father of plastic industry is ( )  
 a. Leo hendrik Bakeland                      b. Herman Staudinger  
 c. Alexander Parkes                      d. Alexander Fleming
23. Hot pin test is used to test which plastic ( )  
 a. PET                      b. Backlite                      c. Malamine                      d. PP
24. Which fibre is called as fakefur ( )  
 a. Nylon                      b. Rayon                      c. Acrylic                      d. Wool
25. Which of the following symbol represents bleaching ( )  
 a.                       b.                       c.                       d. 
26. Which of the following symbol represents ironing ( )  
 a.                       b.                       c.                       d. 
27. The symbol  represents which type of resin ( )  
 a. PET                      b. HDPE                      c. LDPE                      d. PVC
28. Universal recycling symbol is ( )  
 a.                       b.                       c.                       d. 
29. Acrylic is made up of ( )  
 a. Coal and oil                      b. Air and water  
 c. Limestone                      d. All the above
30. PET is a ( )  
 a. Polyester                      b. Polyamide                      c. Nylon                      d. Thermosetting polymer



- 21) C      22) A      23) B      24) C      25) B
- 26) D      27) C      28) C      29) D      30) A
- 31) C      32) C      33) A      34) B, C      35) A
- 36) A      37) D      38) B      39) C      40) B
- 41) D

**Laundry Label codes :**

- |   |                         |
|---|-------------------------|
|    | Temperature to wash     |
|    | Bleaching               |
|  | Do not bleach           |
|  | 3 Dots is very hot iron |
|  | 1 dot is hot iron       |
|  | Pot is pretty cool      |
|  | Does not iron           |
|  | Dry                     |
|  | Do not drycleaning      |

## **6. ELECTRIC CONDUCTIVITY OF LIQUIDS**

1. Substances are of two types 1. Electric conductors, 2. Electric insulators (Poor or bad conductors)
2. The substances which conduct electricity called electric conductors.
3. The substances which does not conduct electricity called electric insulators.
4. Most liquids that conduct electricity are solutions of acids, bases and salts.
5. Poor or bad conductors are Distilled water, coconut oil, kerosene, vegetable oil, sugar solution etc.
6. In circuits LEDs glow even with a very little current passing through them.
7. While connecting to the LED to the circuit, the longer lead is connected to positive terminal and the short lead is connected to the negative terminal of the battery.
8. In 1780, Galvani thought he had discovered living (or) biological electricity.
9. In 1800, Volta made his first cell using zinc and copper plates dipped in sulphuric acid.
10. Copper and zinc rods are known as electrodes. Dilute sulphuric acid is known as electrolyte.
11. Zinc-Carbon cell, Alkaline cell, Lithium cell, mercury cell, silver oxide cell are examples of some dry cells.
12. Galvani cell, Leclanche cell, volta cell are some wet cells.
13. In cells chemical energy is converted into electric energy.
14. Electro plating is a process in which one metal is coated with another metal by using electrolysis process.
15. Machinery parts are often chromium or Nickel plated processed food items are preserved in iron cans coated with tin. for bridges and in auto mobiles iron is coated with zinc.
16. Electrolysis is a method is used in the extraction of metals, purification of metals, in the preparation of chemical substances and in electroplating method.
  1. The substance used for electrolysis is called ( )  
a. Electrode            b. Diode            c. Electrolyte            d. Electric insulator
  2. Which among these is good conductor of electricity ? ( )  
a. Salt                    b. salt solution    c. Glucose solution    d. Alcohol solution
  3. .. convert chemical energy into electrical energy ( )  
a. Motor                    b. Volta cell        c. Generator            d. Dynamo
  4. .... is useful in identifying positive terminal of battery ( )  
a. Carrot                    b. Beetroot          c. Potato                d. All of these







21. Statement (i): Volta made first cell using zinc and copper dipped in sulphuric acid. ( )  
 Statement (ii): Volta cell convert electrical energy into chemical energy.  
 1. A                      2. B                      3. C                      4.D
22. Statement (i): Plastic can electroplated on iron articles. ( )  
 Statement (ii): Zinc coated iron is used for bridges and in automobiles.  
 1. A                      2. B                      3. C                      4.D
23. Statement (i): All metals are not conductors of electricity ( )  
 Statement (ii): All non-metals are electric conductors.  
 1. A                      2. B                      3. C                      4.D
24. Statement (i): Electric conductivity increases on adding acid to distilled water.  
 Statement (ii): Hydrogen chloride is poor conductor of electricity. ( )  
 1. A                      2. B                      3. C                      4.D
25. Statement (i): Galvani did many experiments with dead mouse and thought discovered biological electricity ( )  
 Statement (ii): LEDs glow even with a very little current passed in circuit.  
 1. A                      2. B                      3. C                      4.D

**Choose the correct one.**

- A) Both 'A' and 'R' are true and 'R' is correct explanation of 'A'  
 B) Both 'A' and 'R' are true and 'R' is not correct explanation of 'A'  
 C) 'A' is true and 'R' is false.  
 D) 'A' is false and 'R' is true
26. Assertion (A): A greenish blue spot is seen on the potato around the wire connected to the positive terminal of the battery.  
 Reason (R) : The copper present in potato get ionised and oxidised on passing current forms greenish spot. ( )  
 1. A                      2. B                      3. C                      4.D
27. Assertion (A) : Plastic can be coated on a metal by using electroplating. ( )  
 Reason (R) : Plastic being a carbon polymer does not dissociate into ions.  
 1. A                      2. B                      3. C                      4.D
28. Assertion (A): Electrolyte is a solution of substance through which current can pass.  
 Reason (R) : Acid base and salt solutions are good electrolytes. ( )  
 1. A                      2. B                      3. C                      4.D
29. Assertion (A): Water containing dissolved slats is a good conductor of electricity.  
 Reason (R) : Distilled water is a good conductor of electricity ( )  
 1. A                      2. B                      3. C                      4.D

30. Assertion (A): The intensity of glow of LED is less in the baking soda solution compared with hydrochloric acid solution ( )  
Reason (R) : Baking soda is weak base, so the dissociation is less when compared with hydrochloric acid.
1. A                      2. B                      3. C                      4.D
31. Which of the following electrode is differ from other ? ( )  
a. Copper rod                                      b. Grophite rod  
c. Zinc rod                                         d. Platinum rod
32. Which of the following liquids are non-conductor of electricity ( )  
a. vinegari                      b. Lemon juice                      c. Sugar solution  
d. Kerosene                      d. salt solution  
a. only a,b&e                      b. Only a,b,c,&e                      c. only c&d                      d. only d
33. Electric conductivity is more in solution ( )  
a. Vinegar                      b. Baking soda                      c. Sulphuric acid                      d. Distilled water
34. Which is not possible by electroplating ( )  
a. coating of zinc on iron                      b. Coating of plastic on iron  
c. coating of copper on iron                      d. Coating of gold on aluminium
35. Volta prepared primary cell in the year of.. ( )  
a. 1900                      b. 1780                      c. 1800                      d. 1880
36. Electroplated material is connected to the .... terminal of the battery in electroplating process ( )  
a. positive terminal                                      b. Negative terminal  
c. Both of these                                      d. No need to connect
37. Which of the following are electrical insulators. ( )  
a. Glass                      b. Plastic                      c. Rubber                      d. Graphite e. Wood  
a. only a,b,c,d                      b. a,b,c,d,&e                      c. only a&b                      d. a,b,c & e only
38. Electroplating of materials protect from ( )  
a. Electricity                                      b. Chemical action  
c. Rusting                                      d. All of these
39. To get best quality coating by electroplating the surface of material should be ( )  
a. Greasy                      b. oily                      c. smooth                      d. ruff  
e. insulator                                      ( )  
A only a &b                      b. Only d                      c. only C&d                      d. only c
40. Whic one is used to test electric current in a conducting wire ( )  
a. LED tester                      b. Distilled water                      c. Battery                      D. all of these.

## **KEY FOR SYNTHETIC FIBRES AND PLASTICS**

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

## **7. CHANGES AROUND US**

1. Change in shape, size, colour or state is called a physical change.
2. In physical change no new substance is formed.
3. Generally physical changes are temporary changes.
4. the type of change which leads to form a new substance is called a chemical change.
5. In chemical change composition of the original substance changes.
6. Generally chemical changes are permanent changes.
7. Events which occur at regular interval of time are called periodical events.
8. The process of depositing zinc or chromium on Iron is called Galvanisation.
9. Iron articles in the presence of air and water gets rusted i.e Iron oxide is formed
10. The process of separating a soluble solid from the solution on heating is called crystallization.
11. To prevent the iron articles from rusting they should be painted.
12. Cut pieces of fruits and vegetables reacts with oxygen present in air and changes their colour.
13. The chemical name of vinegar is acetic acid.
14. When vinegar reacts with Baking soda, carbon dioxide gas will be released.
15. Copper articles when reacts with oxygen and  $\text{CO}_2$  present in air, green coating will be formed.

### **OBJECTIVE TYPE BITS**

1. Melting of ice is a .... change ( )  
a. Chemical                      b. Physical                      c. Both                      d. None
2. In a physical change ( )  
a. Change in composition                      b. energy is released  
c. Energy is absorbed                      d. No change in composition
3. Gas absorbed by white wash on the wall is ( )  
a. Oxygen                      b. Carbon dioxide  
c. Carbon monoxide                      d. None
4. A physical change is a change in which there will be a change in ... ( )  
a. Shape of substance                      b. Colour of substance  
c. Size of substance                      d. All of these
5. Cut pieces of fruits and vegetables turn to Brownish because of ... gas  
a.  $\text{CO}_2$                       b.  $\text{H}_2$                       c.  $\text{O}_2$                       d. None ( )
6. Colour of copper sulphate solution is .... ( )  
a. Yellow                      b. Brown                      c. Red                      d. Blue

7. Generally which of the following is used for Galvanisation ( )  
 a. Zinc                      b. Aluminium      c. Copper                      d. All
8. Which of the following is not a periodic change ( )  
 a. Change of day and night                      b. Apperance of full moon  
 c. watering plants                      d. Change in length of shadows
9. Rust is ..... ( )  
 a. Iron                      b. Oxygen                      c. Water                      d. Iron oxide
10. Browning of cut vegetables and fruits will be prevented by ... ( )  
 a. Vitamin C                      b. Vitamin A                      c. Vitamin K                      d. Vitamin D
11. Colour of Iron sulphate is.. ( )  
 a. Blue                      b. Green                      c. Brown                      d. Yellow
12. The chemical name of lime water is . ( )  
 a. Calcium chloride                      b. Calcium carbonate  
 c. Calcium sulphate d. Calcium Hydroxide
13. When Ice is heated, there is a change in its .. ( )  
 a. Shape                      b. State                      c. Colour                      d. All
14. The powdery substance formed when megnesium is burned in air ( )  
 a. Megnesium Hydroxide                      b. Megnesium Oxide  
 c. Megnesium Carbonate                      d. None
15. Correct matching is ... ( )  
 i. Growing Hair                      a. Acetic acid  
 ii. Breaking mirror                      b. Slow change  
 iii. Galvanisation                      c. Physical change  
 iv. Venegar                      d. the process of deposing zinc on iron  
 A. c,b,a,d                      B. d,a,b,c,                      C. b,c,d,a                      D. a,c,d,b
16. Gastric Juice contians .. acid ( )  
 a. HCl                      b. H<sub>2</sub>SO<sub>4</sub>                      c. HNO<sub>3</sub>                      D acetic acid
17. .... is used for artificial ripening of fruits ( )  
 a. Calcuim Carbonate                      b. Calcium Carbide  
 c. Copper carbonate                      d. None
18. Which of the following is an artificial indicator ( )  
 a. Litmus                      b. Turmeric                      c. Phenophelene                      d. All
19. Boiling of egg is a.... change ( )  
 a. Physical                      b. Chemical                      c. Temparary                      d. Periodical
20. In a chemical change .. will be changed ( )  
 a. Shape                      b. Colour                      c. Size                      d. Composition

### **KEY FOR CHANGES AROUND US**

- |     |     |     |     |     |
|-----|-----|-----|-----|-----|
| 1)  | 2)  | 3)  | 4)  | 5)  |
| 6)  | 7)  | 8)  | 9)  | 10) |
| 11) | 12) | 13) | 14) | 15) |
| 16) | 17) | 18) | 19) | 20) |