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NEW HORIZON SCHOOL

SESSION- 2018—19

PERIODIC TEST--1

SUPPORT MATERIALS

CLASS   :   VIII

SUBJECT   :   CHEMISTRY

NAME   :

ROLL NO.   :

SECTION   :

L—3 SYNTHETIC FIBRES & PLASTICS

- There are two kinds of fibres a) Natural fibres b) Synthetic fibres
- Synthetic fibres are prepared by using raw materials of petroleum origin called petrochemicals. Examples --- Rayon , Nylon , Polyester, Acrylic.
- A synthetic fibre is a chain of smaller units which are joined together. Each small unit is a chemical substance called monomer. Many such smaller units join together to form a large unit called a polymer.
- Mono means one & Poly means many & mer means repeating units
- Polymerisation is a process of joining together a large number of smaller molecules (monomers) to form a very large molecule (Polymer).
- Some polymers exhibit <u>linear</u> structure & some other exhibit <u>cross linking.</u>
- The polymers in which monomers are linked in a linear arrangement are known as Linear polymers
- The polymers in which monomers are cross-linked to each other are known as cross-linked polymers.
- TYPES OF SYNTHETIC FIBRES
- RAYON---It is a synthetic fibre prepared from wood pulp. The wood pulp is dissolved in an alkaline solution and the passed through tiny pores to convert them into fibres. It resembles silk in appearance.
- Uses—in the textile industry, for making carpet

- **NYLON--- It is first fully synthetic fibre. It is the strongest fibre.**
- **Nylon is a polyamide fibre prepared by the polymerization of large number of amide molecules.**
- **Uses---for making socks ,gloves , dress materials, in the parachutes , ropes for the mountaineering.**
- **POLYESTER--- It is a polymer made up of the repeating units of a chemical called ESTER.**
- **Uses--- dress materials, curtains etc**
- **ACRYLIC—It resembles wool. It is much cheaper than wool.**
- **Uses—for making sweaters ,shawls , blankets**
- **PET--- POLY ETHYLENE TEREPTHALATE**
- **It is a familiar form of polyester. Uses—in making bottles, utensils etc**
- **ADVANTAGES OF SYNTHETIC FIBRES---**
- **Strong 2. Low water absorption 3. Wrinkle resistant 4. Light weight 5. Less expensive 6. Durable**
- **DISADVANTAGES OF SYNTHETIC FIBRE---**
- **Melt & burn easily 2. Non- biodegradable . Does not absorb sweat.**
- **PLASTICS**
- **Plastics are polymers made up of a very large number of small monomers joined end to end to form long chains.**
- **A substance can be easily moulded into sheets or drawn into fibres on heating is called plasticity.**
- **Kinds of plastics**
- **A plastic which can be melted repeatedly by heating, hardened on cooling and can be moulded again and again into different shapes.**

- **Ex--- Polythene , PVC**
- **A plastic which once moulded into a particular shape doesnot become soft on heating and cannot be moulded a second time**
- **Ex--- Bakelite , Melamine**
- **Characteristics of plastics—**
- **Plastics are non-reactive**
- **Plastics are light**
- **Plastics are durable and strong**
- **Plastics are poor conductors of heat & electricity**
- **Plastics are non-biodegradable**
- **The substances which can be easily decomposed into simple substances by the action of bacteria are called bio-degradable substances. Ex--- kitchen wastes , paper , cloth etc**
- **The substances which cannot be easily decomposed into simple substances by the action of bacteria are called non-bio-degradable substances. Ex--- Plastics , polythene etc**

- **Plastics & the environment---**
- **Disposable of plastics leads to air pollution & water pollution**
- **Polybags are responsible for clogging of drains & sewer lines**
- **Plastic materials choke respiratory system or digestive tract and can be the cause of their death.**
- **Green bin—Peels of vegetables & fruits cotton**
- **Blue bin—plastic bottle, polybags, wrapper**
- **4R principle----- Reduce , Reuse , Recycle , Recover**

L--- 4 MATERIALS : METALS & NON—METALS

Anything that occupies space and has mass is called matter. We can divide matter into pure substances (elements & mixtures) and mixtures.

Element is a substance which cannot be split up into two or more simpler substances by chemical methods.

Elements can be classified into metals, non-metals & metalloids depending upon their physical & chemical properties.

Metals: Iron , Copper , Tin , Gold etc

Non-metals : Sulphur , Nitrogen , Carbon , Phosphorus

Metalloids: Arsenic , Germanium , Silicon etc

Malleability ---- The property due to which metals can be beaten into thin sheets

Ductility--- The property due to which metals can be drawn into thin wires

Brittleness---The property due to which non-metals break up into pieces on hammering

Metal which is in liquid state--- Mercury

Non-metal which is in liquid state --- Bromine

Metals which are in soft nature--- Sodium & Potassium

Non-metal which is a good conductor of electricity--- Graphite

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COMPARISON OF PHYSICAL PROPERTIES OF METALS & NON-METALS

Parameters	Metals	Non-metals
Physical state	Metals are solids	Non-metals are solid, liquid or gas
Malleability	Metals are malleable	Non-metals are not malleable
Ductility	Metals are ductile	Non-metals are not ductile
Lustre	Metals have shiny appearance	Non-metals have dull luster
Conductivity	Metals are good conductors of heat & electricity	Non-metals are bad conductors of heat & electricity
Hardness	Metals are hard	Non-metals are soft
Sonority	Metals are sonorous	Non-metals arenot sonorous
Tensile strength	Metals have high tensile strength	Non-metals have low tensile strength
Melting & boiling point	Metals have high melting & boiling point	Non-metals have low melting & boiling point