

* ① (A) Kirchhoff's Law

- used to calculate resistance in electricity
- The flow of electricity in a conductor

(B) AYUSH

- Ayurveda, Yoga, Unani, Siddha - Homeopathy
- Indian system of medicine
- There is a separate ministry of AYUSH

(C) GSLV

- Geosynchronous satellite launch vehicle
- It is latest satellite launch vehicle used to carry heavy payloads
- It launches communication satellites into earth's orbit.

(D) TRIMS

- Trade Related Investment Measures
- one of agreement under world Trade organizations
- Enables Foreign Direct Investment.

(E) cloning -

creation of exact genetical and somatic replica of an individual using asexual reproduction and biotechnology
- eg - Dolly the sheep

(F) Vikram Sarabhai

- Father of Indian space research
- Founder of ISRO
- Vikram Sarabhai space centre is placed in Thiruvananthapuram

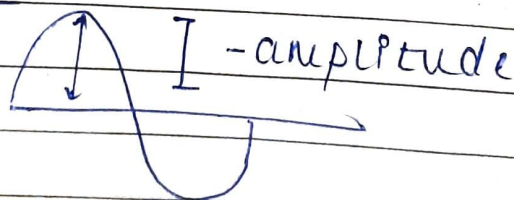
(G) TIFR

- Tata Institute of Fundamental Research
- Established by Tata group on recommendation of ~~Homi~~ Homi Jehangir Bhabha
- Located in Mumbai

(H) Periodicity

- when a phenomenon repeats itself after a regular interval of time, then the phenomenon is called periodicity
- e.g - sun rotation and revolution

(I) Amplitude



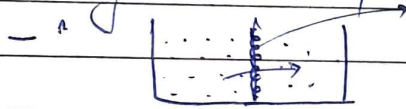
- Highest distance travelled by wave from its mean position is called amplitude.

- Determinant of pitch of sound.

(J) Marasmus :-

(K) OSMOSIS :-

- The movement of solvent from its higher concentration to its lower concentration through a semi-permeable membrane.



- It has vast application -

- Plant takes water from soil
- Reverse osmosis - purification of water

(L) COBOL

- Common Business oriented language
- It is a high-level computer language
- Mainly used for business purpose

(M) Bookmark

- It is a tool in web browser
- It makes it easy for user to open the website again easily
- It is placed as a mark in address panel.

(N)

RRCAT

(O)

NRSC

- NATIONAL Remote Sensing Centre
- Location - Hyderabad, India
- It collects data from remote sensing satellites and converts into usable form.

② (L)
 → Let the cost of table be x ,
 → It was sold at 13% profit, i.e.

$$x + \frac{13x}{100} = \frac{113x}{100} = 1.13x$$

→ If it was sold for ₹25 more then profit would have been 18%.

So 18% profit on x would be,

$$\cancel{1.18x} x + \frac{18x}{100} = \frac{118x}{100} = 1.18x$$

+18

-1.13

5

According to the question,

$$1.18x - 1.13x = ₹25$$

$$0.05x = ₹25$$

$$\frac{5}{100} x = ₹25$$

$$100$$

$$x = \frac{₹25 \times 100}{5}$$

$$₹1$$

$$x = ₹500$$

∴ The cost of table is ₹500.
 Price.

(K) Satyendra Nath Bose - Physicist

- Father of God Particle

- worked on boson i.e. God particle

- Bose-Einstein statistics

Homi Jahangir Bhabha

- Father of Indian Nuclear Science

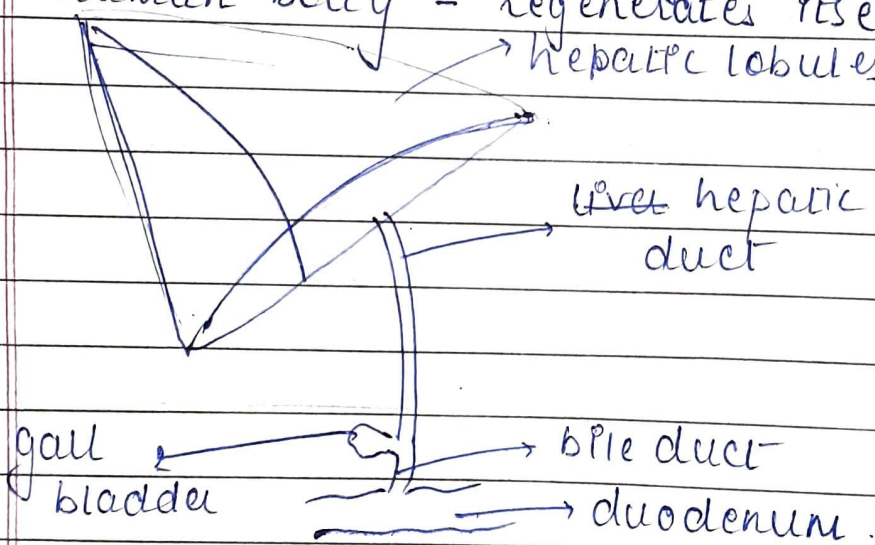
- 1st chairman of Atomic Energy Commission

(J)

Metal	Non-metal
- Ductile - convertible into wires	- Non-ductile
- Malleable - into sheets	- Non-malleable
- Lustrous	- Non-lustrous
- Electricity conductor	- Insulators
- Produce ringing noise - solid form	- Mainly in gaseous form
- Belong to d-group in periodic table	- Belong to -p block in periodic table
- e.g. - Gold, Iron	- e.g. - Carbon, Silicon

(I)

→ Liver is the ~~second~~ largest organ in human body - regenerates itself.



- It stores food for emergency situation
- Digested food first pass through liver
- Releases hepatic juice which helps in emulsification of fat and create basic medium for digestion in the duodenum
- Liver disintegrates cells of RBC and releases it with hepatic juice.

(H) - Sustainable development is the judicious use of resources to meet the need of present generation and pass on to next generation so they can make use of their needs.

- It is required for directed and balanced growth otherwise future generation will have nothing left.

- At Paris, in 2015, 17 Sustainable Development Goals were adopted to be achieved by 2030.

- It includes goals such as - poverty reduction, food security, health & well-being, etc.

- It helps us to become a responsible citizen than careless and selfish.

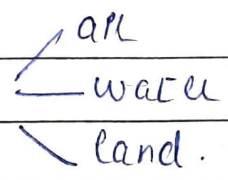
(I) The environment degradation is the harm done to environment in a way that it leads to counter harm. It is done by -

- Deforestation

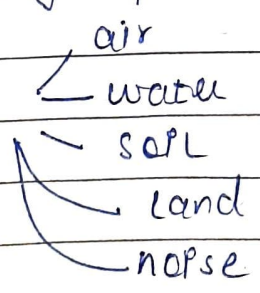
- For urbanization and development forests are cut mercilessly.

- Industrialization

- leading to pollution



- Pollution



- Urbanization

- It leads to shift from rural env. loving to urban - technology loving.

- Technological development (

- transport ways

- causes pollution, deforestation.

(F) → Quantum computers are based on quantum technology based on atoms and elementary particles.

→ they compute in quantum bits (qu-bits)

→ fastest computer in world.

→ working on 3 properties (SEI)

→ superposition

- Entanglement

- Interference

→ It is used

- secure communication
- Disaster management
- Industries.

(E) → Robot is a programmed device designed to move parts, (motions) and performance of various tasks

→ Ben skora is called father of robotics

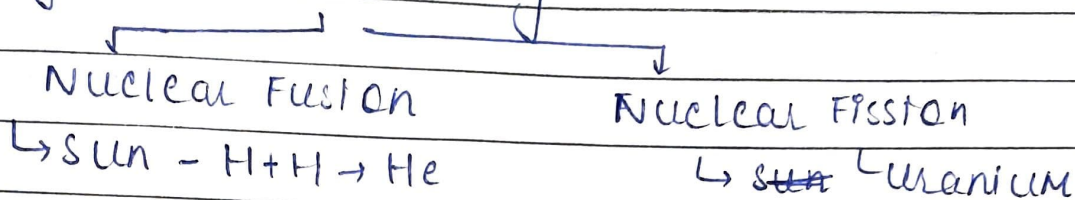
→ Human robots act like humans

e.g Honda's ASIMO

→ They will help in future in areas such as elder and disable care

→ they will perform task for them and hence make life easy.

(E) → Nuclear energy uses nuclear fuel to generate heat, which is used to heat water causing steam and this steam rotates turbine and generate electricity.



→ Advantage

- It generates huge amount of energy at comparatively low cost.

→ Hazards

- It can be used to produce nuclear weapons ; e.g - Nuclear bomb at Hiroshima and Nagasaki

- It can lead to nuclear disasters

- e.g - Chernobyl 26 April 1986.

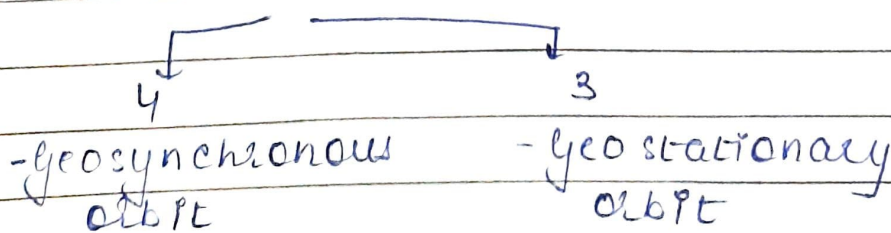
(A) → IRNSS :- Indian Regional Navigation Satellite System

- Regional navigation satellite system developed by ISRO

- Types

SPS - General public (Standard Positioning System) RS - Defence. (Restricted system)

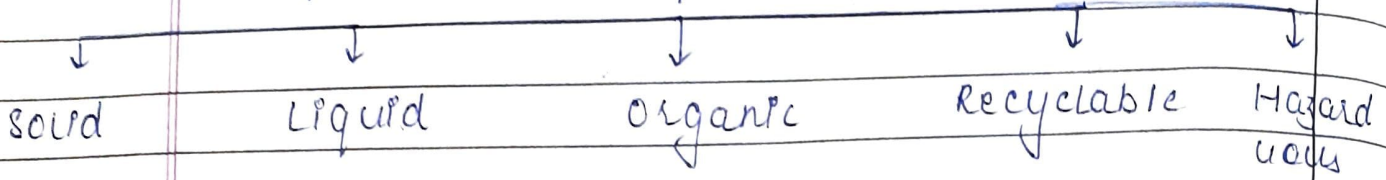
- It has seven satellites - NAVIC



- The seven satellites = IRNSS - 1A, 1B, 1C, 1D, 1E, 1F, 1G.

③ (A) Any material which is discarded is called waste

Types of waste



* Solid waste

- Plastic
- Paper
- ~~Iron~~ Metal
- Glass

* Liquid waste

waste in liquid form such as domestic effluents, sewage, industrial waste water.

* Organic waste

The waste produced by biodegradable materials

- eg. fruit and vegetable peel
- plant ~~and~~ & animal remains

* Recyclable waste

This can be reused using simple processing

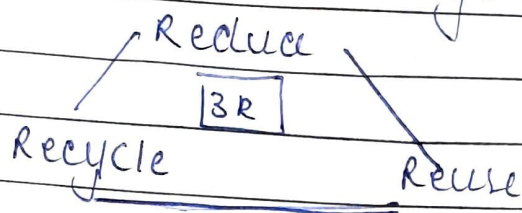
- eg Iron metal, newspapers

* Hazardous waste

used in waste from
- toxic in nature.

- Hospitals
- Chemical Industries

It can be managed in variety of manners
but most suitable is 3-R Technology
i.e. - Reduce - Reuse - Recycle



Reduce :-

To limit the usage upto the requirement and not overuse any resource.

e.g. - water taps should be used i.e. a bucket and mug to bath than taking shower.

Reuse :-

Most often a resource which is used in certain place can be reused other ways.

e.g. - kitchen waste water can be used for gardening
- kitchen organic wastes as fertilizers.

Recycle →

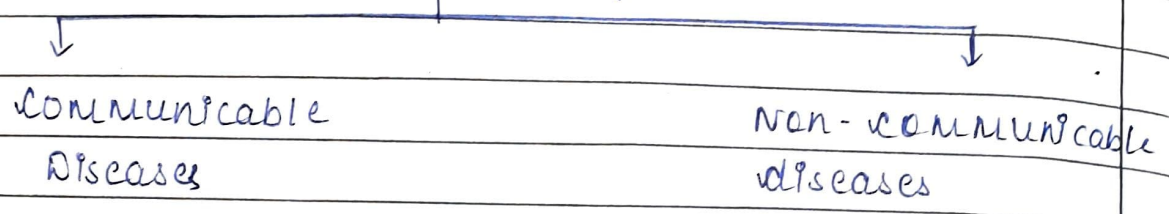
Don't discard the resource all-together, instead use them again by changing its form. e.g. - Newspapers

The newspapers are recycled to produce new newspapers and hence saved deforestation.

If waste is managed fruitfully, it will result in saving of resources and also less pollution.

(B) Disease refers to the condition, when the proper function of body is weakened and disturbed.

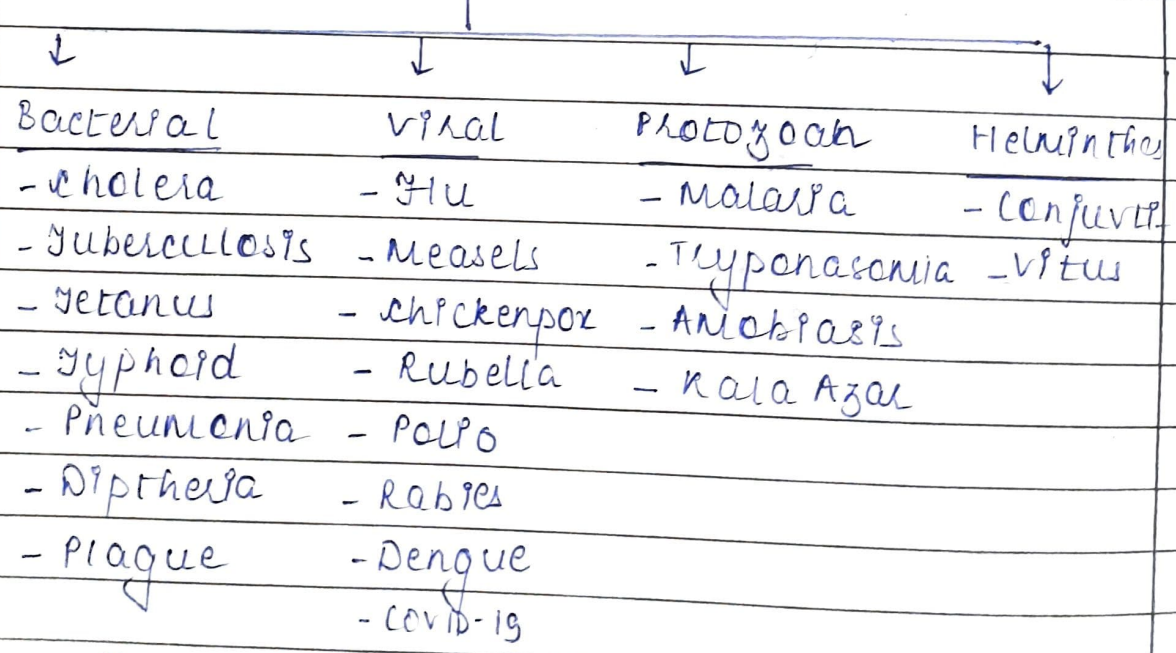
It can be of two types



* communicable disease

They are transmissible from one person to another through direct or indirect contact with infected person.

It can be further subdivided as



To prevent communicable disease

- Avoid direct contact with infected person
- Maintain clean and sanitary lifestyle
- Drink clean water

* Non communicable disease.

They do not transmit from one person to another and concerns one's internal body malfunction only.

There are various types of non-communicable diseases.

(1) Diabetes Mellitus

- Caused because pancreas is unable to produce enough insulin for glucose metabolism leading to accumulation of glucose in blood causing major problems.

(2) Cardiovascular diseases

- The blood vessels carrying blood to heart gets covered by cholesterol and due to insufficient blood supply leads to heart problems.

(3) Cancer

- Uncontrolled growth of cells leads to blocking functions of other organs.

(eg) They are basically lifestyle diseases and can be prevented by involving healthy changes in lifestyle.

- switch to nutritious balanced diet in place of junk food.

(c) When any material is cooled below its critical temperature it results in zero resistance and the procedure is called super conductivity i.e. It conducts electricity with no resistance.

There are following applications in the field of superconductivity.

(1) Medical field

- MRI - (Magnetic Resonance Imaging)
 ↳ image anatomy of human body.
- SQUID - superconducting Quantum Interference Devices - detectors.

(2) Transportation

- MLT → Magnetically Levitated Trains
- they float above track ∴ zero resistance.

(3) used in magnets < transducers
 sensors

(4) Development of superconductivity in India :-

① Biotechnology is the use of biological system i.e. plants, animals, micro-organisms and technique to produce substances which are beneficial to humans.

with the advent of restriction enzymes, molecular scissors, it became a successful tool for Genetic Engineering and Recombinant DNA Technology.

There are following applications of biotechnology.

(1) Genetic Engineering :-

- Formation of genetically modified organisms.

e.g - Bt. Brinjal, Bt. Cotton

- It helps in removing the disease causing micro-organisms without the use of fertilizers and pesticides.

e.g - Golden rice

- Nutrition enrichment with VIT-A.

(2) Food and Beverage :-

Food products manufactured using fermentation in huge quantity.

e.g - wine, yoghurt, Bread.

(3) Medical field

- formation of Insulin & hormones

- diagnostic tests e.g pregnancy kit

- formation of vaccines e.g - COVID-19

- Antibody

- Test-tube baby

(4) Environmental Pollution Control.

- Using microbes in oil spills - bioremediation
- Water treatment (sewage)
- Air pollution treatment
- Tissue culture - clones - afforestation
- Degradable plastics

(5) Cloning :-

producing exact copy of individuals by asexual reproduction.

- First cloned mammal - Dolly - the sheep by Ian Wilmut in 1996

(6) DNA Fingerprinting

- Every individual has different DNA makeup and it is useful to solve

- Parent identification
- Criminal case solving

Biotechnology in some forms have been used since ancient period - curd formation, alcoholic beverages, etc. and with time gradually, its scope increased. With advent in biotech, it has helped the common man.