

"General Science and Ability"

Intro:

Pakistan suffered a huge loss due to flooding of 2022. It is estimated that \$40 billion is lost in terms of infrastructure, livestock and other essential items. To reconstruct and build Pakistan the way it was, climate financing is required. Some way are:

1. obligation of the rich Nations:

It is pertinent that the rich nations should support countries like Pakistan in this dire situation by providing financial assistance.

2. Global Loss and Damage fund:

It was agreed to Pakistan in COP-27. During that conference, \$100 billion were promised for climate prone countries annually but it turned out to be a whitewash.

3. COP-28 and the Plight of Pakistan.

Pakistan according to World Bank, is responsible for 0.9% of the emission. However, Pakistan has paid a huge amount for it. Being a developing country and not resilient to climate change, Pakistan

must raise its voice for increase in climate financing in the upcoming COP-28. The reason is simple, Pakistan is one of the countries that is most vulnerable to the negative effects of climate change. Some important points to be discussed in COP-28:

- a. Pakistan needs climate justice.
- b. Biggest polluters should pay for the damage and destruction.
- c. The primary polluters should be held accountable for their destructive emissions of carbon for the sake of capital.
- d. The top institutions: IMF, WB and some rich countries should create a resilient Pakistan by investing in smart climate solutions, green innovation etc.

conclusively, Pakistan has suffered a lot from climate related catastrophe. Pakistan is not the polluter but still pays for it. So, the rich countries should pay for their actions and make climate resilient countries to avoid loss of everything in the future.

Water-soluble and fat-soluble vitamins are organic compounds. They are essential for various functions in human body.

Water soluble and fat soluble vitamins.

Water soluble:

These vitamins are essential for human body and dissolve in water, which means that a human has to take it more often. It is also known as B-complex.

B-complex are:

1. B1 Thiamine
2. B2 Riboflavin
3. B3 Nicotin
4. B5 Pantothenic Acid
5. B6 Pyridoxin
6. B7 Biotin
7. B9 Folic Acid
8. B12 Cobalamin.

Water

Fat Soluble vitamins:

Fat soluble vitamins are those vitamins that can stay for longer period of time in body. However, excessive intake can lead to toxicity. These are vitamins A, D, E, and K.

They are good for vision, bone health and blood clotting.

Diets containing different vitamins:

There are many diets rich in vitamins. Some are:

1. Fruits and Vegetables:

It is rich in vitamin C and contains B-complex.

2. Dairy Foods:

optimal amount vitamin D

3. Fish and Sea Food:

Rich in vitamin D and fatty acids.

4. Nuts and Seeds:

Rich in vitamin E.

5. Liver and Eggs:

Good source of vitamin A.

Thus, vitamins are organic compounds classified in 2 main types. Vitamins are essential for human physiology.

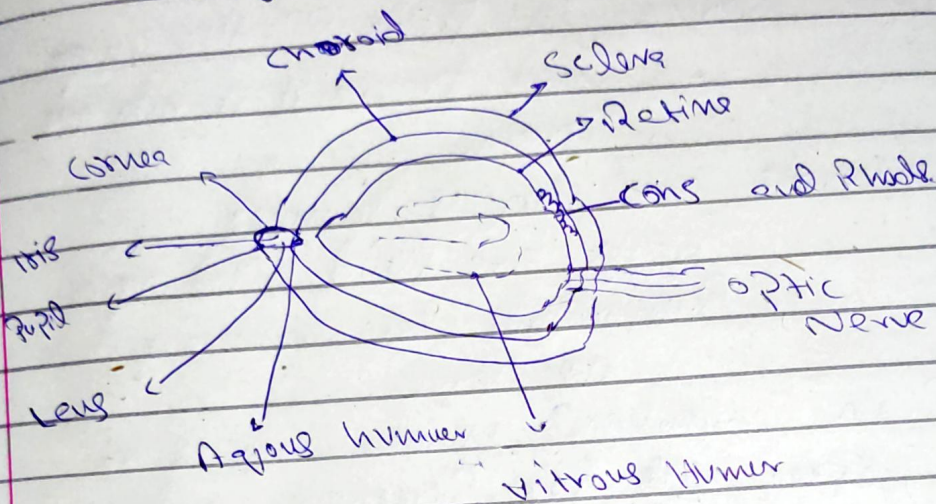
Q2
Ans

Human Eye:

It is the organ which allows us to perceive and interpret visual information for the surrounding environment. It is one of the sensory organs. Human eye has many inner and outer parts. Let's examine the structure

P.T.O

Fig: Human Eye:



Explanation:

1. Sclera: outermost layer for protection of Eye.
2. Choroid: under the Sclera. Contains capillaries and nourishes the Eye.
3. Cornea: First layer of the Eye and frontal side. Light waves interact with cornea and bend the light wave for entering the Eye.
4. Iris: It controls the movement of Pupil.
5. Pupil: The exact point from where the light enters into the Eye.
6. Lens: Use in reception light.
7. Retina: It contains photo receptors.
8. Rods and cones: It has photo receptors which convert light waves into action potential.

9. optic nerve: It picks up the image and transmits it into the Brain.

10. vitreous and Aqueous humors: Both eye fluid filled region. Responsible for maintaining shape of the eyes.

In summation, Human Eye is an organ used for perceiving and interpreting visual information from the surrounding environment.

Q 2
Ans

Human Brain

It is the most important part of human. It manages body's function, helps in reasoning, thinking and experiencing emotions. Human brain consists of different parts:

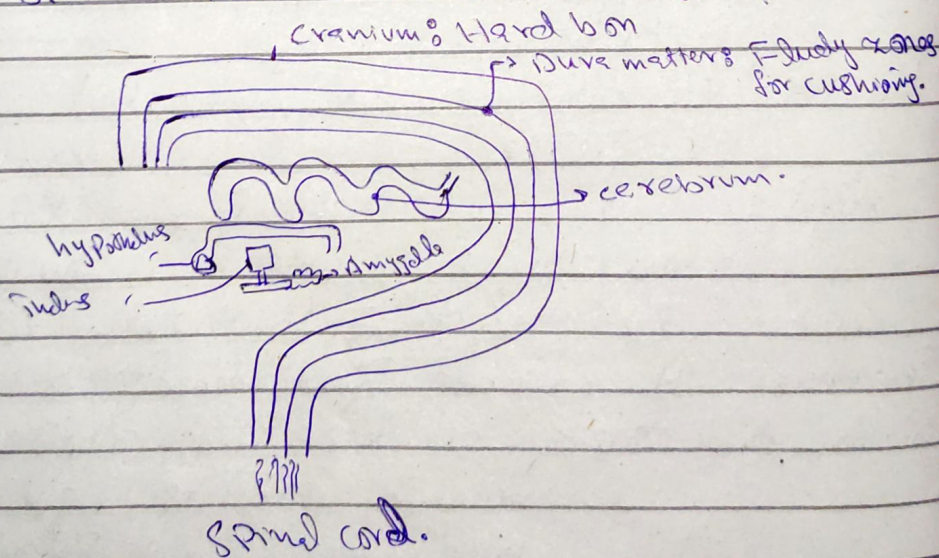


Fig.

Parts of Brain:

- ↳ Frontal Part: Thalamus, Limbic system, and cerebrum.
- ↳ Mid Brain: It connects the fore brain and hind brain
- ↳ Hind Brain: Known for coordination and balance of human body.

Thus, Human brain is a vital organ that is necessary for carrying out daily information and tasks.

Q4

Ans

Definitions:

1. Pesticides:

A substance that are used for controlling or eliminating the pests. Pests are eliminated in abundance due to Pesticides, because Pests are not good for crops, livestock and human health.

2. Herbicides:

Herbicides are designed to control or kill a specific plant that is not for other crops. These unwanted plants can suck the nutrition from the primary crops and weaken them.

P.F.

3

Insecticides

Insecticides are pesticides designed to eliminate insects. They are used to control or vanish the population of crop-damaging insects.

4

Ceramics

Ceramics are inorganic, non-metallic materials that are produced by the action of heat on materials such as clay. Such materials are porcelain, earthenware and stoneware. There are advanced ceramics that are used in electronic devices, aerospace applications and much more.

5

Greenhouse Effects

It is a process in which the earth warms itself by capturing some of the sunlight and major amount of light is reflected back. However, burning of fossil-fuels can enhance the greenhouse effect by increasing the greenhouse gases concentration, leading to global warming.

Q 4
Ans

Bonding in water molecules

The water molecule is formed through the covalent bonding involves the sharing of electrons between atoms to gain a stable electron configuration.

Bonding ways are:

1. Oxygen's Electron configuration:

Oxygen has five electrons in its outer electron shell and needs two more electrons for stability.

2. Hydrogen electron configuration:

Hydrogen has one electron and needs one more electron to become stable.

Hydrogen will follow the duet rule, aiming to have two electrons.

3. Covalent Bonding

In a water molecule, one oxygen atom shares two electrons with two hydrogen atoms.

4. Structural Formulas

The structural formula of water is $H-O-H$.

5. Polarity:

The oxygen atom is more electronegative than hydrogen.

As a result, the shared electrons spend more time closer to the oxygen molecule.

6. Hydrogen bonding

The polarity of the water molecule allows to form hydrogen bonds.

In summer, the water molecule is formed through covalent bonding, creating a polar molecule with a bent structure.

Q4
Ans

Types of Waves used in different gadgets:

1. RADAR:

It stands for Radio Detection and Ranging. Radar uses radio waves. Radar uses radio waves because it emits radio waves.

2. SONAR:

Its full form is Sound Navigation and Ranging. Sonar uses sound waves. Sonar generates sound waves in the ultrasonic frequency range and measure the time it takes for the sound waves to bounce off under water objects.

3. LIDAR:

Stands for Light Detection and Ranging. It uses laser waves. It is used for three dimensional maps and also in vehicle monitoring.

4. Mobile Phones.

Mobile phones use radio waves for communication. Radio waves are used to communicate with cellular towers. Different bands are allocated: 3G, 4G, 5G.

5. Thermistors:

Thermistors do not use any waves. They are temperature

Sensitive resistors. May change with temperature.

In Summary, RADAR uses radio waves, SONAR uses sound waves, LIDAR uses laser waves, mobile phones use radio waves and thermistors operate based on changes in electrical resistance with temperature.

Advantages and Disadvantages of Artificial Intelligence:

Artificial intelligence has many advantages and disadvantages.

Some ~~key~~ key points on both sides:

1. Advantages:

a. Accuracy:

AI is made to perform complex tasks with accuracy and precision.

b. Automation:

AI can perform repetitive tasks without any fatigue.

c. 24/7 Availability:

AI is a gift and of service 24/7 to perform any complex task.

d. Decision making:

AI has the ability to

to analyze huge amount of data rapidly so it is helpful in decision making in various fields: finance, military and health care.

Disadvantages:

a. Too much information syndrome:

AI has give human a huge amount of information which typically lead to too much information syndrome.

b. Loss of Creativity:

AI has no human like feelings yet and the decisions it make are lacking novelty.

c. Job Displacement:

with the advent of AI, in some cases, those who were doing repetitive tasks or calculations are on the verge of collapse.

d. Security issues:

AI can be beneficial but hackers typically use AI for evil ambitions. it lead to security breaches and cyber threats.

conclusively, AI can have both negative and positive aspects and it is upto the usage of it and its regulation.