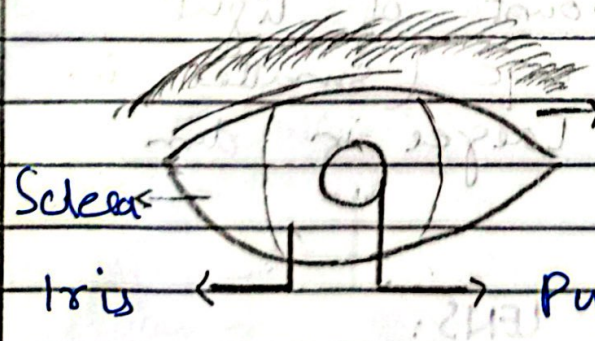
GSA, TEST: 2.

QUESTION: 3:

Explain the... eye?

INTRODUCTION:

Eye are the organ vital for seeing the wold around us, but vision can be impaired by a number of medical conditions a by aging. The eye is slightly asymmetrical globe, about one inch in diameter. The human eye funtions like a camera, converting light into signals that the brain can interpret as image. The visible part of the eye that we are able to see in the mirror is made up of pupil, iris, cornea and sclera.



WORKING OF A HUMAN EYE:

The working of a human eye is a

complex process. It takes several steps. Following is a step by step explanation of how a human eye works.

2. LIGHT ENTRY THROUGH CORNEA:

Light first enters the eye through the transparent cornea, which bends (refracts) the light to help focus it.

2. CONTROL OF LIGHT BY THE PUPIL:

After passing through the cornea, the light travels through the pupil, the black circular opening in the center of the iris. The iris adjusts the size of the pupil to control the amount of light entering the eye (smaller in bright light, larger in dim light).

3. FOCUSING BY THE LENS:

The light then passes through the lens, which

further focuses it onto the retina. The lens changes its shape through a process called accommodation, depending on the distance of the object from the eye.

4. **IMAGE FORMATION:**

The retina, located at the back of the eye contains light-sensitive cells. The focus light creates an inverted image on the retina.

5. **CONVERSION TO ELECTRICAL SIGNALS.**

These light-sensitive cells convert the light into electrical signals, which are transmitted through the optic nerve to the brain.

6. **PROCESSING IN THE BRAIN:**

The brain processes these signals and flips the image to create the final upright picture we see.

CONCLUSION:

To conclude the eye collects light, focuses it on the retina converts it into electrical signal that the brain interprets as the image we see.

B. Give symptoms ... dengue.

ANS **SYMPTOMS OF MALARIA:**

Following are the symptoms that a person has when infected with malaria.

1. High fever with chills and headache.
2. Sweating and body ache.
3. Nausea and vomiting.
4. Fatigue and weakness.
5. Muscle pain.
6. Shivering episodes.
7. Enlarged spleen (in some severe cases).

PREVENTIVE MEASURES OF MALARIA:

Following are

The measures of malaria that an individual can take to prevent it.

1. Use insect repellent.
2. Sleep under mosquito net.
3. Wear long-sleeved clothes.
4. Spray insecticide.
5. Take anti-malaria medication while traveling to high risk places.
6. Close doors and windows or keep them screened.

SYMPTOMS OF DENGUE:

Following are the symptoms of dengue.

1. Sudden high fever.
2. Body ache.
3. Severe headache (specially behind the eye).
4. Skin rash.
5. Fatigue.
6. Nausea.

PREVENTIVE MEASURES FOR DANGUE:

1. Mosquito repellant.
2. Eliminate stagnante water.
3. Wear protective clothing.

2. UNTREATED SWEAGE:

Domestic and municipal waste contains organic matter and nutrients that contribute to eutroplication.

3. DEFORESTATION:

Soil erosion caused by deforestation leads to sediment and nutrient deposition in water bodies.

4. INDUSTRIAL AFFLUENT:

Waste from industries often contains high level of nutrients, which are released into water system.

EFFECTS OF EUTROPHICATION:

Following are the effects that eutrophication has.

1. ALGAL BLOOMS:

Rapid Algae growth blocks sunlight from reaching

underwater plants, disrupting photosynthesis.

2. **OXYGEN DEPLETION:**

When algae die and decompose, it depletes oxygen in water, leading to the death of aquatic life.

3. **WATER QUALITY DECLINE:**

The water becomes murky, smelly and unsuitable for drinking, recreation or industrial use.

4. **BIODIVERSITY LOSS:**

Sensitive aquatic species cannot survive and this leads to their death.

D. **DIFFERENTIATE BETWEEN GIS AND GPS.**

DIFFERENCES:

Following are the differences in geographic information system and global positioning system.

	GIS (GEOGRAPHIC INFORMATION SYSTEM).	GPS (GLOBAL POSITIONING SYSTEM).
1.	A system used to collect store and analyse data and visualise geographic data.	A satellite based navigation system.
2.	Analyse spatial data and creates layered maps.	Provides realtime positioning, navigation, and timing service.
.	Used in urban planning, disaster management, resource mapping.	Used for navigation, tracking vehicles.
.	Includes hardware, software, and data to analyse information.	Relies on satellites, receivers, and ground station.

QUESTION: 1:

(a) A cell ... nucleous.

INTRODUCTION:

Cell was discovered by Robert Hooke in 1665, who named it because of its resemblence to cells inhabited by Christian monks. The cell is the basic structural and functional unit of living forms. A cell has different organelle, following are the structure and function of some of them.

STRUCTURE AND FUNCTION OF CYTOPLASM:

Cytoplasm is a gell like fluid that fills the space between the cell membrane and the nucleos. It is made up of 90% water, salts and organic molecules.

It supports and suspends organelle, provides medium for different chemical reaction.

STRUCTURE AND FUNCTION OF PLASTID:

Found in plant cell

plastid include chloroplast, chromoplast and leucoplast.

Chloroplast perform photosynthesis, chromoplast store pigments while leucoplast stores starch, oil and proteins.

STRUCTURE AND FUNCTION OF NUCLEUS:

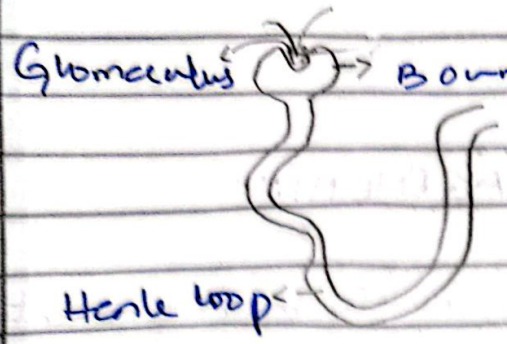
A double membraned organelle present in both animal and plant cell containing DNA, nucleoplasm and nucleolus.

Controls all the cell activities, can call nucleus the manager of all activities. Stores genetic information and direct protein synthesis.

B). NEPHRON:

STRUCTURE:

1. Bowmans capsule.
2. Proximal tube. (Reabsorbs water).
3. Loop of Henle. (maintains water balance)
4. Distal tubule. (Fine tune ions).
5. Collecting duct. (Transport urine).



FUNCTIONS:

Filtration. (Filters blood).
Reabsorption. (Recovers water).
Secretion (Eliminates waste).
Excretion (produce waste).

Causes . . . Smog.

SMOG CAUSES:

Emission from vehicles.
Emission from industries.
Burning of fossil fuel.
Industrial and Urban pollution.
Low wind speed.

PREVENTIVE MEASURE:

1. Use renewable energy.
2. Enforce strict vehicle standards.
3. Plant more trees.
4. Implement air quality measuring system.

D). SWM ... Pakistan.

SOLID WASTE MANAGEMENT:

Solid waste management SWM involves the collection, transportation and proper disposal of waste in an environmentally stable manner.

WEAKNESS IN SWM IN PAKISTAN.

1. Inefficient collection (Only 60-70% waste is collected).
2. Poor infrastructure
3. Open dumping.
4. Absence of recycling.
5. No segregation (No seperation of organic, recyclable and hazardous waste).
6. Lack of awareness.
7. Institutional weakness.