

Question #2:

Differentiate between igneous rocks and metamorphic rocks?

A. Difference b/w Igneous rocks and metamorphic rocks.

1. Igneous rocks:

The type of rocks formed from the cooling and solidification of magma or lava.

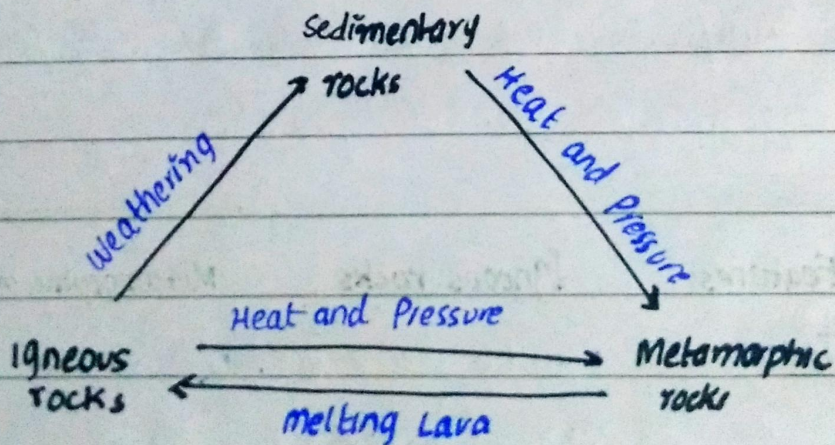
2. Metamorphic rocks:

The type of rocks formed from the transformation of existing rocks under heat, pressure or chemical processes.

| Features | Igneous rocks   | Metamorphic rocks                                     |
|----------|---|---|
| Texture  | • can be coarse grained (intrusive) or fine grained (extrusive) | • can have foliated (layered) or no foliated texture. |
| Examples | • Granite, basalt, Pumice                                       | • Marble, Schist, slate.                              |

|                     |   |  |
|---------------------|---|--|
| Mineral Composition | Original minerals are often crystallized from molten material | Original minerals are altered or recrystallized                        |
| Location            | Found near volcanic regions or deep within Earth's crust      | Found in regions with tectonic activity or mountain building processes |

## The Rock Cycle.



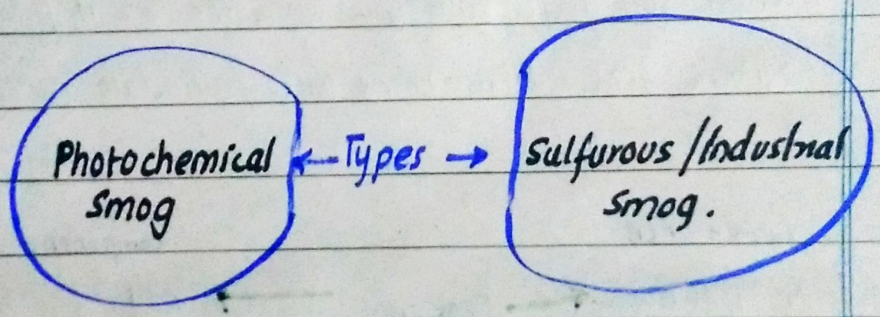
b. Explain the phenomenon of smog and give its types.

A. Smog:

Smog is a type of intense air pollution that forms when certain pollutants interact with atmospheric conditions.

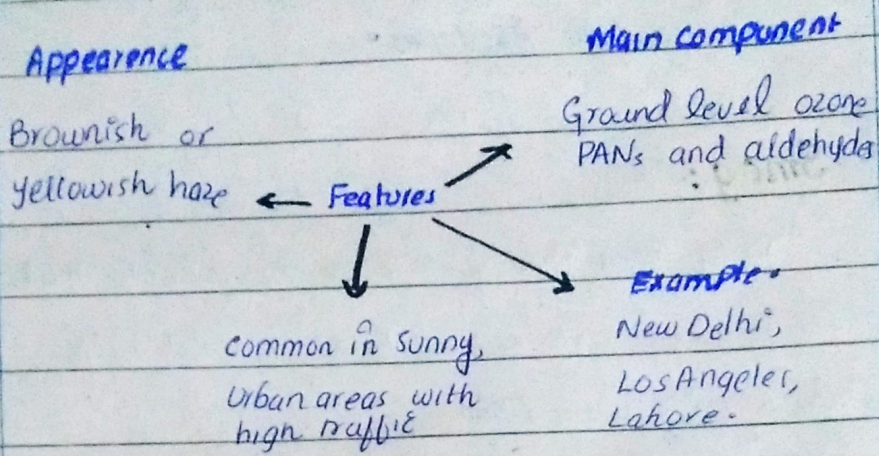
The term "smog" comes from a combination of "smoke" and "fog", as it often appears as a thick hazy layer in the air.

B. Types of Smog.



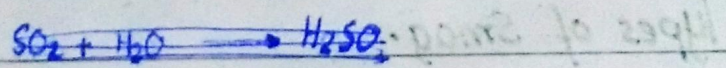
1. Photochemical smog:

It occurs when sun-light reacts with nitrogen oxides (NOx) and volatile organic compounds usually emitted by vehicles and industrial processes.

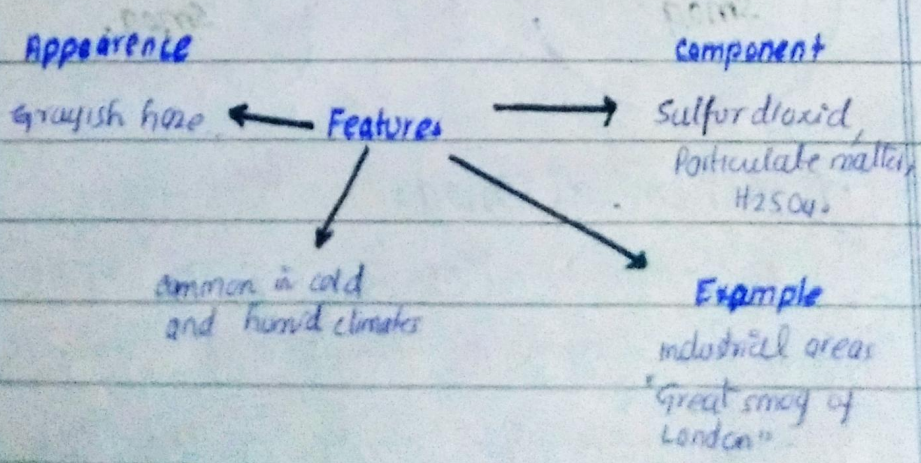


## 2. Sulfurous smog (Industrial smog).

It results from burning fossil fuels, especially coal, which release sulfur dioxide (SO<sub>2</sub>)



when SO<sub>2</sub> react with moisture in the air, it forms sulfuric acid and combines with particulate matter

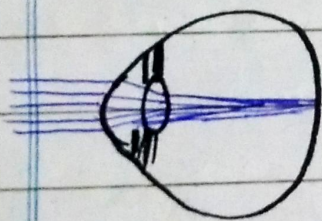


Q.

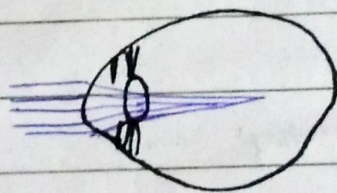
Explain short and far sightedness.

### A. Short Sightedness:

Short Sightedness or near sightedness is also known as myopia. It is the defect of an eye in which a person can see nearby objects clearly, but has a blurred vision when looking at things at a distance.



Normal eye



Light Eye Focused  
in front of retina  
(Myopia).

### Causes:

1-

- It is likely to result from the combination of genes and life style factors (such as spending long periods of time doing close-up work or indoors)
- It often runs in families

## 2. Treatment.

- corrective concave lenses
- contact lenses
- LASIK surgery

## B. Far sightedness:

Far sightedness, also known as Hyperopia is an eye condition that causes blurry vision when looking at things close up (like words in a book)

### 1. Symptoms

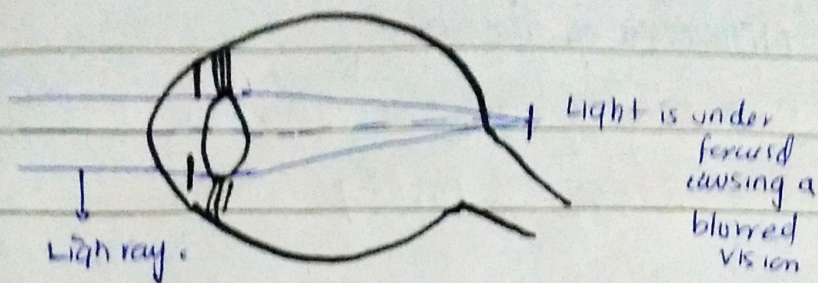
- Blurry vision
- Difficulty reading
- Dull pain in eyes
- Eye strain

### 2. Causes:

- Having an eye ball that's relatively short (decreased axial length)
- Having a cornea that's flatter than expected.

### 3. Treatment.

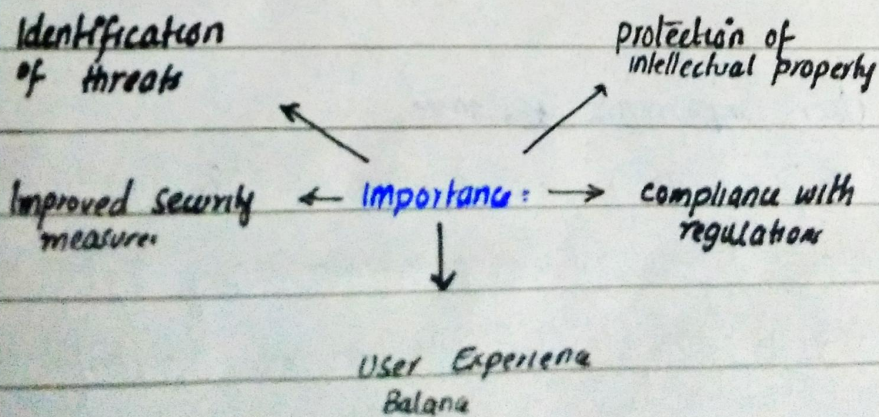
- corrective convex lenses
- refractive surgery



c. Give the importance of risk management to assessment in DRM.

### A. Importance of Risk assessment in DRM:

Risk assessment is a critical step in designing and implementing effective DRM strategies to protect digital content. It helps identify potential vulnerabilities and ensure proper measures are in place.



## 1. Identification of Threats

It helps to recognize risks like unauthorized access, piracy and hacking attempts.

## 2. Protection of Intellectual Property

It ensures that creators and publishers maintain control over their content.

## 3. Compliance with Regulations

It ensure adherence to copyright laws and licensing agreements, and reduce legal risks associated with non compliance.

## 4. Improved Security Measures

It guide the development of robust encryption and access control mechanisms.

## 5. User Experience Balance

It helps implement DRM solutions that protect content without overly inconveniencing legitimate users. It also identifies risks of user dissatisfaction due to restrictive policies.



## a. write a note on solar system

### A. Solar system:

The solar system is a collection of celestial bodies including the sun, planets, moons, asteroids, comets and other objects, that are bound together by gravity.

- It is located in the Milkyway galaxy and forms a significant part of our cosmic neighbourhood.

### B. Key Components:

#### Sun

central star

massive ball of H and He gas

sun's gravitational pull keeps

all other objects in ~~place~~<sup>orbit</sup> around it.

#### Planets.

eight planets, revolve around sun.

Inner planets: Mercury, Venus, Mars, Earth

outer planets: Jupiter, Saturn, Uranus,

Neptune.

**Moons-**

natural <sup>in planets</sup> satellites\* that orbit  
planets

**Dwarf Planets**

smaller planet, that do not have  
clear orbits e.g Pluto

**Asteroids**

Rocky objects found in Asteroid  
Belt between Mars and Jupiter.

**Comets.**

Icy body that originate in  
the outer reaches of the  
solar system.

**The Kuiper Belt:**

Region beyond Neptune that  
contains many icy objects  
including dwarf planets  
and comets.

## Question 4.

- Differentiate between RAM and ROM, also define the terms Nibble, USB and Mother board.

### A Difference between RAM and ROM.

#### 1. RAM:

- RAM stands for Random Access Memory.
- RAM is used to temporary store data while the computer is on.
- The Data in RAM is volatile in nature, meaning that as soon as it loses power, that data disappear.
- It is more flexible, but expensive.

#### ROM:

- ROM stands for Read only memory.
- It refers to permanent memory.
- It's non volatile
- It generally can't be changed after it's created.
- It is cheaper as compared to RAM.

## B. Motherboard:

The motherboard is the main circuit board in a computer, connecting all essential components like the CPU, RAM, storage and peripherals. It facilitates communication between hardware components through buses and chipsets.

## C. Nibble:

It is also called as "nybble" and "nyble" when referring to a "byte".

It is a second smallest unit of information for data transmission and storage. It corresponds to half of a byte and thus four bits.

## D. USB:

USB ~~etc~~ (Universal Serial Bus) is a technology used to connect computers to peripheral devices such as printers, scanners or keyboards etc.

6. Give the importance of

Pituitary gland:

### Pituitary Gland:

It is a small pea sized organ located at the base of hypothalamus. It is often referred to as master gland because it regulate and control many vital body functions through hormone secretion.

### Importance:

#### Hormonal Regulation:

It produces and release various hormones that regulate vital body processes. such as growth hormone, prolactin, Thyroid stimulating hormone, ACTH.

#### Control of the endocrine system,

It control and coordinate the activities of other endocrine glands such as thyroid gland, adrenal gland, gonads etc.

## Water and Blood Pressure Regulation.

The posterior pituitary release ADH (Anti-diuretic hormone) which regulate the body's water balance by reducing water loss in kidneys.

## Growth and Development

It secrete growth hormone through which it supports overall growth, bone formation and the development of muscles.

## Reproduction.

It produce hormones which are vital in the reproductive processes such as menstrual cycle in females and sperm production in males.

## Stress Response.

Its secretion of ACTH triggers the release of cortisol from adrenal gland, helping the body manage stress by regulating metabolism and the immune response.