

## Question no. 02(a)

a) Differentiate b/w Igneous rocks and Metamorphic rocks

### Igneous Rocks

### Metamorphic Rocks

1 **Definition:** Igneous rocks are one of the three main types of rocks, formed by the process of solidification of molten lava.

**Definition:** Metamorphic rocks are formed by natural processes such as weathering, erosion and accumulation of minerals.

2 **Process of formation:** These rocks are formed by geological phenomenon such as volcanic eruption. When volcano erupts, lava solidify and form igneous rocks.

**Process of formation:** These rocks are formed as a result of accumulation of minerals, dust, and debris of other type of rocks. Due to high pressure and temperature, processing of layering takes place resulting in the formation of metamorphic rocks. This process is known as metamorphism.

3 Types: There are mainly two types of igneous rocks.

i) Intrusive rocks: This type of rocks are formed under the earth crust. They have crystalline structure due to their formation under high pressure and temperature.

ii) Extrusive rocks: This type of rocks are formed over the surface of the earth. They have non-crystalline structure.

4 Example:

- i) Basalt
- ii) Feldspar

Types: There are two types of metamorphic rocks.

i) Foliated rocks: This types of rocks are formed as a result of ~~excess~~ accumulation of different types of minerals. They have visible layered textures.

ii) Non-Foliated Rocks: This type of rocks are formed as a result of accumulation of similar type of minerals. They don't have visible layered textures.

Example:

- i) Granite
- ii) limestone
- iii) Sandstone



## Question no. 02 (b)

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

5

### 1 Introduction:

Smog is a type of air pollution that reduces the visibility in the atmosphere. The word 'smog' is made of combination of two words i.e., 'Smoke' and 'fog'. It is caused by the suspension of pollutants in the air and moist vapours. These suspended particles in the atmosphere are a result of various human and natural activities causing severe harmful impact on health and ecosystem.

### 2 Type of Smog:

Smog is classified into various types based on its source of formation.

i) Industrial Smog: This type of smog is formed as a result of industrial smoke emissions. Large amount of soot particles get trapped into the environment causing lack of visibility and health issues.

ii) **Photochemical Smog**: It is formed as a result of photochemical reaction of nitrous oxide ( $\text{NO}_x$ ) present in the environment and ~~sun~~ sunlight. This process produces ground-level ozone ( $\text{O}_3$ ) leading to air pollution.

iii) **Temperature Inversion**: This type of smog is formed due to difference in temperature between layers of atmosphere. It causes pollutants and warm air to trap inside the atmosphere.

### 3 Health Impacts of Smog:

Smog causes various health risks such as asthma, allergies, and irritation in eyes. It also exacerbates the risk of chronic diseases such as cardiovascular problems.

### 4 Environmental Impacts of Smog:

Smog has numerous environmental impacts such as acid rains, less visibility, and disruption of ecosystems. It severely impacts biodiversity and harms vegetation by affecting ecological processes.



## 5 Conclusion:

Smog is a ~~natural~~ type of air pollution caused by hazardous human activities exacerbated by ~~natural~~ phenomenon. It has severe deteriorating impacts on human health and environment.

## Question no: 02 (c)

- c) Give the importance of Risk assessment in DRM

## Risk Assessment in DRM

### 1 Introduction:

Risk assessment is a crucial component of Disaster Risk Management (DRM). It aids in analyzing, evaluation, and management of disasters. This process leads to better understanding of hazards and catastrophic areas to prevent future harmful events.

### 2 Key Steps in the Process:

Risk assessments in Disaster Risk Management (DRM) is based on various steps and processes.

### i) Identification of vulnerabilities:

In first step vulnerable areas or objects are identified.

### ii) Analysis of the risk:

In the <sup>second</sup> step, thorough analysis is performed. It include assessment of frequency of events, condition of the infrastructure and population at the risk of the vulnerable events.

### iii) Formulation of preventative measures:

In the final step preventive measures are formulated as per the results obtained from the analysis.

## 3 Importance of Risk Assessment in DRM:

i) Aids in Decision-making: It aids in decision-making process and lead to a informed and well-researched formulation of policies or methods to mitigate the risk of hazards.

ii) Save human loss: Informed decisions play a crucial role in making timely efforts to save human lives from



impact of catastrophes.

iii) Resource Allocation: Informed decision making aids in efficient resource allocation for high threats area and save from economic losses.

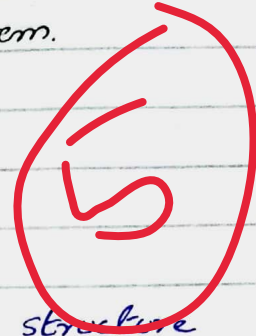
#### 4 Conclusion:

Risk assessment is a vital part of disaster management (DRM) and helps in managing potential risk areas, economic losses and precious human lives.

## Question no. 04 (a)

a) Write a short note on solar system.

### Solar System



#### 1 Introduction:

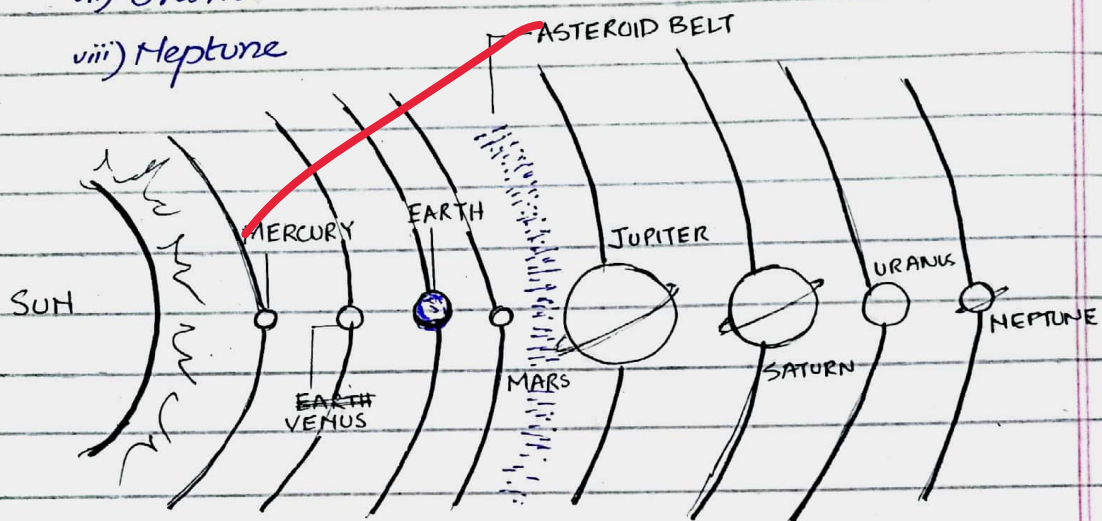
Solar system is a cosmic structure composed of celestial bodies, having sun as its central object. It formed 4.5 billion years ago. It has a gravitational pull that keeps all celestial bodies around the sun in their orbits. It has nine planets, each revolving in its orbit around the sun.

#### 2 Composition of the Solar System:

The solar system is composed of central object called 'sun', having nine planets around it, moving in their own specific orbits. It has numerous asteroids, meteoroids and dust particles. The major elements of the solar system are hydrogen and helium. The names of the planets of the solar system in their sequence are mentioned below:



- i) Mercury
- ii) Venus
- iii) Earth
- iv) Mars
- v) Jupiter
- vi) Saturn
- vii) Uranus
- viii) Neptune



THE SOLAR SYSTEM

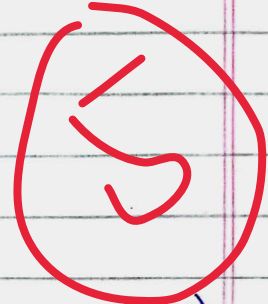
Solar system contains asteroid belt between Mars and Jupiter. Asteroids are celestial bodies made up of dust and ice. The earth is the only planet in the solar system where life exist. The Jupiter is the largest planet in the solar system. The hottest planet in the solar system is Venus and the coldest is Neptune.

## Question no. 04(c)

- c) Differentiate RAM and ROM; also define the terms Hibble, USB and mother board.

### RAM

### ROM



- |   |   |
|---|---|
| i) Random access memory is a temporary memory which store instructions and programmes currently in use. | Read only memory (ROM) is a permanent memory which stores programmes necessary to operate the computer.     |
| ii) Random access memory (RAM) is highly volatile means, data is lost after computer is turned off.     | Read only memory (ROM) is non-volatile means, data remains in the memory even after computer is turned off. |
| iii) It changes data every second due to its function of currently running data.                        | The data on the ROM is permanent and cannot be changed.   |
| iv) Can easily be upgraded by changing hardware device of RAM in a                                      | It cannot be changed and requires change of motherboard.  |



motherboard slot.

v) It is faster as compared to ROM due to high refresh rate.

vi) Types of RAM include:  
Dynamic Ram (DRAM)  
and static Ram (SRAM)

It is slower as compared to RAM.

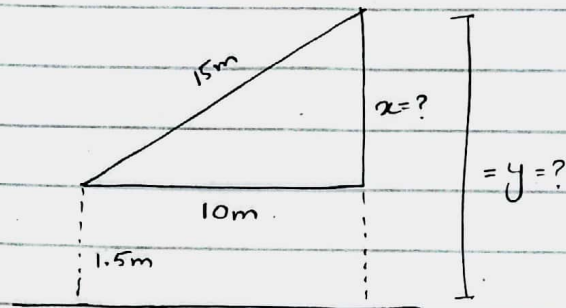
Types of ROM include:  
Hard disk drive (HDD)  
and (SSD).

USB: Universal serial bus is a storage device used to store data.

Motherboard: It is the main component of CPU, having all essential integrated circuits (IC).

## Question no. 08

a)



- Let height of the tree =  $y = ?$
- Let vertical distance between Ali's eyes and top of tree be =  $x$

Using pythagoras theorem

$$H^2 = B^2 + P^2$$

$$(15)^2 = (10)^2 + x^2$$

$$225 = 100 + x^2$$

$$125 = x^2$$

$$x = \sqrt{125}$$

$$x = 11.3$$

Add  $x$  and  $1.5m$ , to find  $y$

$$y = 12.8m$$

5



## Question no. 8(d)

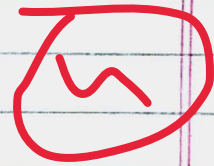
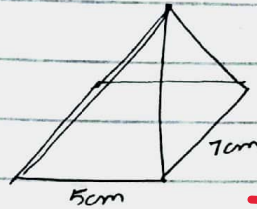
Pyramid height = 10cm

Rectangular base

length = 7cm

width = 5cm

Volume = ?



Formular for volume of pyramid

$$V = \frac{1}{3} (b)(h)$$

$$V = \frac{1}{3} (7)(5)$$

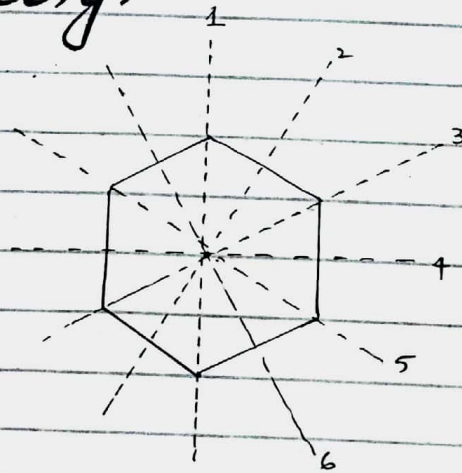
$$V = \frac{35}{3} = 11.6 \text{ cm}^3$$

## Question no. 8(c)

Lines of Symmetry:

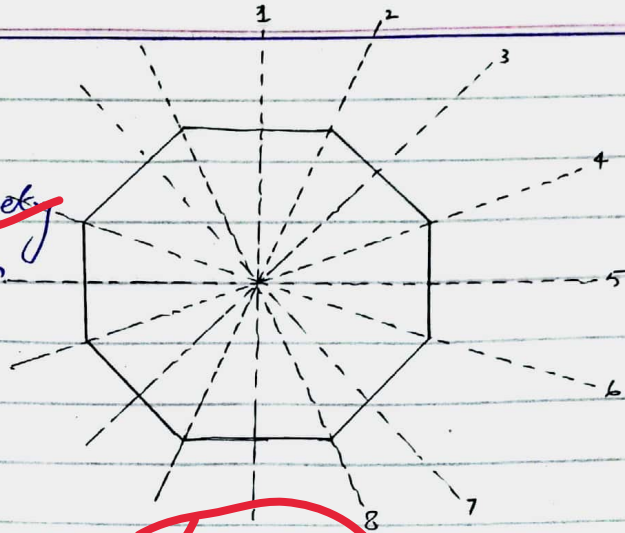
Hexagon:

Hexagon has 6 lines of symmetry.



Octagon:

There are 8 symmetry  
line in an octagon



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Good keep it up  
Good presentation of paper