Q. What is weather cycle ? Describe
it cases and parts.

**Weather Cycle** : / **Water Cycle** :

The water cycle is a continous natural
process that circulates water b/w
the Earth surface, atmusphere and
back again. It involves processes such a

○ Evaporation
○ Condensation          ○ Transpiration
○ Precipitation
○ Runoff

It/ These are maintaining a dynamic
balance of water on a plant.
Solar energy drives this cycle,
influencing weather patterns and
sustaining life.

**Causes of water cycle**

The water cycle is driven by
Solar energy. Sunlight heats the
Earth's surface causing water to
evaporate from oceans, lakes and
rivers.

The water cycle is continous (becen
of water constantly moving through
its various phases

On average a water molecule spends
about 98% of its time in the
ocean around 20 days in the atmosphere,
13 days in ice, and just a few
days in lakes and rivers before
returning to the ocean.

The specific volume and distribution
of water in each phase vary with
climatic conditions.

## Different Parts of water cycle;

(1) Evaporation;
    water changes from liquid to vapour

(2) Condensation;
    water vapor condense into Clouds

(3) Precipitation;
    Moisture falls as rain, snow, sleet or hail.

(4) Runoff;
    Excess water flows into rivers and oceans

(5) Transpiration;
    Plants release water vapour through
    their leaves.

Draw the cycle as well

Qn. What is Air Pollution? Discuss it cause and measurement methods. Name the countries with the highest and lowest percentage of?

## Air Pollution :-

Air pollution refers to the presence of harmful substances such as pollutants particulate matter, gases and in the Earth's atmosphere. It can have adverse effects on human health, ecosystem and the climate.

### Causes

1. **Industrial Emissions:**
Combustion processes and industrial activities release pollutants.

2. **Vehicle Emissions:**
Exhaust from automobiles contributes to air pollution.

3. **Agricultural Practices:**
Pesticides and fertilizers release pollutants into the air.

# Measurement Methods of Air Pollution;

**Air Index Quality**
A numerical scale showing air quality based on concentrations of pollutants.

**Satellite Observation ;**
Satellite monitor atmospheric composition helping track pollution level globally.

**Ground level monitoring Stations ;**
Deployed in urban areas, these station measures concentrations of various pollutants.

According to **World Air Quality Report** 2021, countries with higher level of air pollution include

- Bangladesh
- Pakistan
- India

Countries with relatively low air pollution level includes
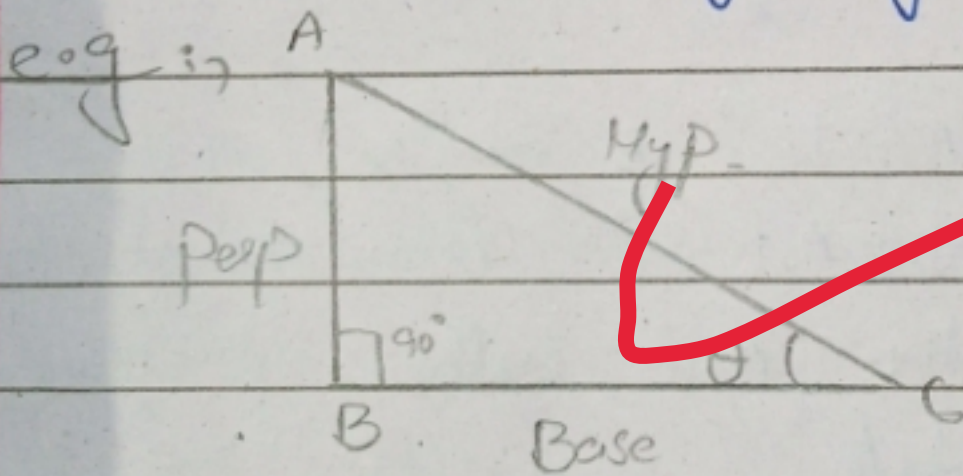
- New Zealand
- Sweden
- Finland,

The ranking may vary annually based on specific pollutants and measurement methods.

Q1. (a) Define and the draw the following.

(1) **Right angle Triangle :**

A right-angled triangle is a triangle, that has one side of iterior angles equal to 90° or any one angle is a right angle known as Right angle Triangle.
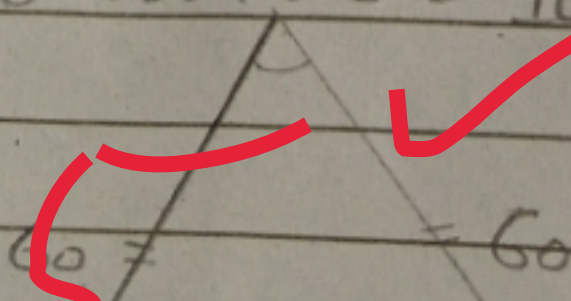
**"OR"**

A Triangle having one angle of 90° known as Right angle Triangle.

e.g :-



(11) **Equilateral Triangle :**

A Triangle having 3 sides and 3 angles are equal, then it is known as Equilateral Triangle.

e.g = 60 + 60 + 60 = 180°



4.5

(b) Define the following Terms :-

(1) **Mean / Average :-**
Mean is defines as; to reduce to error and to find out the accuracy.

$$Mean = \frac{Sum \text{ of } observation}{No \text{ of } observation}$$

e.g := 6, 4

$$\frac{6+4}{2} = \frac{10}{2} = \boxed{5}$$

(2) **Median :-** Median is define as;
"It is a statistical term used to represent the mid value in the arranged data".

e.g := 2, 4, 6, 8, 10

med = 6.

e.g := 2, 4, 6, 8, 10, 12

Med = 6, 8

$$= \frac{6+8}{2} = \frac{14}{2} = 7$$

3. **Mode:-** Mode is define as;
It is a Statistical term used the most repeated value in the given data.
eg:- 2, 4, 6, 6, 8

   mode = 6.

2, 4, 66, 8, 8, 10, 12, 12

mode = 6, 8, 12.

4. **Range:-** Range is define as;
It is the difference b/w of max and minimum value in the given data.
eg:- 2, 4, 6, 8, 10

   $R = 10 - 2$

   $R = \boxed{8}$

(5) There are nine students in a group having ages 15, 15, 16, 16, 16, 17, 17, 18, 19. Calculate mean, medium, mode, range. of their ages.

Mean = $\dfrac{\text{Sum of observation}}{\text{No of observation}}$

$= \dfrac{15 + 15 + 16 + 16 + 16 + 17 + 17 + 18 + 19}{9}$

$= \dfrac{149}{9}$

**Mode** - The most repeated value in given data is 16.

37
34
48
4 30
149

T W T F S

**Median :** 15, 15, 16, 16, 16, 17, 17, 18, 19

Sol⁻

$$Med = \frac{16 + 16}{2}$$

$$= \frac{32}{2}$$

$$Med \boxed{= 16}$$

**Range :** 15, 15, 16, 16, 16, 17, 18, 19

Sol⁻

$$R = Max - min$$

$$R = 19 - 15$$

$$\boxed{R = 4}$$