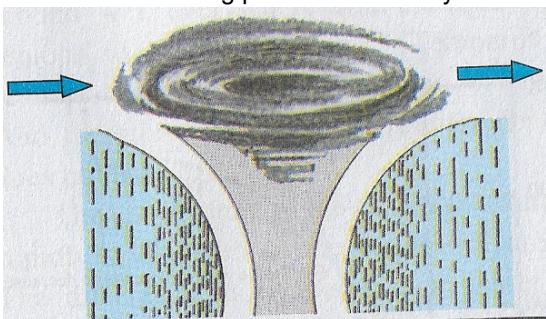


**Chapter: 5**

**Q.1 Answer in one sentence..**

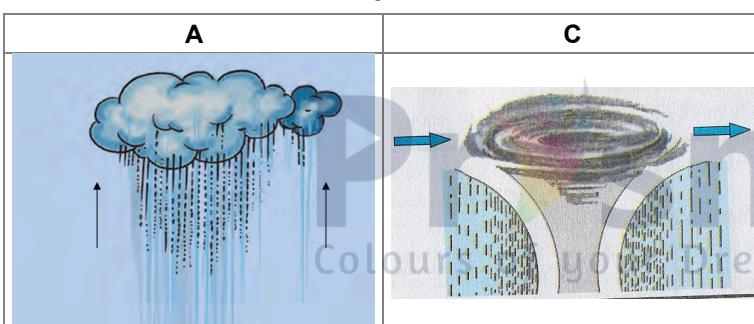
15

- 1 Look at the following picture and identify the correct rainfall type



**Ans** Cyclonic Rainfall

- 2 What is the difference between fig A and C



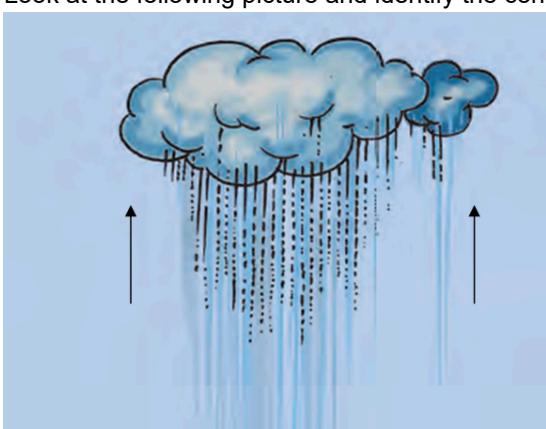
**Ans Fig A:**

shows convectional rainfall, which occurs in equatorial region. It occurs almost everyday in the afternoon. Rainfall is accompanied with lightning and thunder. Such a rainfall occurs in limited area in the world. Occurrence of convectional rain is certain.

**Fig C :**

shows cyclonic rainfall, which occurs in temperate zone. This type of rainfall is seasonal in nature. Stormy winds and floods are associated with this type of rainfall. This rainfall is less certain.

- 3 Look at the following picture and identify the correct rainfall type



**Ans** Convectional Rainfall

- 4 Look at the following picture and identify the correct rainfall type

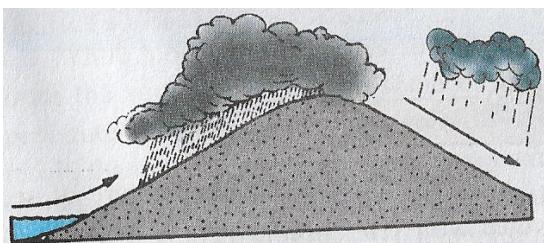


**Ans** Orographic Rainfall

- 5 Identify the odd man out:  
Thermometer, Rain Gauge, Anemometer, Measuring Jar.

**Ans** Thermometer

- 6 on which side of the mountain is it raining more?



**Ans** Windward side of the mountain it is raining more.

- 7 Identify the odd man out:  
Orographic rainfall, Acid Rain, Cyclonic Rainfall, Convectional Rainfall.

**Ans** Acid Rain

- 8 Identify the odd man out:  
Snowfall, Rainfall, Hailstones, Dew.

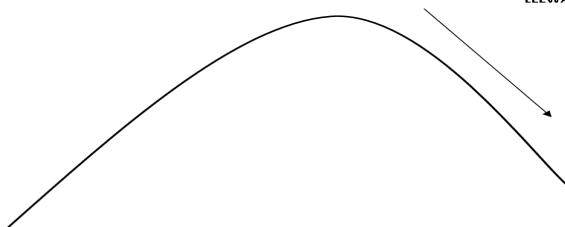
**Ans** Dew

- 9 Shade the rain shadow region in the figure name it.



**Ans**

Rain Shadow region, Pune (Wai Rainshadow region of Mahableshwar)  
LEEWARD SIDE



- 10 Singapore Lies in educational region so it gets which type of rainfall.

**Ans** Convectional rain

- 11 Identify the precipitation type with the help of the description given:  
A white cotton like layer spreads on the earth's surface. Because of this form of precipitation, the state of Jammu and Kashmir has to change its capital in winters. In Maharashtra, it does not precipitate like this.

**Ans** Snowfall

**Prism**  
Colours of your Dreams

**12** Stormy winds and floods are associated with which rainfall type?

**Ans** Stormy winds and floods are associated with Cyclonic rainfall.

**13** Identify the precipitation type with the help of the description given :

It is the main source of the water that you use. Sometimes it is torrential and sometimes continuous. Most of the agriculture in India is dependent on it.

**Ans** Precipitation

**14** Identify the precipitation type with the help of the description given:

It seems as water droplets are floating in the atmosphere. In London, one cannot see the sun till the afternoon during winters because of this phenomenon.

**Ans** Fog

**15** Identify the precipitation type with the help of the description given:

It never precipitates like this in equatorial areas. Precipitation in the solid form sometimes causes damage to the crops.

**Ans** Hailstone

## **Q.2** Differentiate the following

**1** Dew and Frost

<b>Ans</b>	<b>Dew</b>	<b>Frost</b>
i.	When the temperature of the air is less, atmospheric vapour condenses and tiny drops of water found on cool surface are called dew.	When the temperature is below freezing point, atmospheric vapour turns into ice crystals are called frost.
ii.	They are generally found on leaves and grass or winter morning.	They are generally found on cool surfaces in cold region.

**2** Snow and Hail

Colours of your Dreams

<b>Ans</b>	<b>Snow</b>	<b>Hail</b>
i.	In cold weather atmospheric vapour condense and fall in the form of tiny crystals laying on the ground as a white layer.	When the temperature is very high the upward air blows at a greater speed. After reaching considerable height vapour present into the air condense and solidification of the droplets takes place and hail stone take place.
ii.	Generally snow is found in cold region and during winters.	Generally found in the hot region and during summers.

## **Q.3** Question related to graph / diagram:

**1** Answer the following questions based on the given diagram:

**Read the following diagram and answer the following questions**



- i. What type of rainfall occurs in Maharashtra?
- ii. Where will the rain shadow region lie in Maharashtra?
- iii. Considering the figure estimate the rainfall of your district?
- iv. Discuss the figure estimate the rainfall of your district.

**Ans** i. Orographic rain

ii. Central Maharashtra / Maharashtra plateau

- iii. Mumbai – 1000 mm  
 iv. Mumbai is located in the coastal region, Sayadri obstructs the moisture-laden wind which is blowing from the Arabian sea. Hence, the estimated rainfall of Mumbai is 1000 mm.

**2** Answer the following questions based on the given diagram:

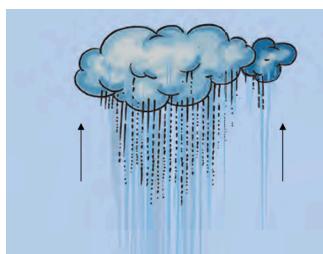


FIG 'A'

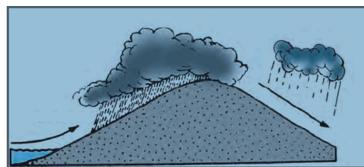


FIG 'B'

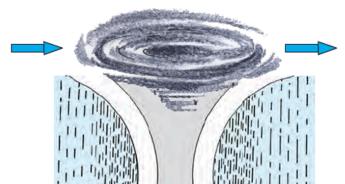


FIG 'C'

- Fig. B. on which side the mountain is it rain more
- What is the difference between A and C
- What type of rainfall occurs in Singapore ?
- Shade the rain shadow region in fig B. and name it.
- Stormy winds and floods are associated with which rainfall type.

**Ans** i. Windward side

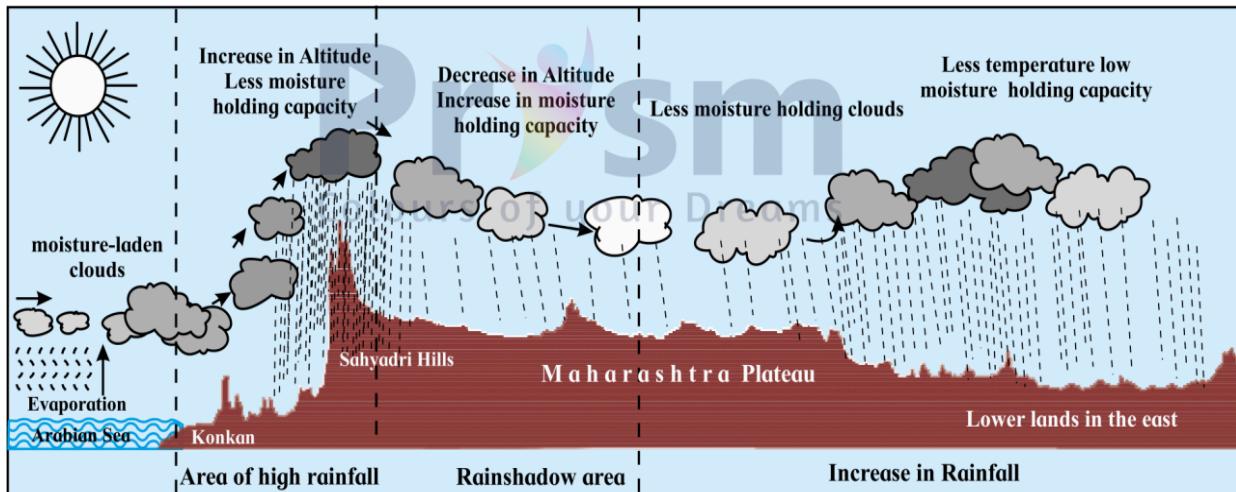
- ii. Figure A shows convectional rain and fig C. Cyclonic rain.  
 iii. Convectional rain.

iv.



- v. Cyclonic rainfall

**3**



Answer the following questions based on the given diagram:

- What type of rainfall occur in Maharashtra?
- Where will the rain shadow region lie in Maharashtra?
- Considering the figure estimate the rainfall of your district. Discuss.

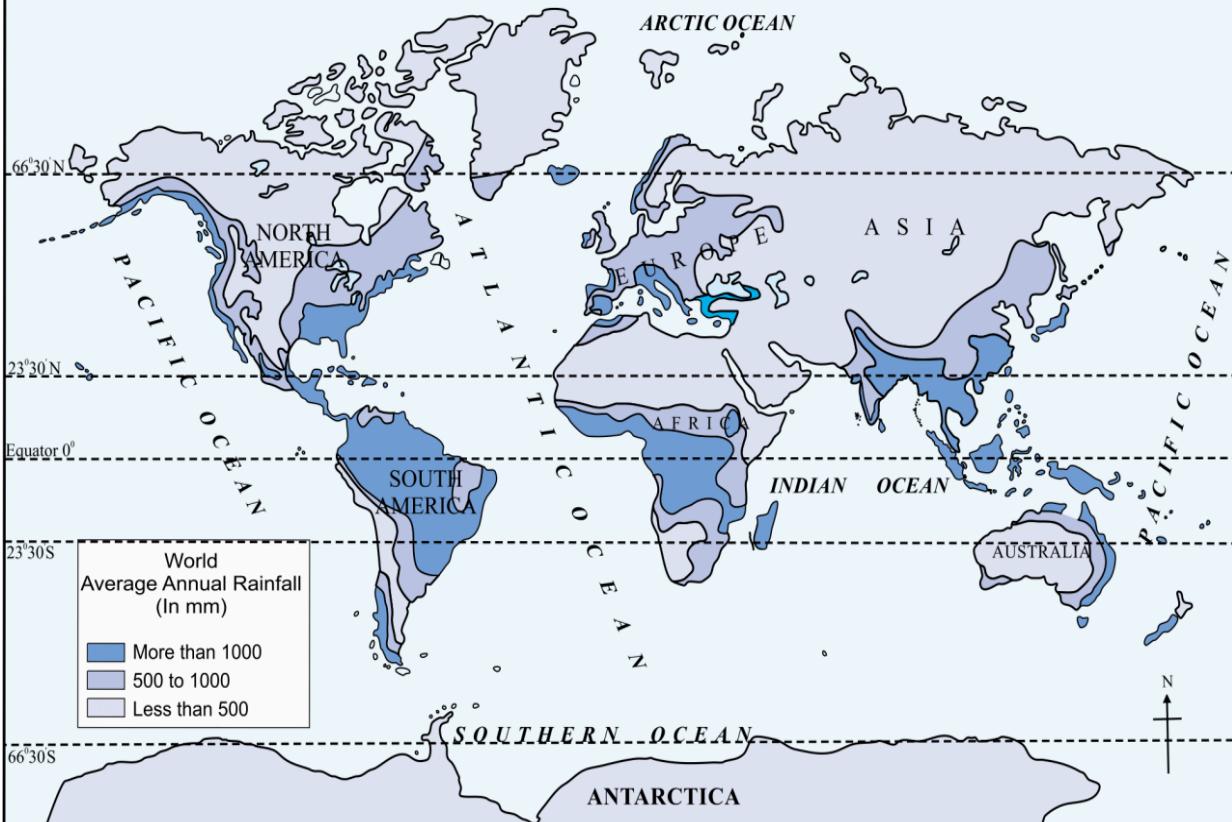
**Ans** i. Orographic rainfall

- ii. Central Maharashtra / Maharashtra Plateau  
 iii. Mumbai - 1000mm

Mumbai is located in the coastal region. Sayadri obstructs the moisture laden wind which is blowing from Arabian Sea.

Hence, the estimated rainfall of Mumbai is 1000mm.

**4** Answer the following questions based on the given map:



- Which region experiences more rainfall?
- What is the reason for low rainfall in central peninsular India?
- Why does the eastern part of central African Continent gets less rainfall than the western part despite its location close to the equator?
- Why does the amount of rainfall in the western part of European continent reduces in the eastern part?

**Ans** i. Equatorial

- Central peninsular plateau falls under the rain shadow region of Sahyadri mountain range (orographic rain)
- Central Africa falls under the equatorial rainfall region. Moisture laden wind enters in Central Africa from the western margin of continent. As wind moves from west to east rainfall goes on decreasing towards the east due to very large and mass. Hence, eastern part central African Continent gets less rainfall than the western part despite its location close to the equator.
- Europe gets high rainfall on the western part because winds coming from Atlantic ocean are obstructed by Alps mountain ranges. After crossing the ranges towards east the moisture in the wind reduces. That's why rain fall reduces towards the eastern part.

**Q.4**

#### Answer in detail/ brief

20

- Which type of rainfall occurs in the most of the world? Why?

- Ans** i. Most of the part of the world is having coastal areas adjoining mountain range.
- India, Australia, eastern coast of North America, Africa, etc. having factors which are conducive to orographic rain.
  - On coming winds from oceanic area are moisture-laden. They are obstructed by the high mountain ranges coming in their way and give rain to the windward side of the mountain. The leeward side of the mountain gets lesser rainfall.

- In what ways does precipitation occur on the earth.

**Ans** Precipitation occurs in 3 forms on the earth i.e. hail stones, snow and rainfall

##### 1. Hail stones :

- Hail is a large frozen raindrop produced by intense thunderstorm, where snow and rain can co-exist in the central updraft.
- As the snowflakes fall, liquid water freezes onto them forming ice pellets that will continue to grow.
- As the ice pellets again and again fall through the cloud, layer of ice is added and the hailstones grow bigger and bigger.
- Once the hail stones become too heavy to be supported by the updraft. They fall out of the cloud on the ground surface.

v. Hails occur in summuns in India, Africa and some parts of South East Asia

**2. Snow :**

- i. When the Temperature in the atmosphere falls below freezing point, water vapour directly turns into snow flakes.
- ii. This is called sublimation
- iii. Precipitation in the solid form of snow is called snow fall.
- iv. Snow fall occurs in high attitudes and temperate regions.

**3. Rainfall :**

The water vapour from the oceanic bodies goes up higher and higher. The vapour condenses and turns into water droplets. When these water droplets became heavy and they fall on the earth surface as rain. Rainfall is of 3 types.

- i. Convective rainfall
- ii. Orographic rainfall
- iii. Cyclonic rainfall

**1. Convective rainfall**

Ans. The air near the oceans also get heated

- i. As it get heated, it becomes lighter and moves upward
- ii. The air cools down and moves upward
- iii. The moisture holding capacity of the cold air is less
- iv. In equatorial areas, such a type of rainfall occurs almost daily in the afternoon.

**2. Orographic Rain :**

Ans. Winds coming from the lakes and the sea are moisture laden.

- i. They are obstructed by the high mountain ranges coming in their way.
- ii. They start going upward along the slope of the mountain the temperature of these winds drop and condensation occurs and rainfall takes place.
- iii. The windward side of the mountain gets more rain the amount of vapour in the air reduces after crossing the mountain and the moisture holding capacity of the air increases.
- iv. The leeward sides of the mountain gets lesser rainfall and hence this area is identified as rain-shadow area.
- v. Most part of the world gets such type of rainfall.

**3. Cyclonic Rain**

- Ans.
- i. Cyclone is the specific air formation when the pressure at an area is less than the surrounding region.
  - ii. Air from the surrounding region comes towards the centre of the cyclone and starts moving upwards.
  - iii. Cyclonic rainfall occurs more in temperate zone and cyclonic area is also quite extensive.
  - iv. Cyclones are common in eastern coast of India and America.

**3** If the condensation occurs close to the earth's surface what type of forms became visible. 3 types of forms are visible near the earth's surface during condensation i.e. fog, dew and frost.

**Ans 1. Fog :**

- i. As the Temperature reduces near the earth's surface the water vapour in the air condenses.
- ii. Water vapour turns into microscopic water particles and float in the air.
- iii. When the density of these droplets in the air increases, fog occurs.

**2. Dew :**

- i. When moisture laden air near the earth's surface come in contact with very cold objects, condensation of the vapour takes place.
- ii. Water vapour turns into small water droplets
- iii. These droplets are found on the leaves or grass, which are called dew drops.

**3. Frost :**

- i. When the Temperature of the air is less than  $0^{\circ}\text{C}$ , the water droplets stuck to the surface of the cold objects freeze.
- ii. These frozen water droplets are called frost.

**4** Comment on the rainfall occurring in the rain shadow area.

**Ans i.** A rain shadow is a dry area on the leeward side of a mountainous area.

- ii. Wind and moist air is drawn by the prevailing winds towards the top of the mountains, where it condenses and precipitates before it crosses the top.

iii. The air, without much moisture left, advances behind the mountains creating a drier side called the rain shadow.

iv. The area of rain shadow region is warm and dry.

v. Here vegetation is found very sparse.

vi. Central Maharashtra is having rain shadow region.

**5** What precautions should be taken while measuring rainfall ?

**Ans** i. The funnel that is used in the rain guage has a specific diameter.

ii. The rain falling in this funnel is collected in a jar fitted in the guage

iii. The collected water is then measured with the help of a measuring jar.

iv. In areas with heavy rainfall, the reading of the rain is taken after every three hours

v. The measuring jar reads in millimetres

vi. The guage is kept in an open ground on a 30 cm high flat mount.

vii. Hence rain water is collected without any obstruction

