Human Activity

The main occupation of people are lumbering during winter. During other season live stock farming and cultivation.

Difference b/w

Equatorial Climate	Tropical Monsoon Climate
1) It prevails in the regions like amazon basin in S. America, Congo basin of Africa, Malaysia Indonesia. etc	1) It prevails in the region like India, Bangladesh, Madagascar Island. in Africa, Mexico in North America etc
2) It is found 0°-10° N & S latitude	2) It is found b/w 10°-30° N & S latitude
3) No change of season occur.	3) Cycle of season is a striking feature.
4) Summer prevails throughout the year	4) Four season are common Summer, winter, autumn, winter
5) Avg summer temp 35°c	5) Avg summer temp 27°-30°c
6) Convectional rainfall occurs.	6) Rainfall is caused by S-W monsoon winds.
7) Trade wind blow in this region.	7) NE & SE trade wind blow in this region.

which cloud brings heavy rainfall. / relief rainfall / cyclonic rainfall / convectional rainfall.
cumulonimbus.

which cloud indicates fair weather.

Cirrus "

Name the low altitudinal cloud.

Nimbus.

Which is called ~~Mackerales sky~~ Mackerel sky

Cirrocumulus.

Explain why convectional rainfall occurs in equatorial region.

The equatorial region experiences convectional rainfall. The rainfall occur every afternoon after 4 o'clock p.m thus it is also called 4o' clock rain.

Due to certain condition the equatorial region experiences convection rainfall ① There is vast waterbodies present in equatorial region. which supply plenty amount of water vapour in the air. As air is mixed up with plenty amt of water vapour the air becomes lighter and moves upward direction.

② Due to the sun's vertical rays, the air is heated up very quickly almost throughout the year thus for this two reasons the moist air start condensation after reaching certain altitude The dense cumulonimbus cloud form which causes heavy rainfall in this region

Explain why rainshadow region in the leeward slope of the mountain

The rainshadow region receives least rainfall which develops in the leeward slope of the mountain. When the moisture bearing wind reaches to the leeward slope lost moisture and thus there is little chance of rainfall in the leeward slope. Moreover as the ~~wind~~ air ~~decends~~ descends along the leeward slope, it becomes unsaturated and can hold more moisture. Thus there is no chance of rain by this air.

What is ~~frontal~~ Frontal rain?

The boundary b/w cold air and warm air in the temparate latitude is known as front. The front is associated with medium/moderate rainfall. Thus the cyclonic rainfall is ~~co~~ also called frontal rain.

How cloud is formed?

Moist and warm air is light. It rises and becomes cooled at higher altitude. So condensation turns water vapour into tiny water droplets or ice particles which float in air. Thus floating particles, are together known as cloud.

Define precipitation.

Precipitation is fall of water through the atmosphere on the earth's surface in the form of rainfall, drizzle, snowfall, sleet or hail etc

What are the different types of rainfall.

Rainfall - fall of bigger water drop from cloud ranging between 0.2 and 6 mm by the gravitational pull of the earth is called rainfall.

Drizzle - Sometimes, tiny water droplets (less than 0.5 mm in diameter) incessantly fall on the earth's surface. This is known as drizzle.

Snowfall - In the upper part of the atmosphere where temperature goes below freezing point, water droplets turn into ice particles to fall over the lofty mountains or in cold climatic regions as snowfall.

Hail - In upper part of atmosphere when water droplets ascend to a high altitude they turn into small grains of ice. They fall to earth like stones are called hail stones.

Sleet - In upper part of atmosphere where water droplets ascend to a high altitude they turn into small grains of ice. When they fall along with rain are called sleet.

Short Note

i) **Roaring Forties** - In Southern hemisphere, westerlies blowing uninterruptedly along 40° latitude is called Roaring Forties.

ii) **Brave west wind** - In Southern hemisphere, westerlies blow uninterruptedly with great velocities in the vast stretches of waterbodies are called Brave west wind.

iii) ~~ITCZ~~ - **Variables** - westerly change their direction and velocity in northern hemisphere are called variables.

iv) ITCZ - Intertropical Convergence Zone.

Write a short note on global warming.

The earth is heated by the small wave solar radiation. Sunrays reflected from the earth's surface to space is in the form of long wave But these long wave terrestrial radiation is absorbed by the green house gases which are increasing day by day in the troposphere. As a result temp of atmosphere increases. This abnormal rise of atmospheric temperature is known as Global warming.

Write a short note on greenhouse effect.

The gases in the atmosphere are transparent to incoming sun light (short wavelength) but they strongly absorb the infrared radiation (long wavelength) which the surface of earth sends back as heat. A part of the heat so absorbed in these atmospheric gases is re-emitted back to the earth's surface. As a result, the surface of the earth and the adjacent atmosphere remains warm This is absolutely essential for the existence of living being on earth. This phenomenon is called the greenhouse effect

Jet stream.

It is a strong flowing ribbon of air that flows in the upper part of the Troposphere. It blows with a speed of minimum 90 km to maximum 500 km/hr

What is the influence of Jet stream on monsoon

With southerly movement of Sub-tropical westerly jet streams in winter, N-E Trade winds becomes stronger and active in India. and intensity of coldness in winter increases with the northerly shifting of tropical easterly jet stream in rainy season, S-W monsoon wind becomes weak and it causes scanty rainfall and drought in India.

Which wind is called 'Doctor'?

Harmanttan

Which wind blows in souther California?

Santa Ana

Which wind is called the snow eater?

Chinook

Short note

i) Doldrum - The belt of equatorial low pressure is termed as 'Doldrums' because there is no horizontal movement of air or wind.

ii) Horse latitudes - The sub-tropical high pressure belt is called horse latitude because in colonial days of sailing ships carrying horses used to sail from Europe to west Indies. On the way, over these regions, because of absence of horizontal wind ship had to unload cargo. So many horses were thrown into the Altantic ocean to make ships lighter to conserve drinking water. thus called horse latitude.

iii) Coriolis force - A force resulting from the rotation of the earth which deflects moving bodies to the right in the northern hemisphere and left to the southern hemisphere. This was named after Gespard de Coriolis, thus called Coriolis force

Local Wind

Wind	Type of wind	Region affected.
1) Loo	hot dry & dusty wind.	Northern plains of India, UP.
2) Andhi	very dry sandstorm	N+W part of India, Rajasthan.
3) Chinook	hot and dry	eastern slope of Rockies, and Prairies in USA and Canada.
4) Fohn.	hot & ~~warm~~ dry wind.	Southern slope of Alps into the Rhine valley.
5) Bora	cold & dry	Adriatic coast of Italy
6) Mistral	Cold & dry	blows from Alps in Europe into the Rhone valley. in Southern France
7) Simoom	hot & dry	Arabian and Saharan desert
8) Sirocco.	warm dry dusty wind.	originates in Arabian and Sahara desert and flow towards Mediterranean sea.
9) Khamsin	hot dry	blow across Egypt and SE Mediterranean area.
10) Harmattan	hot, very dry, dusty wind	N-W Africa, Guinea Coast
11) Pampero	Cold dry	Argentina, Uruguay

Account for the thermal variation of the earth

OR

Discuss the factor for the variation in air temperature of the earth.

The atmosphere is heated mainly by the terrestrial radiation, but the air temperature is not uniform on the earth. following factors are responsible for variation in air temperature.

① Latitude
② Altitude
③ Distance from sea.
④ Slope of land
⑤ Cloud cover
⑥ Winds
⑦ Ocean current
⑧ Natural vegetation
⑨ Soil
⑩ Urbanisation.

① **Latitude** - Temperature decreases from the equator to the poles because.

ⓐ vertical rays travel shorter distance than oblique ray thus the absorbtion of heat by atmosphere element like greenhouse gases (CO_2, methane, carbon monoxide) is more. from oblique rays. thus the oblique ray provides less heating of the surface of the earth and the atmosphere.

ⓑ The vertical rays cover small area and oblique ray spread over vast area. Thus intensity of heat for vertical rays is more. Ex- Kolkata is warmer (latitude - 22°34'11"N) than London (51°30'35"N)

② **Altitude** - In increase in altitude temperature decreases. this is due to lapse rate or Normal ~~rate~~ temp lapse rate which state that temp of air decreases at rate of 0.6°c per 100 m rise.

Ex- Temp of Darjeeling is less than Siliguri (located on plain)

~~③ Distance from sea.~~

③ Distribution of land and water bodies. - In summer water bodies are not so warm

④ Distance from sea - In summer and winter coastal region experiences moderate climate due to the effect of sea breeze. But interior location summer are very hot and winter are very cold. Ex - Digha experiences maritime climate. ~~than Kashmir as it Rajasthan~~.

④ Slope of land - In norther hemisphere southern slope of east-west oriented mountain range receives comparatively more vertical rays because of which it remains warmer than the northern slope of mountain. It happens because of apparent annual movement of sun.

⑤ Cloud cover - Cloudless days are more warmer than cloudy day and ~~eot~~. cloudy nights are more warmer than cloudless nights. Ex - In Rajasthan, temp of cloudless day is nearly 45°c while cloudless night it drops to about 20°c

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Explain the factor affecting air pressure.

The major factor affecting air pressure are

1) Altitude
2) Air temperature
3) Water vapour
4) Earth's rotation.

Altitude - With increasing height of place air pressure decreases. On an average for every 300 m rise there is a fall of air pressure by 34 mb. Ex - Darjeeling have low pressure situated in moutainous region than kolkata. (plain)

Air temperature - When air temp increases air expand and low pressure is developed. ~~Ex~~ and vice-versa. Ex - Equatorial low pressure belt as temp is more because of vertical Sun's ray.

Water Vapour - In rainy season, air is moist that means it contain water vapour so it is light and low pressure is formed and vice versa during winter.

Earth's rotation - Due to rotation of earth, air is thin around the sub polar areas because of the rotation of earth swings bulk of the air towards the Equator.

CLIMATIC REGION	LOCATION	CLIMATIC CHARACTERISTICS	NATURAL VEGETATION
Equatorial Climate.	Parts of Amazon Basin, Guianas in S. America, Zaire Basin and Guinea Coast in Africa In Asia, Malaysia, Indonesia, Papua and New Guinea, Southern philippines and Peninsular part of Thailand. **Inhabitants** - Pygmies in Congo basin belong to Mobuti & Bambuti tribe, Red Indians of upper Amazon, Semang & Malaysia, Andamanese, Jerawas, Onges, Sentinelese of Andaman & Nicobarees & Shompen in Nicobar	1) Receives vertical suns ray ie summer prevails throughout the year. 2) Hot and humid type climate no change of season. 3) Avg summer temp 30°c 4) Very low annual and diarnal range of temp 5) Heavy rainfall avg 200cm - 250cm 6) Receives 4 o'clock rain.	1) Amazon basin is called **Selva**. 2) Evergreen trees are found. Ex - Rose wood, Sandalwood, Mahogony, ebony, Ironwood. 3) Height vary b/w 40-50 m tall with several branches 4) form canopy layer. 5) Small bushes and undergrowth are common. 6) Dangerous reptiles & animals are found
Tropical Monsoon Climate.	In Asia, India, Pakistan, Laos, Bangladesh, Myanmar, Thailand, Vietnam. Of northern Australia, Phillippines, S. China, In Africa Somalia, Madagascar etc	1) hot and humid summer and dry mild winter 2) Avg summer temp 27°c. 3) Avg winter temp 10°-15°c. 4) Avg annual rainfall 150-200 cm. 5) S-W monsoon during summer & N-E monsoon wind influence 6) Norwester cyclone affect the coast of Bay of Bengal.	1) Deciduous forest ~~found~~. Sal, Mahua, Palash Teak, Bamboos in ~~Humid~~ dry deciduous Mango, Jackfruit, Banana, Sundari, Garan, Geora of humid deciduous. 2) Tall & broad leaves 3) Hard wood 4) Used for making furniture
Tropical Hot Desert Climate	Desert of Sahara, Kalahari, Thar, Arab, Sonera of N. America, Atacama of S. America and Australia, Thar desert, Gobi, Taklamakan, Arabian desert, Great Australian Desert	1) Extreme type of climate prevails 2) There is high diurnal and annual range of temp. 3) Summer avg 40°-45°c 4) winter avg 2°-5°c 5) Scanty rainfall avg annual 20-25cm. 6) Sandstorms found	1) Cacti and thorny bushes found. Ex - Coches, thorny bushes, Acacias, Date and Palm.
Mediterranean Climate.	Europe, California, Egypt, Morocco, Libya, Algeria of N. Africa. Italy, Spain, Turkey, Lebanon, portugal in Asia.	1) Warm & dry summer and mild & moist winter 2) Avg summer temp 30-35°c 3) Avg winter temp 10°-15°c 4) Annual avg rainfall 50-75cm 5) Westerlie give rainfall during winter	1) Evergreen coniferous trees are found such as pine, fir, spruce, larch, cedar, palm 2) Broad leaves. 3) leathery. plant and restore water 4) Barks of some plant are thick ex - cork, oak, olive, Eucalyptus

CLIMATIC REGION	LOCATION	CLIMATIC CHARACTERISTICS	NATURAL VEGETATION
Temperate climate (Cold)	Parts of Canada, European, Siberia, Norway Sweden.	1) Warm summer and cold winter. 2) Avg summer temp 10° - 15°c 3) Avg winter temp -22°C. 4) Avg annual rainfall 20-50 cm. 5) Scanty rainfall.	1) Coniferous forest found. 2) Trees are cone bearing 3) Trees are less branches and having soft wood. Ex-
Tundra Climate / Artic Climate.	Northern part of Asia, Europe and N. America. Inhabitants - Samoyeds, Yakuts in Seberia, Laps and Finc in Europe, Eskimos (means raw flesh eater) in Canada Alaska.	1) Shorter summer & prolonged winter (8-9 mon) 2) Avg summer temp 8 to 10°c 3) Avg winter temp 0° to -15°c 4) Snowfall are common.	Scrubby alders, birches, willow, moss, lichen, sedge,