As height increases, atmospheric pressure decreases. This is because of the decrease in the density

of air with increase in height. At low heights, atmospheric pressure increases. Thus altitude and

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Kerala Syllabus 10th Standard Social Science Search ... Solutions Chapter 2 Human Resource Development in India March 15, 2021 by Prasanna **Recent Posts** Kerala State Syllabus 10th Standard Social Science Plus Two Chemistry Notes Chapter 3 Solutions Chapter 2 In search of the Source of Wind Electrochemistry Plus One Chemistry Chapter Wise Question 1. Questions and Answers Chapter 3 Temperature, attitude and humidity are inversely proportional lo atmospheric pressure. Classification of Elements and Justify. Periodicity in Properties Answer: Kerala Syllabus 10th Standard The factors responsiblé for change in atmospheric pressure are temperature, altitude of a place **Chemical Reactions of Organic** Compounds Plus One Chemistry Chapter Wise Questions and Answers Chapter 7 Equilibrium Kerala Syllabus 9th Standard **Chemistry Solutions Chapter 4** Periodic Table

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atmospheric pressure are inversely proportional. Increase in the quantity of water vapour in a unit volume of air leads to a decrease in the atmospheric pressure and vice versa. Thus humidity and atmospheric pressure are inversely proportional. Question 2. Prepare a note on the role of solar energy and rotation of earth in the formation of pressure belts. Answer: The bases for the formation of pressure belts are the difference in the distribution of solar energy and rotation of earth. Sun is not always over the equator due to the inclination of the earth's axis. With the migration of the sun, pressure belts also change position. Low-pressure belt is formed near the equatorial regions because the sun's rays are always vertical here and the amount of solar energy is high. In the polar regions where the sun's rays are always slanting, high-pressure belts are formed. The hot air that rises from the equatorial regions cools and subsides at the subtropical zones (around 30°N and 30°S) due to the rotation of the earth. Subtropical high-pressure belts are formed in this way. The air in the subpolar regions is very cold. But due to the rotation of the earth, these cold air masses are thrown up leading to the formation of subpolar low-pressure belts. Question 3. Describe how Coriolis effect causes the deflection of winds on the basis of the direction of winds mentioned below, a. Trade winds b. Westerlies Answer: Trade winds blow as northeast winds in the Northern Hemisphere and as south-east winds in the Southern Hemisphere. This is due to Coriolis force. Westerlies blow from the southwestern direction to the northeastern direction in the Northern Hemisphere and in the Southern Hemisphere, they blow from the northwestern direction to the southeastern direction. This is due to Coriolis effect. Tropical deserts are situated on the western part of continents: Why? Trade winds are responsible for this. Trade winds which carry water vapour from the oceans cause rainfall in the eastern coasts of the continents. As it moves towards the west, it loses watedr vapour and hence doesn't cause rainfall in the western coasts of the continents. As a result, deserts are formed here. Examples are: Sahara – west of Africa. Atacama – west of South America Thar -west of India Question 4. Write a note on the role of winds in voyages using yachts. Answer: • Identify the direction of the wind and direct the yachts accordingly. • Identify the season in which the winds blow towards the destination and also the nature of • Rely on winds that blow steadily in one direction. Question 5. Identify the factors that influence the atmospheric pressure. What is their relationship with atmospheric pressure? Answer: Factors Temperature Altitude Humidify • Relation: Temperature, altitude and humidity are inversely proportional to atmospheric pressure. Question 6. Observe the picture. Which place in the picture A or B has higher atmospheric pressure? Why? Answer: • B has high atmospheric pressure because it is situated near to sea level. • A has low atmospheric pressure because it is at high altitude. • The atmospheric pressure decreases with altitude. The ratification of air with altitude is the reason for the decrease in atmospheric pressure. Question 7. Why do mountaineers carry oxygen cylinders? Answer: As altitude increases, atmospheric pressure decreases. The pressure decreases at the rate of 1 millibar per an altitude of 10 metres. Thus as altitude increases, there is a decrease in the amount of air. Question 8. Mark H for high pressure and L for low pressure. Write the reason for the difference in atmospheric pressure. Answer: • The first picture – L, second picture – H • As temperature increases, atmospheric pres¬sure decreases. As temperature decreases, atmospheric pressure increases. • During day time, the temperature is more. So air gets heated up, expands and rises resulting in low pressure. • During night, the temperature is less. Cool air descends which results in high pressure. Question 9. Compared to colder regions, the tropical regions experience low atmospheric pressure. Why? Answer: • Variation in temperature • In the tropical regions, sun rays are available in plenty. As a result, temperature increases and atmospheric pressure decreases. So tropical regions experience low atmospheric pressure. Question 10. High humidity means low pressure. Explain. • The quantity of water present in the atmosphere is called humidity. If the quantity of water vapour is more in a unit volume of air, atmospheric pressure will be less. • When there is an increase in the water content in air, its density decreases. Less density of air means low pressure. Question 11. How does change in season lead to change in atmospheric pressure? Answer: • Change in season leads to change in the distribution of temperature. • Change in season also brings about change in humidity. • Change in temperature and humidity lead to change in atmospheric pressure. Question 12. Write a note on the classification of pressure belts. Answer: • The atmospheric pressure is uniform between certain latitudes. Based on that, the earth's

Equatorial low-pressure belt Between 5°N and 5°S Subtropical high-pressure belts 30°N,30°S Subpolar low-pressure belts 60°N,60°S Polar high-pressure belts 90°N,90°S. Question 15. How does pressure gradient influence the speed of wind1? Answer: The pressure gradient is said to be steeper when the pressure difference is more. In such places, the speed of wind will also be more. Question 16. In which of these situations, will the speed of wind be higher? Why? Answer: • In picture A, the distance between the isobars is less or they are seen closer. This leads to a steep pressure gradient. Due to this, the wind blowing here will be stronger. • In picture B, the distance between the isobars is greater. Because of that, the wind blowing will be of less strength. • Pressure gradient force is determined by the distance between the pressure lines.

surface is divided into different pressure belts. They are known as global pressure belts.

• Difference in the amount of sun rays received over different parts of the earth cause the

If the earth did not rotate, would there have been low pressure in the subpolar region?

No. Subpolar low pressure belts are formed due to the rotation of the earth. As these zones are

close to the poles, the air is colder here. But the air is thrown up due to the rotation of the earth.

Complete the table by incorporating the names of different pressure belts and their latitudinal

Latitudinal extent

Latitudinal extent

formation of different pressure belts,

• Polar high pressure belts – 90°N and 90°S.

Pressure belts

Pressure belts

Friction influences the speed and direction of winds. Explain.

Northern Hemisphere and to the left in the Southern Hemisphere?

• Less friction means more speed of wind.

wind will be less in those places.

• The reason for friction is the objects that prevent the free movement of wind.

• The speed of wind will be high over ocean surfaces and level lands as the friction is less.

• Friction is more along difficult terrains and places with dense forest cover. The speed of

Observe picture. As stated by Coriolis's force, what is. the basis for the deflection to the right in the

Equatorial low pressure belt – between 5° N and 5° S

• Subpolar low pressure belts – about 60°N and 60°S.

• Subtropical high pressure belts – about 30°N and 30°S

As a result, low pressure belts are formed in the subpolar regions.

• The pressure belts are

Question 13.

Question 14.

extent.

Answer:

Question 17.

Question 18.

Answer:

Answer:

Answer:
Rotation of the earth.
The speed of rotation of earth decreases from equator to the poles.
Centrifugal force created due to the rotation of the earth.

Question 19.
The winds developed between the global pressure belts can be generally called planetary winds.
Observe the picture and note the planetary winds.
Answer:

Observe figure 2.9. Find out the direction and name of trade winds in the Southern Hemi-sphere.

What could be the reasons for trade winds blowing from south-east and northeast directions?

Trade winds blow from subtropical high-pressure belts to equatorial low-pressure belt.
As the trade winds get deflected due to Coriolis force and blow towards west, they blow from south-east and northeast directions.
Question 22.
Find out the direction of westerlies in both the hemispheres.
Answer:
Westerlies blow from subtropical high pressure belts to subpolar low pressure belts.
In the Northern Hemisphere, westerlies blow from the south western direction to the north eastern direction. In the Southern Hemisphere, they blow from north western direction to the southeastern direction.

Find out the relevance of this statement.

Trade winds

Polar easterlies.

• Direction – Southeast

Name – Southeast trade winds.

Westerlies

Question 20.

Question 21.

Question 23.

Answer:

Answer:

Question 26.

Answer:

Ans:

Answer:

Westerlies blow from subtropical high pressure belts to subpolar low pressure belts.
Due to Coriolis force, winds get deflected and blow towards east. Thus the source of origin becomes west.

Question 24.

The factors responsible for the formation of monsoon winds are apparent movement of the Sun,

Planetary winds are named after their source of origin. The direction of westerlies is from the west.

Vertical rays of the sun are received between 23 1/2°N′ and 23 1/2°S.
With the shift in pressure belts, South east trade winds cross the equator, deflect due to Coriolis effect and blow as south west monsoon winds.
North east trade winds become north east monsoon winds.

Question 25.
Monsoon does not occur in the Northern European region. Why?
Answer:
The global winds of North European region are not blowing from oceans. The difference in the temperature of land and sea is not explicit here as in the monsoon regions.

Write the reason for the occurrence of land breeze and sea breeze.

occurs during the night and blows towards the valley.

• Loo: Hot dry winds that blow in the North Indian plains.

Local difference in pressure is the reason for local winds.

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28. Local winds blow locally and are not so powerful. Find examples for local winds.

Explain the formation and features of monsoon winds.

The reaction of land and sea to sun's heat is not uniform.
The land heats up quickly during day time and cools quickly at night.
The sea gets heated up slowly during day and can retain the heat for a longer period of time.
The atmospheric temperature of day and night is different.
Question 27.
Write the basis for the formation of mountain breeze and valley breeze.
Answer:
Difference in temperature during day and night on the top and bottom of mountains.
Valley breeze occurs during the day and blows upslope from the valley. Mountain breeze

Chinook: Hot dry winds that blow over the eastern slopes of the Rocky mountains.
Foehn: Hot dry winds that blow towards the southern valleys of the Alps.
Harmattan: Hot dry winds that blow from the Sahara desert towards West Africa.
Mangoshowers: Local winds that blow in South India during summer and give rainfall in Kerala and Karnataka coast. They help in the fall of ripe mangoes on its arrival.
Question 29.
Complete the flowchart

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Answer:

Class 10

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