

ForumIAS

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Prelims Marathon

03rd to 09th October, 2022

HISTORY
ECONOMICS
POLITY
SCIENCE AND TECHNOLOGY
GEOGRAPHY AND ENVIRONMENT

FORUMIAS



Geography

Q.1) Who among the following scientist proposed the nebular hypothesis?

- a) Aristotle
- b) Plato
- c) Immanuel Kant
- d) Socrates

ANS: C

Explanation: A large number of hypotheses were put forth by different philosophers and scientists regarding the origin of the earth.

- One of the earlier and popular arguments was by German philosopher Immanuel Kant. Mathematician Laplace revised it in 1796. It is known as Nebular Hypothesis.
- The hypothesis considered that the planets were formed out of a cloud of material associated with a youthful sun, which was slowly rotating.

Source: NCERT - Fundamental of Physical Geography

Q.2) Which of the following theory states that the universe began to cool down sufficiently in order to allow the formation of particles that would later become atoms after its initial phase of expansion?

- a) Big Bang Theory
- b) Nebular Hypothesis
- c) Sea floor spreading theory
- d) Continental plates theory
- e)

ANS: A

Explanation: The Big Bang Theory states that the universe began to cool down sufficiently in order to allow the formation of particles that would later become atoms after its initial phase of expansion.

- Primordial elements – Hydrogen, Helium, and Lithium – condensed through gravity that formed early stars and galaxies.
- In simpler terms, it can be stated that the universe inflated into the cosmic system 13.8 billion years ago to form the galaxy and the solar system as we know it.

Source: NCERT - Fundamental of Physical Geography

Q.3) A galaxy starts to form by accumulation of which of the following gas in the form of a very large cloud called nebula?

- a) Nitrogen
- b) Carbon Dioxide
- c) Hydrogen
- d) Argon

ANS: C

Explanation: The distribution of matter and energy was not even in the early universe.

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- These initial density differences gave rise to differences in gravitational forces and it caused the matter to get drawn together.
- These formed the bases for development of galaxies. A galaxy contains a large number of stars. Galaxies spread over vast distances that are measured in thousands of light-years.
- The diameters of individual galaxies range from 80,000-150,000 light years. A galaxy starts to form by accumulation of hydrogen gas in the form of a very large cloud called nebula.
- Eventually, growing nebula develops localised clumps of gas. These clumps continue to grow into even denser gaseous bodies, giving rise to formation of stars.
- The formation of stars is believed to have taken place some 5-6 billion years ago.

Source: NCERT - Fundamental of Physical Geography

Q.4) Which of the following planet is NOT a terrestrial Planet?

- a) Earth
- b) Mars
- c) Mercury
- d) Jupiter

ANS: D

Explanation: Our solar system consists of the sun (the star), 8 planets, 63 moons, millions of smaller bodies like asteroids and comets and huge quantity of dust-grains and gases.

- Out of the eight planets, mercury, venus, earth and mars are called as the inner planets as they lie between the sun and the belt of asteroids the other four planets are called the outer planets.
- Alternatively, the first four are called Terrestrial, meaning earth-like as they are made up of rock and metals, and have relatively high densities.

Source: NCERT - Fundamental of Physical Geography

Q.5) Consider the following statements:

1. The terrestrial planets are low density planets as compared with gaseous planets.
2. The terrestrial planets are smaller and their lower gravity could not hold the escaping gases.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: Out of the eight planets, mercury, venus, earth and mars are called as the inner planets as they lie between the sun and the belt of asteroids the other four planets are called the outer planets.

Alternatively, the first four are called Terrestrial, meaning earth-like as they are made up of rock and metals, and have relatively high densities.

The difference between terrestrial and jovian planets can be attributed to the following conditions:

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- (i) The terrestrial planets were formed in the close vicinity of the parent star where it was too warm for gases to condense to solid particles. Jovian planets were formed at quite a distant location.
- (ii) The solar wind was most intense nearer the sun; so, it blew off lots of gas and dust from the terrestrial planets. The solar winds were not all that intense to cause similar removal of gases from the Jovian planets.
- (iii) The terrestrial planets are smaller and their lower gravity could not hold the escaping gases.

Source: NCERT - Fundamental of Physical Geography

Q.6) Which of the following planet has least natural satellites (moon) revolving around them?

- a) Venus
- b) Earth
- c) Jupiter
- d) Saturn

ANS: A

Explanation:

The Solar System

	<i>Mercury</i>	<i>Venus</i>	<i>Earth</i>	<i>Mars</i>	<i>Jupiter</i>	<i>Saturn</i>	<i>Uranus</i>	<i>Neptune</i>
Distance*	0.387	0.723	1.000	1.524	5.203	9.539	19.182	30.058
Density@	5.44	5.245	5.517	3.945	1.33	0.70	1.17	1.66
Radius#	0.383	0.949	1.000	0.533	11.19	9.460	4.11	3.88
Satellites	0	0	1	2	about 53	about 53	about 27	13

* Distance from the sun in astronomical unit i.e. average mean distance of the earth is 149,598,000 km = 1 @ Density in gm/cm³

Radius: Equatorial radius 6378.137 km = 1

Source: <http://planetarynames.wr.usgs.gov/page/planets>

Source: NCERT - Fundamental of Physical Geography

Q.7) "Homo sapiens" are belongs to which of the following epoch?

- a) Paleocene
- b) Eocene
- c) Oligocene
- d) Pleistocene

ANS: D

Explanation:

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Geological Time Scale

<i>Era</i>	<i>Period</i>	<i>Epoch</i>	<i>Age/ Years Before Present</i>	<i>Life/ Major Events</i>
Cainozoic (From 65 million years to the present times)	Quaternary	Holocene	0 - 10,000	Modern Man
		Pleistocene	10,000 - 2 million	Homo Sapiens
	Tertiary	Pliocene	2 - 5 million	Early Human Ancestor
		Miocene	5 - 24 million	Ape: Flowering Plants and Trees
		Oligocene	24 - 37 million	Anthropoid Ape
Mesozoic 65 - 245 Million Mammals	Cretaceous	Eocene	37 - 58 Million	Rabbits and Hare
		Palaeocene	57 - 65 Million	Small Mammals : Rats - Mice
Palaeozoic 245 - 570 Million	Permian	Carboniferous	65 - 144 Million	Extinction of Dinosaurs
			144 - 208 Million	Age of Dinosaurs
	208 - 245 Million	Frogs and turtles		
	Devonian	Silurian	245 - 286 Million	Reptile dominate-replace amphibians
			286 - 360 Million	First Reptiles:
	Ordovician	Cambrian	360 - 408 Million	Vertebrates: Coal beds
			408 - 438 Million	Amphibians
438 - 505 Million	First trace of life on land: Plants			
505 - 570 Million	First Fish			
	No terrestrial Life : Marine Invertebrate			

Source: NCERT - Fundamental of Physical Geography

Q.8) Which of the following sequence is correct with respect to geological time scale?

- a) Eon – Epoch – Period – Era
- b) Eon – Epoch – Era – Period
- c) Era – Eon – Epoch – Period
- d) Eon – Era – Period – Epoch

ANS: D

Explanation:

Geological Time Scale

<i>Eons</i>	<i>Era</i>	<i>Period</i>	<i>Epoch</i>	<i>Age/ Years Before Present</i>	<i>Life/ Major Events</i>
	Cainozoic (From 65 million years to the present times)	Quaternary	Holocene	0 - 10,000	Modern Man
			Pleistocene	10,000 - 2 million	Homo Sapiens
		Tertiary	Pliocene	2 - 5 million	Early Human Ancestor
			Miocene	5 - 24 million	Ape: Flowering Plants and Trees
			Oligocene	24 - 37 million	Anthropoid Ape
	Mesozoic 65 - 245 Million Mammals	Cretaceous	Eocene	37 - 58 Million	Rabbits and Hare
			Palaeocene	57 - 65 Million	Small Mammals : Rats - Mice
	Palaeozoic 245 - 570 Million	Permian	Carboniferous	65 - 144 Million	Extinction of Dinosaurs
				144 - 208 Million	Age of Dinosaurs
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		Ordovician	Cambrian	360 - 408 Million	Vertebrates: Coal beds
408 - 438 Million	Amphibians				
438 - 505 Million	First trace of life on land: Plants				
505 - 570 Million	First Fish				
	No terrestrial Life : Marine Invertebrate				

Source: NCERT - Fundamental of Physical Geography

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Q.9) The “Giant Dinosaurs” are belongs to which of the following Era?

- a) Cianozoic
- b) Mesozoic
- c) Paleozoic
- d) Pre Cambrian

ANS: B

Explanation:

Geological Time Scale

<i>Era</i>	<i>Period</i>	<i>Epoch</i>	<i>Age/ Years Before Present</i>	<i>Life/ Major Events</i>
Cainozoic (From 65 million years to the present times)	Quaternary	Holocene	0 - 10,000	Modern Man
		Pleistocene	10,000 - 2 million	Homo Sapiens
	Tertiary	Pliocene	2 - 5 million	Early Human Ancestor
		Miocene	5 - 24 million	Ape: Flowering Plants and Trees
		Oligocene	24 - 37 million	Anthropoid Ape
Mesozoic 65 - 245 Million Mammals	Cretaceous	Eocene	37 - 58 Million	Rabbits and Hare
		Palaeocene	57 - 65 Million	Small Mammals : Rats – Mice
	Jurassic	144 - 208 Million	Extinction of Dinosaurs	
Palaeozoic 245 - 570 Million	Triassic	208 - 245 Million	Age of Dinosaurs	
		245 - 286 Million	Frogs and turtles	
	Permian	245 - 286 Million	Reptile dominate-replace amphibians	
	Carboniferous	286 - 360 Million	First Reptiles: Vertebrates: Coal beds	
	Devonian	360 - 408 Million	Amphibians	
Silurian	408 - 438 Million	First trace of life on land: Plants		
Ordovician	438 - 505 Million	First Fish		
	Cambrian	505 - 570 Million	No terrestrial Life : Marine Invertebrate	

Source: NCERT - Fundamental of Physical Geography

Q.10) Which of the following planet is the least density planet?

- a) Earth
- b) Venus
- c) Jupiter
- d) Saturn

ANS: D

Explanation:

The Solar System

	<i>Mercury</i>	<i>Venus</i>	<i>Earth</i>	<i>Mars</i>	<i>Jupiter</i>	<i>Saturn</i>	<i>Uranus</i>	<i>Neptune</i>
Distance*	0.387	0.723	1.000	1.524	5.203	9.539	19.182	30.058
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Source: <http://ptanetarynames.wr.usgs.gov/page/planets>

Source: NCERT - Fundamental of Physical Geography

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Geography

Q.1) Which of the following is an indirect source of knowing interiors of the earth?

- a) Deep Ocean Drilling
- b) Volcanic eruptions
- c) Seismic activity
- d) Mining

ANS: C

Explanation: Most of our knowledge about the interior of the earth is largely based on estimates and inferences. Yet, a part of the information is obtained through direct observations and analysis of materials.

- The most easily available solid earth material is surface rock or the rocks we get from mining areas. Gold mines in South Africa are as deep as 3 - 4 km.
- Scientists world over are working on two major projects such as “Deep Ocean Drilling Project” and “Integrated Ocean Drilling Project”. The deepest drill at Kola, in Arctic Ocean, has so far reached a depth of 12 km.
- Volcanic eruption forms another source of obtaining direct information. As and when the molten material (magma) is thrown onto the surface of the earth, during volcanic eruption it becomes available for laboratory analysis.
- The indirect sources include gravitation, magnetic field, and seismic activity.

Source: NCERT - Fundamental of Physical Geography

Q.2) Consider the following statements:

1. The gravitation force (g) is same at different latitudes on the surface of the earth.
2. Gravity anomalies give us information about the distribution of mass of the material in the crust of the earth.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: The gravity values also differ according to the mass of material. The uneven distribution of mass of material within the earth influences this value.

- The reading of the gravity at different places is influenced by many other factors.
- These readings differ from the expected values. Such a difference is called gravity anomaly.
- Gravity anomalies give us information about the distribution of mass of the material in the crust of the earth.

Source: NCERT - Fundamental of Physical Geography

Q.3) Consider the following statements regarding Earthquake Waves:

1. The velocity of earthquake waves is higher in low density materials.
2. The direction of waves also changes when they coming across materials with different densities.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: Earthquake waves are basically of two types — body waves and surface waves.

- Body waves are generated due to the release of energy at the focus and move in all directions travelling through the body of the earth. Hence, the name body waves.
- The body waves interact with the surface rocks and generate new set of waves called surface waves. These waves move along the surface.
- The velocity of waves changes as they travel through materials with different densities. The denser the material, the higher is the velocity.
- Their direction also changes as they reflect or refract when coming across materials with different densities.

Source: NCERT - Fundamental of Physical Geography

Q.4) Consider the following statements:

1. Secondary waves are travel only through solid materials.
2. The magnitude scale is known as the Richter scale.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: There are two types of body waves. They are called P and S-waves. P-waves move faster and are the first to arrive at the surface. These are also called 'primary waves'.

- The P-waves are similar to sound waves. They travel through gaseous, liquid and solid materials. S-waves arrive at the surface with some time lag. These are called secondary waves.
- An important fact about S-waves is that they can travel only through solid materials.
- The earthquake events are scaled either according to the magnitude or intensity of the shock. The magnitude scale is known as the Richter scale.
- The magnitude relates to the energy released during the quake. The magnitude is expressed in numbers, 0-10.
- The intensity scale is named after Mercalli, an Italian seismologist. The intensity scale takes into account the visible damage caused by the event. The range of intensity scale is from 1-12.

Source: NCERT - Fundamental of Physical Geography

Q.5) Consider the following statements:

1. The Oceanic crust is thicker than the Continental crust.
2. Asthenosphere is located in Mantle.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: The Crust is the outermost solid part of the earth. It is brittle in nature. The thickness of the crust varies under the oceanic and continental areas.

- Oceanic crust is thinner as compared to the continental crust. The mean thickness of oceanic crust is 5 km whereas that of the continental is around 30 km.
- The continental crust is thicker in the areas of major mountain systems. It is as much as 70 km thick in the Himalayan region.
- The portion of the interior beyond the crust is called the mantle. The mantle extends from Moho's discontinuity to a depth of 2,900 km. The upper portion of the mantle is called asthenosphere.

Source: NCERT - Fundamental of Physical Geography

Q.6) The Hawaiian volcanoes are the best examples of which type of volcanoes?

- a) Shield Volcanoes
- b) Composite Volcanoes
- c) Caldera
- d) Flood Basalt Provinces

ANS: A

Explanation: Barring the basalt flows, the shield volcanoes are the largest of all the volcanoes on the earth. The Hawaiian volcanoes are the most famous examples.

- These volcanoes are mostly made up of basalt, a type of lava that is very fluid when erupted. For this reason, these volcanoes are not steep.
- They become explosive if somehow water gets into the vent; otherwise, they are characterised by low-explosivity.
- The upcoming lava moves in the form of a fountain and throws out the cone at the top of the vent and develops into cinder cone.

Source: NCERT - Fundamental of Physical Geography

Q.7) The term Jig - Saw - Fit is related to which of the following?

- a) Global Warming
- b) Geological time scale
- c) Continental drift
- d) Volcano distribution

ANS: C

Explanation: Evidence in Support of the Continental Drift:

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The Matching of Continents (Jig-Saw-Fit): The shorelines of Africa and South America facing each other have a remarkable and unmistakable match.

- It may be noted that a map produced using a computer programme to find the best fit of the Atlantic margin was presented by Bullard in 1964.
- It proved to be quite perfect. The match was tried at 1,000- fathom line instead of the present shoreline.

Source: NCERT - Fundamental of Physical Geography

Q.8) Consider the following statements:

1. Continental Margins form the transition between continental shores and deep-sea basins.
2. Abyssal Plains are extensive plains of Savannah region.

Which of the statements given above is/are NOT correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: Continental Margins: These form the transition between continental shores and deep-sea basins.

- They include continental shelf, continental slope, continental rise and deep-oceanic trenches.
- Of these, the deep-oceanic trenches are the areas which are of considerable interest in so far as the distribution of oceans and continents is concerned.

Abyssal Plains:

- These are extensive plains that lie between the continental margins and mid-oceanic ridges.
- The abyssal plains are the areas where the continental sediments that move beyond the margins get deposited.

Source: NCERT - Fundamental of Physical Geography

Q.9) Which of the following is NOT a minor tectonic plate?

- a) Pacific plate
- b) Cocos plate
- c) Nazca plate
- d) Arabian plate

ANS: A

Explanation: A tectonic plate (also called lithospheric plate) is a massive, irregularly-shaped slab of solid rock, generally composed of both continental and oceanic lithosphere. Plates move horizontally over the asthenosphere as rigid units.

- The lithosphere includes the crust and top mantle with its thickness range varying between 5 and 100 km in oceanic parts and about 200 km in the continental areas.
- A plate may be referred to as the continental plate or oceanic plate depending on which of the two occupy a larger portion of the plate.
- Pacific plate is largely an oceanic plate whereas the Eurasian plate may be called a continental plate.

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- The theory of plate tectonics proposes that the earth's lithosphere is divided into seven major and some minor plates.

Some important minor plates are listed below:

- (i) Cocos plate : Between Central America and Pacific plate
- (ii) Nazca plate : Between South America and Pacific plate
- (iii) Arabian plate : Mostly the Saudi Arabian landmass
- (iv) Philippine plate : Between the Asiatic and Pacific plate

Source: NCERT - Fundamental of Physical Geography

Q.10) Which one of the following is the type of plate boundary of the Indian plate along the Himalayan Mountains?

- a) Ocean – Continental plate convergence
- b) Divergent boundary
- c) Transform boundary
- d) Continent – Continent plate convergence

ANS: D

Explanation: The Indian plate includes Peninsular India and the Australian continental portions.

The subduction zone along the Himalayas forms the northern plate boundary in the form of continent— continent convergence.

Source: NCERT - Fundamental of Physical Geography

Geography

Q.1) Which of the following mineral is least hard?

- a) Gypsum
- b) Fluorite
- c) Feldspar
- d) Quartz

ANS: A

Explanation: Hardness — relative resistance being scratched; ten minerals are selected to measure the degree of hardness from 1-10.

They are:

- 1. Talc;
- 2. Gypsum;
- 3. Calcite;
- 4. Fluorite;
- 5. Apatite;
- 6. Feldspar;
- 7. Quartz;
- 8. Topaz;
- 9. Corundum;
- 10. Diamond.

Compared to this for example, a fingernail is 2.5 and glass or knife blade is 5.5.

Source: NCERT - Fundamental of Physical Geography

Q.2) Consider the following statements regarding rocks:

- 1. Rock is an aggregate of one or more minerals.
- 2. Rocks have definite composition of mineral constituents.
- 3. Petrology is study of rocks.

Choose the correct answer from below given codes:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 3 only

ANS: C

Explanation: The earth's crust is composed of rocks. A rock is an aggregate of one or more minerals.

- Rock may be hard or soft and in varied colours. For example, granite is hard, soapstone is soft. Gabbro is black and quartzite can be milky white.
- Rocks do not have definite composition of mineral constituents. Feldspar and quartz are the most common minerals found in rocks.
- Petrology is science of rocks. A petrologist studies rocks in all their aspects viz., mineral composition, texture, structure, origin, occurrence, alteration and relationship with other rocks.

Source: NCERT - Fundamental of Physical Geography

Q.3) Consider the following statements:

1. The rocks which are formed due to cooling of magma and lava are called igneous rocks.
2. Conglomerate and halite are best examples of igneous rocks.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: As igneous rocks form out of magma and lava from the interior of the earth, they are known as primary rocks.

- The igneous rocks (Ignis – in Latin means ‘Fire’) are formed when magma cools and solidifies. You already know what magma is.
- When magma in its upward movement cools and turns into solid form it is called igneous rock.
- The process of cooling and solidification can happen in the earth’s crust or on the surface of the earth. Igneous rocks are classified based on texture.
- Texture depends upon size and arrangement of grains or other physical conditions of the materials. If molten material is cooled slowly at great depths, mineral grains may be very large.
- Sudden cooling (at the surface) results in small and smooth grains. Intermediate conditions of cooling would result in intermediate sizes of grains making up igneous rocks.
- Granite, gabbro, pegmatite, basalt, volcanic breccia and tuff are some of the examples of igneous rocks.

Source: NCERT - Fundamental of Physical Geography

Q.4) The process of lithification and formation of layered structure is found in which of the following rocks?

- a) Igneous rocks
- b) Sedimentary rocks
- c) Metamorphic rocks
- d) Both B and C

ANS: B

Explanation: The word ‘sedimentary’ is derived from the Latin word sedimentum, which means settling. Rocks (igneous, sedimentary and metamorphic) of the earth’s surface are exposed to denudational agents, and are broken up into various sizes of fragments.

- Such fragments are transported by different exogenous agencies and deposited. These deposits through compaction turn into rocks. This process is called lithification.
- In many sedimentary rocks, the layers of deposits retain their characteristics even after lithification. Hence, we see a number of layers of varying thickness in sedimentary rocks like sandstone, shale etc.

Source: NCERT - Fundamental of Physical Geography

Q.5) The phenomenon of wearing down of relief variations of the surface of the earth through erosion is known as?

- a) Gradation
- b) Foliation
- c) Lithification
- d) Orogenic process

ANS: A

Explanation: The earth's surface is being continuously subjected to by external forces originating within the earth's atmosphere and by internal forces from within the earth.

- The external forces are known as exogenic forces and the internal forces are known as endogenic forces.
- The actions of exogenic forces result in wearing down (degradation) of relief/elevations and filling up (aggradation) of basins/ depressions, on the earth's surface.
- The phenomenon of wearing down of relief variations of the surface of the earth through erosion is known as gradation.

Source: NCERT - Fundamental of Physical Geography

Q.6) "Natural levees and point bars" is associated with which of the following depositional landforms?

- a) Deltas
- b) Alluvial fans
- c) Volcanoes
- d) Flood plains

ANS: D

Explanation: Natural levees and point bars are some of the important landforms found associated with floodplains.

- Natural levees are found along the banks of large rivers. They are low, linear and parallel ridges of coarse deposits along the banks of rivers, quite often cut into individual mounds.
- Point bars are also known as meander bars. They are found on the concave side of meanders of large rivers and are sediments deposited in a linear fashion by flowing waters along the bank.
- They are almost uniform in profile and in width and contain mixed sizes of sediments.

Source: NCERT - Fundamental of Physical Geography

Q.7) Consider the following statements regarding biodiversity:

1. Biodiversity is richer in Polar Regions.
2. In Tropical regions one finds larger and larger populations of fewer and fewer species.

Which of the statements given above is/are NOT correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: Biodiversity is a system in constant evolution, from a view point of species, as well as from view point of an individual organism.

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- The average half-life of a species is estimated at between one and four million years, and 99 per cent of the species that have ever lived on the earth are today extinct.
- Biodiversity is not found evenly on the earth. It is consistently richer in the tropics.
- As one approaches the Polar Regions, one finds larger and larger populations of fewer and fewer species.

Source: NCERT - Fundamental of Physical Geography

Q.8) Which of the following pair/pairs is/are correctly matched?

1. Endangered Species – the species which are likely to be in danger of extinction in near future if the factors threatening to their extinction continue.
2. Vulnerable Species – those species which are in danger of extinction.
3. Rare Species – the species are very small in the world.

Choose the correct answer from below given codes:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 3 only

ANS: D

Explanation: The International Union of Conservation of Nature and Natural Resources (IUCN) has classified the threatened species of plants and animals into three categories for the purpose of their conservation.

Endangered Species: It includes those species which are in danger of extinction. The IUCN publishes information about endangered species world-wide as the Red List of threatened species.

Vulnerable Species: This includes the species which are likely to be in danger of extinction in near future if the factors threatening to their extinction continue. Survival of these species is not assured as their population has reduced greatly.

Rare Species: Population of these species is very small in the world; they are confined to limited areas or thinly scattered over a wider area.

Source: NCERT - Fundamental of Physical Geography

Q.9) “Humboldtia decurrens Bedd” is endemic to which of the following region?

- a) Western Ghats
- b) North Eastern Himalayas
- c) Northern Himalayas
- d) Dandakaranya region

ANS: A

Explanation: Humboldtia decurrens Bedd — highly rare endemic tree of Southern Western Ghats (India).



Humboldtia decurrens Bedd — highly rare endemic tree of Southern Western Ghats (India)

Source: NCERT - Fundamental of Physical Geography

Q.10) Consider the following statements:

1. An orogenic process involves mountain building through folding and affecting long and narrow belts of the earth's crust.
2. An epeirogenic process involves uplift of large parts of the earth's crust.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: All processes that move, elevate or build up portions of the earth's crust come under diastrophism.

They include: (i) orogenic processes involving mountain building through severe folding and affecting long and narrow belts of the earth's crust; (ii) epeirogenic processes involving uplift or warping of large parts of the earth's crust; (iii) earthquakes involving local relatively minor movements; (iv) plate tectonics involving horizontal movements of crustal plates.

- In the process of orogeny, the crust is severely deformed into folds. Due to epeirogeny, there may be simple deformation.
- Orogeny is a mountain building process whereas epeirogeny is continental building process. Through the processes of orogeny, epeirogeny, earthquakes and plate tectonics, there can be faulting and fracturing of the crust.
- All these processes cause pressure, volume and temperature (PVT) changes which in turn induce metamorphism of rocks.

Source: NCERT - Fundamental of Physical Geography

Geography - Climatology

Q.1) Consider the following statements:

1. Carbon dioxide is transparent to the incoming solar radiation and opaque to the outgoing terrestrial radiation.
2. Most of the mass of the atmosphere is confined to the height of 32 km from the earth's surface.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: The air is an integral part of the earth's mass and 99 per cent of the total mass of the atmosphere is confined to the height of 32 km from the earth's surface.

- The air is colourless and odourless and can be felt only when it blows as wind.
- Carbon dioxide is meteorologically a very important gas as it is transparent to the incoming solar radiation but opaque to the outgoing terrestrial radiation.
- It absorbs a part of terrestrial radiation and reflects back some part of it towards the earth's surface.

Source: NCERT - Fundamental of Physical Geography

Q.2) Consider the following statements:

1. The volume of water vapour is higher in cold and polar regions.
2. The concentration of dust particles is higher in subtropical and temperate regions due to presence of dry winds.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: Water vapour is also a variable gas in the atmosphere, which decreases with altitude.

- In the warm and wet tropics, it may account for four per cent of the air by volume, while in the dry and cold areas of desert and Polar Regions; it may be less than one per cent of the air. Water vapour also decreases from the equator towards the poles.
- Atmosphere has a sufficient capacity to keep small solid particles, which may originate from different sources and include sea salts, fine soil, smoke-soot, ash, pollen, dust and disintegrated particles of meteors.
- Dust particles are generally concentrated in the lower layers of the atmosphere; yet, convectional air currents may transport them to great heights.

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- The higher concentration of dust particles is found in subtropical and temperate regions due to dry winds in comparison to equatorial and Polar Regions.
- Dust and salt particles act as hygroscopic nuclei around which water vapour condenses to produce clouds.

Source: NCERT - Fundamental of Physical Geography

Q.3) Consider the following statements regarding Troposphere:

1. The height of troposphere is same at poles and equator.
2. The thickness of troposphere is highest at mid latitudes.
3. Most of the changes in climate and weather take place in troposphere.

Choose the correct answer from below given codes:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 3 only

ANS: D

Explanation: The troposphere is the lowermost layer of the atmosphere. Its average height is 13 km and extends roughly to a height of 8 km near the poles and about 18 km at the equator.

- Thickness of the troposphere is greatest at the equator because heat is transported to great heights by strong convectional currents. This layer contains dust particles and water vapour.
- All changes in climate and weather take place in this layer. The temperature in this layer decreases at the rate of 1° C for every 165m of height. This is the most important layer for all biological activity.

Source: NCERT - Fundamental of Physical Geography

Q.4) Consider the following statements regarding structure of the atmosphere:

1. Radio waves transmitted from the earth are reflected back to the earth by mesosphere.
2. Ozone layer is found in Stratosphere.
3. Temperature in mesosphere is decreases with increase in height.

Choose the correct answer from below given codes:

- a) 1 and 2 only
- b) 3 only
- c) 2 and 3 only
- d) 2 only

ANS: C

Explanation: The stratosphere is found above the tropopause and extends up to a height of 50 km. One important feature of the stratosphere is that it contains the ozone layer.

- This layer absorbs ultra-violet radiation and shields life on the earth from intense, harmful form of energy. The mesosphere lies above the stratosphere, which extends up to a height of 80 km.
- In this layer, once again, temperature starts decreasing with the increase in altitude and reaches up to minus 100° C at the height of 80 km. The upper limit of mesosphere is known as the mesopause.

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- The ionosphere is located between 80 and 400 km above the mesopause. It contains electrically charged particles known as ions, and hence, it is known as ionosphere.
- Radio waves transmitted from the earth are reflected back to the earth by this layer. Temperature here starts increasing with height.

Source: NCERT - Fundamental of Physical Geography

Q.5) Which of the following factors has influence on insolation?

1. The rotation of earth on its axis.
2. The angle of inclination of the sun's rays.
3. The configuration of land.

Choose the correct answer from below given codes:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: D

Explanation: The amount and the intensity of insolation vary during a day, in a season and in a year. The factors that cause these variations in insolation are:

- (i) the rotation of earth on its axis;
- (ii) the angle of inclination of the sun's rays;
- (iii) the length of the day;
- (iv) the transparency of the atmosphere;
- (v) the configuration of land in terms of its aspect. The last two however, have less influence.

Source: NCERT - Fundamental of Physical Geography

Q.6) Consider the following statements:

1. The red and blue colour of the sky is due to the scattering of light.
2. Maximum insolation is received at equator.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: The atmosphere is largely transparent to short wave solar radiation. The incoming solar radiation passes through the atmosphere before striking the earth's surface.

- Within the troposphere water vapour, ozone and other gases absorb much of the near infrared radiation.
- Very small-suspended particles in the troposphere scatter visible spectrum both to the space and towards the earth surface. This process adds colour to the sky.
- The red colour of the rising and the setting sun and the blue colour of the sky are the result of scattering of light within the atmosphere.
- The insolation received at the surface varies from about 320 Watt/m² in the tropics to about 70 Watt/m² in the poles.

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- Maximum insolation is received over the subtropical deserts, where the cloudiness is the least. Equator receives comparatively less insolation than the tropics.

Source: NCERT - Fundamental of Physical Geography

Q.7) Consider the following statements regarding atmospheric pressure:

1. Atmospheric Pressure increases with height.
2. The vertical pressure gradient force is much larger than that of the horizontal pressure gradient.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: The weight of a column of air contained in a unit area from the mean sea level to the top of the atmosphere is called the atmospheric pressure.

- The atmospheric pressure is expressed in units of milibar. At sea level the average atmospheric pressure is 1,013.2 milibar.
- Due to gravity the air at the surface is denser and hence has higher pressure.
- Air pressure is measured with the help of a mercury barometer or the aneroid barometer. The pressure decreases with height.
- At any elevation it varies from place to place and its variation is the primary cause of air motion, i.e. wind which moves from high pressure areas to low pressure areas.
- The vertical pressure gradient force is much larger than that of the horizontal pressure gradient.
- But, it is generally balanced by a nearly equal but opposite gravitational force. Hence, we do not experience strong upward winds

Source: NCERT - Fundamental of Physical Geography

Q.8) Which of the following forces affect the velocity and direction of wind?

1. Pressure Gradient Force
2. Frictional Force
3. Coriolis Force

Choose the correct answer from below given codes:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: D

Explanation: The air in motion is called wind. The wind blows from high pressure to low pressure. The wind at the surface experiences friction.

- In addition, rotation of the earth also affects the wind movement. The force exerted by the rotation of the earth is known as the Coriolis force.
- Thus, the horizontal winds near the earth surface respond to the combined effect of three forces – the pressure gradient force, the frictional force and the Coriolis force.

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- In addition, the gravitational force acts downward.
- Source: NCERT - Fundamental of Physical Geography

Q.9) Which of the following cell forms in tropics?

- Hadley cell
- Ferrell cell
- Polar cell
- Hadley and polar cell

ANS: A

Explanation: The air at the Inter Tropical Convergence Zone (ITCZ) rises because of convection caused by high insolation and a low pressure is created.

- The winds from the tropics converge at this low pressure zone. The converged air rises along with the convective cell.
- It reaches the top of the troposphere up to an altitude of 14 km. and moves towards the poles. This causes accumulation of air at about 30° N and S.
- Part of the accumulated air sinks to the ground and forms a subtropical high.
- Another reason for sinking is the cooling of air when it reaches 30° N and S latitudes. Down below near the land surface the air flows towards the equator as the easterlies.
- The easterlies from either side of the equator converge in the Inter Tropical Convergence Zone (ITCZ).
- Such circulations from the surface upwards and vice-versa are called cells. Such a cell in the tropics is called Hadley Cell.

Source: NCERT - Fundamental of Physical Geography

Q.10) Which of the following pair/pairs is/are correct?

1. Cyclones – Indian Ocean
2. Typhoons – Atlantic Ocean
3. Hurricanes – Pacific Ocean

Choose the correct answer from below given codes:

- 1 and 2 only
- 3 only
- 1 only
- 2 and 3 only

ANS: C

Explanation: Tropical cyclones are violent storms that originate over oceans in tropical areas and move over to the coastal areas bringing about large scale destruction caused by violent winds, very heavy rainfall and storm surges.

This is one of the most devastating natural calamities. They are known as Cyclones in the Indian Ocean, Hurricanes in the Atlantic, Typhoons in the Western Pacific and South China Sea, and Willy-willies in the Western Australia.

Source: NCERT - Fundamental of Physical Geography

Geography

Q.1) Which of the following is/are endogenic geomorphic process?

1. Diastrophism
2. Volcanism
3. Weathering

Choose the correct answer from below given codes:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 3 only

ANS: A

Explanation: The endogenic and exogenic forces causing physical stresses and chemical actions on earth materials and bringing about changes in the configuration of the surface of the earth are known as geomorphic processes.

- Diastrophism and volcanism are endogenic geomorphic processes.
- Weathering, mass wasting, erosion and deposition are exogenic geomorphic processes.

Source: NCERT - Fundamental of Physical Geography

Q.2) Which of the following is/are can act as geomorphic agent?

1. Running water
2. Glaciers
3. Ground water

Choose the correct answer from below given codes:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: D

Explanation: A process is a force applied on earth materials affecting the same.

- An agent is a mobile medium (like running water, moving ice masses, wind, waves and currents etc.) which removes, transports and deposits earth materials.
- Running water, groundwater, glaciers, wind, waves and currents, etc., can be called geomorphic agents.

Source: NCERT - Fundamental of Physical Geography

Q.3) Which of the following processes comes under diastrophism?

1. Orogenic processes
2. Epeirogenic processes
3. Earthquakes
4. Plate tectonics

Choose the correct answer from below given codes:

- a) 1, 2 and 4 only
- b) 1, 2 and 3 only
- c) 1 and 2 only
- d) 1, 2, 3 and 4

ANS: D

Explanation: All processes that move, elevate or build up portions of the earth's crust come under diastrophism. They include:

- (i) orogenic processes involving mountain building through severe folding and affecting long and narrow belts of the earth's crust;
- (ii) epeirogenic processes involving uplift or warping of large parts of the earth's crust;
- (iii) Earthquakes involving local relatively minor movements;
- (iv) Plate tectonics involving horizontal movements of crustal plates.

Source: NCERT - Fundamental of Physical Geography

Q.4) Which of the following process are involved in denudation?

1. Weathering
2. Mass wasting
3. Erosion
4. Transportation

Choose the correct answer from below given codes:

- a) 1, 2 and 4 only
- b) 1, 2 and 3 only
- c) 1 and 2 only
- d) 1, 2, 3 and 4

ANS: D

Explanation: All the exogenic geomorphic processes are covered under a general term, denudation. The word 'denude' means to strip off or to uncover. Weathering, mass wasting/movements, erosion and transportation are included in denudation.

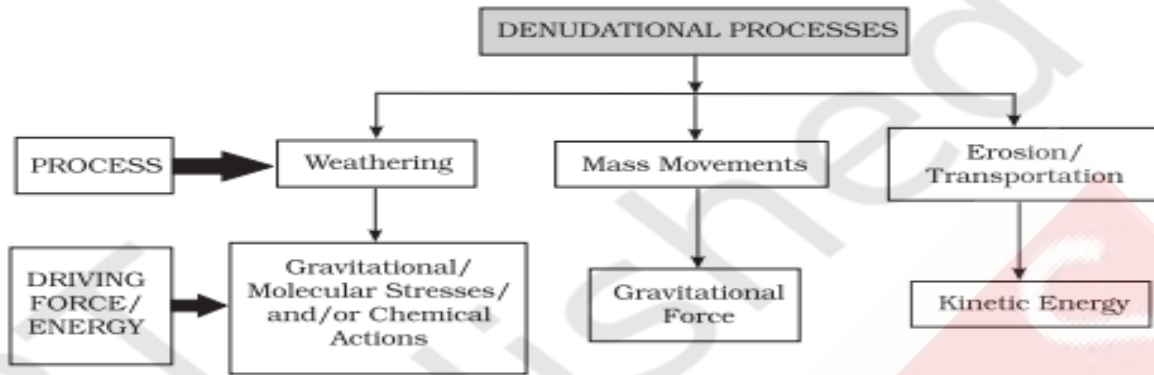


Figure 6.1 : Denudational processes and their driving forces

Source: NCERT - Fundamental of Physical Geography

Q.5) Which of the following is NOT a chemical weathering?

- a) Solution
- b) Carbonation
- c) Wedging
- d) Hydration

ANS: C

Explanation: A group of weathering processes viz; solution, carbonation, hydration, oxidation and reduction act on the rocks to decompose, dissolve or reduce them to a fine clastic state through chemical reactions by oxygen, surface and/or soil water and other acids.

- Water and air (oxygen and carbon dioxide) along with heat must be present to speed up all chemical reactions.
- Over and above the carbon dioxide present in the air, decomposition of plants and animals increases the quantity of carbon dioxide underground.
- These chemical reactions on various minerals are very much similar to the chemical reactions in a laboratory.

Source: NCERT - Fundamental of Physical Geography

Q.6) “Exfoliation process” is comes under which of the following?

- a) Physical weathering
- b) Chemical weathering
- c) Biological weathering
- d) Both A and B

ANS: A

Explanation: Exfoliation is a physical weathering process of unloading, thermal contraction and expansion and salt weathering. Exfoliation is a result but not a process.

- Flaking off of more or less curved sheets of shells from over rocks or bedrock results in smooth and rounded surfaces.
- Exfoliation can occur due to expansion and contraction induced by temperature changes.
- Exfoliation domes and tors result due to unloading and thermal expansion respectively.

Source: NCERT - Fundamental of Physical Geography

Q.7) Which of the following is/are aid/aides the process of mass movement?

1. Gravity
2. Running water
3. Glacier

Choose the correct answer from below given codes:

- a) 1 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: A

Explanation: Mass movements are aided by gravity and no geomorphic agent like running water, glaciers, wind, waves and currents participate in the process of mass movements. That means mass movements do not come under erosion though there is a shift (aided by gravity) of materials from one place to another.

Source: NCERT - Fundamental of Physical Geography

Q.8) Consider the following statements:

1. Heave, flow and slide are the three forms of mass movements.
2. Debris slide is slipping of one or several units of rock debris with a backward rotation with respect to the slope over which the movement takes place.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: Heave (heaving up of soils due to frost growth and other causes), flow and slide are the three forms of movements.

Slump is slipping of one or several units of rock debris with a backward rotation with respect to the slope over which the movement takes place.

Source: NCERT - Fundamental of Physical Geography

Q.9) Which of the following are the causes behind the debris avalanches and landslides in Western Ghats?

1. Due to vertical cliffs and escarpments.
2. Due to mechanical weathering.
3. Due to heavy amounts of rainfall.

Choose the correct answer from below given codes:

- a) 1 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: D

Explanation: Compared to the Himalayas, the Nilgiris bordering Tamilnadu, Karnataka, Kerala and the Western Ghats along the west coast are relatively tectonically stable and are mostly made up of very hard rocks.

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- But, still, debris avalanches and landslides occur though not as frequently as in the Himalayas, in these hills. Why?
- Many slopes are steeper with almost vertical cliffs and escarpments in the Western Ghats and Nilgiris.
- Mechanical weathering due to temperature changes and ranges is pronounced.
- They receive heavy amounts of rainfall over short periods. So, there is almost direct rock fall quite frequently in these places along with landslides and debris avalanches.

Source: NCERT - Fundamental of Physical Geography

Q.10) Which of the following factors control the formation of soils?

1. Parent material
2. Topography
3. Climate
4. Biological activity

Choose the correct answer from below given codes:

- a) 1, 2 and 4 only
- b) 1, 2 and 3 only
- c) 1 and 2 only
- d) 1, 2, 3 and 4

ANS: D

Explanation: Five basic factors control the formation of soils:

- (i) parent material;
- (ii) topography;
- (iii) climate;
- (iv) biological activity;
- (v) Time.

In fact soil forming factors act in union and affect the action of one another.

Source: NCERT - Fundamental of Physical Geography

Geography

Q.1) For how many nautical miles Indian territorial limit extends towards sea?

- a) 10 Nautical miles
- b) 12 Nautical miles
- c) 100 Nautical miles
- d) 200 Nautical Miles

ANS: B

Explanation: The mainland of India extends from Kashmir in the north to Kanniyakumari in the south and Arunachal Pradesh in the east to Gujarat in the west. India's territorial limit further extends towards the sea up to 12 nautical miles (about 21.9 km) from the coast.

Source: NCERT - India Physical Environment

Q.2) Consider the following statements:

1. The latitudinal and longitudinal extent of India is 30 degrees.
2. The distance from north to south extremity is lower than west to east extremity.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: The latitudinal and longitudinal extent of India, they are roughly about 30 degrees, whereas the actual distance measured from north to south extremity is 3,214 km, and that from east to west is only 2,933 km.

Source: NCERT - India Physical Environment

Q.3) Consider the following statements:

1. The distance between two latitudes decreases towards the poles.
2. Indian Standard Time is ahead of Greenwich Mean Time by 5 hours and 30 minutes.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: The distance between two longitudes decreases towards the poles whereas the distance between two latitudes remains the same everywhere.

- There is a general understanding among the countries of the world to select the standard meridian in multiples of 7°30' of longitude.
- That is why 82°30' E has been selected as the 'standard meridian' of India.

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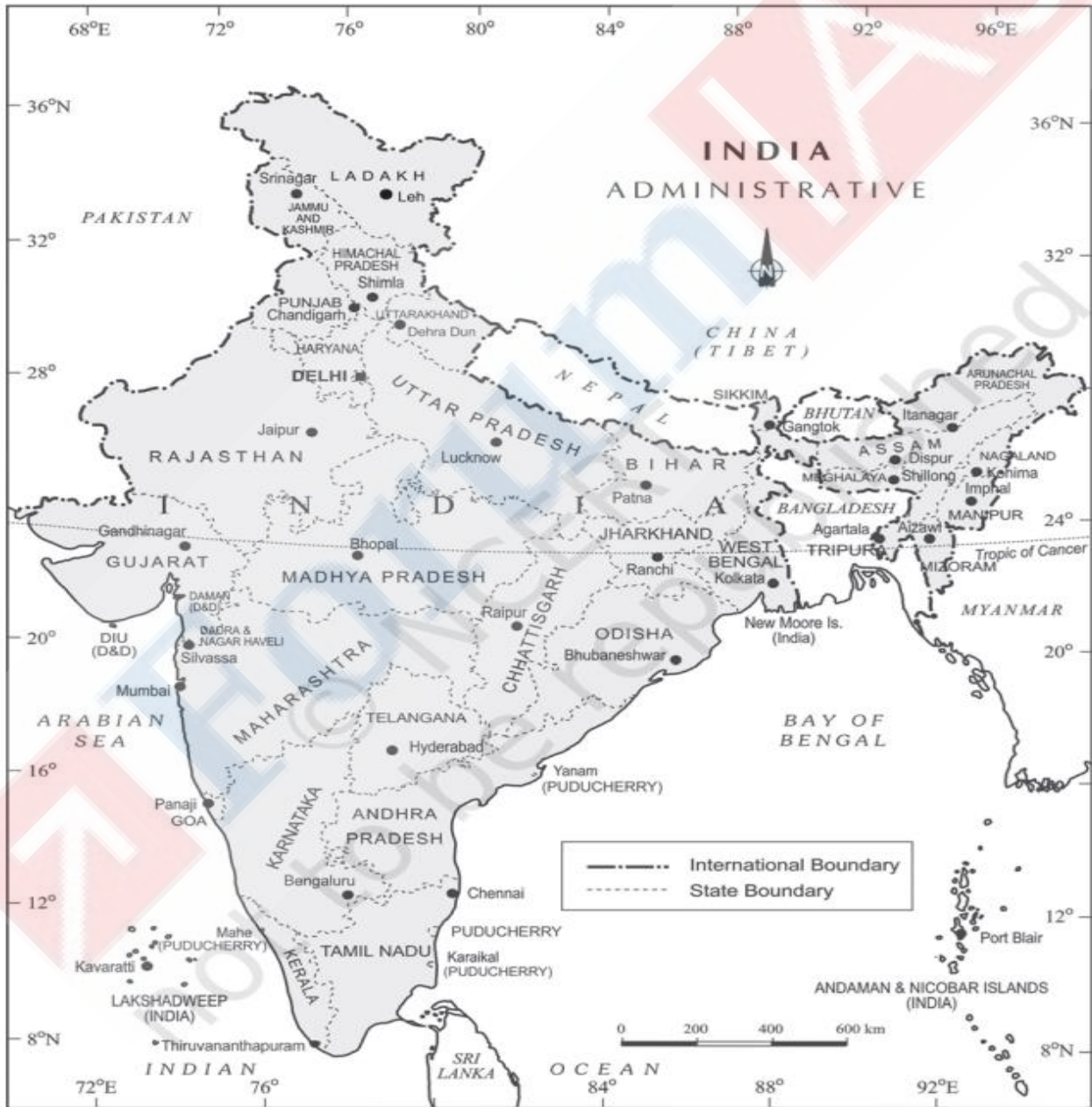
- Indian Standard Time is ahead of Greenwich Mean Time by 5 hours and 30 minutes.
Source: NCERT - India Physical Environment

Q.4) Which of the following capital city is farther from tropic of cancer?

- a) Raipur
- b) Gandhi Nagar
- c) Bhopal
- d) Kolkata

ANS: A

Explanation:



Source: NCERT - India Physical Environment

Q.5) The term “Marusthali” is associated with which of the following state?

- a) Manipur
- b) Rajasthan
- c) Chhattisgarh
- d) Tamil Nadu

ANS: B

Explanation: Marusthali, (Sanskrit: “Land of the Dead”) sand-dune-covered eastern portion of the Great Indian (Thar) Desert in western Rajasthan state, northwestern India.

It extends over about 24,000 square miles (62,000 square km), north of the Luni River.

Source: NCERT - India Physical Environment

Q.6) The Patkai Bum hills are associated with which of the following hill ranges?

- a) Satpura Range
- b) Vinhaya Range
- c) Purvanchal Range
- d) Siwalikh hill Range

ANS: C

Explanation: The Himalayas bend sharply to the south beyond the Dihang gorge and move outwards to form a covering the eastern boundary of the country.

- They are known as ‘the Eastern or Purvanchal Hills’. It extended in the north-eastern states of India.
- Most of these hills are extended along the border of India and Myanmar while others are inside India namely- the Patkai Bum Hills, the Naga Hills and the Mizo Hills.

Source: NCERT - India Physical Environment

Q.7) Which of the following factors are controlling temperature distribution on earth surface?

1. Latitude of the place
2. Altitude of the place
3. Air Mass circulation
4. Presence of Ocean Currents

Choose the correct answer from below given codes:

- a) 1, 2 and 4 only
- b) 1, 2 and 3 only
- c) 1 and 2 only
- d) 1, 2, 3 and 4

ANS: D

Explanation: The temperature of air at any place is influenced by (i) the latitude of the place; (ii) the altitude of the place; (iii) distance from the sea, the air-mass circulation; (iv) the presence of warm and cold ocean currents; (v) local aspects.

Source: NCERT - India Physical Environment

Q.8) Consider the following statements regarding the Coriolis force:

1. It deflects the wind to the right direction in the northern hemisphere and to the left in the southern hemisphere.
2. It acts perpendicular to the pressure gradient force.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: The rotation of the earth about its axis affects the direction of the wind. This force is called the Coriolis force after the French physicist who described it in 1844.

- It deflects the wind to the right direction in the northern hemisphere and to the left in the southern hemisphere. The deflection is more when the wind velocity is high.
- The Coriolis force is directly proportional to the angle of latitude. It is maximum at the poles and is absent at the equator. The Coriolis force acts perpendicular to the pressure gradient force.
- The pressure gradient force is perpendicular to an isobar. The higher the pressure gradient force, the more is the velocity of the wind and the larger is the deflection in the direction of wind.
- As a result of these two forces operating perpendicular to each other, in the low-pressure areas the wind blows around it.
- At the equator, the Coriolis force is zero and the wind blows perpendicular to the isobars.
- The low pressure gets filled instead of getting intensified. That is the reason why tropical cyclones are not formed near the equator

Source: NCERT - India Physical Environment

Q.9) The El Nino process is related to which of the following?

- a) Oceans
- b) Asteroids
- c) Global Warming
- d) Biomes

ANS: A

Explanation: Warming and cooling of the Pacific Ocean is most important in terms of general atmospheric circulation.

- The warm water of the central Pacific Ocean slowly drifts towards South American coast and replaces the cool Peruvian current.
- Such appearance of warm water off the coast of Peru is known as the El Nino.
- The El Nino event is closely associated with the pressure changes in the Central Pacific and Australia. This change in pressure condition over Pacific is known as the southern oscillation.
- The combined phenomenon of southern oscillation and El Nino is known as ENSO. In the years when the ENSO is strong, large-scale variations in weather occur over the world.

Source: NCERT - India Physical Environment

Q.10) Consider the following statements:

1. The transformation of water vapor into liquid form is called as sublimation.
2. The temperature at which the water starts evaporating is referred to as the latent heat of vaporization.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: The amount of water vapour in the atmosphere is added or withdrawn due to evaporation and condensation respectively.

- Evaporation is a process by which water is transformed from liquid to gaseous state. Heat is the main cause for evaporation.
- The temperature at which the water starts evaporating is referred to as the latent heat of vapourisation. The transformation of water vapour into water is called condensation.
- Condensation is caused by the loss of heat. When moist air is cooled, it may reach a level when its capacity to hold water vapour ceases.
- Then, the excess water vapour condenses into liquid form. If it directly condenses into solid form, it is known as sublimation.

Source: NCERT - India Physical Environment

Geography - Revision

Q.1) The “NIFE” layer is related to which of the following?

- a) Crust
- b) Mantle
- c) Core
- d) Asthenosphere

ANS: C

Explanation: The core-mantle boundary is located at the depth of 2,900 km. The outer core is in liquid state while the inner core is in solid state. The core is made up of very heavy material mostly constituted by nickel and iron. It is sometimes referred to as the nife layer.

Source: NCERT - Fundamental of Physical Geography

Q.2) Which of the following Volcano is most explosive in nature?

- a) Caldera
- b) Composite Volcanoes
- c) Shield Volcanoes
- d) Flood Basalt Provinces

ANS: A

Explanation: Caldera is the most explosive of the earth's volcanoes. They are usually so explosive that when they erupt they tend to collapse on themselves rather than building any tall structure.

The collapsed depressions are called calderas. Their explosiveness indicates that the magma chamber supplying the lava is not only huge but is also in close vicinity.

Source: NCERT - Fundamental of Physical Geography

Q.3) The terms “Batholiths and Lacoliths” are associated with which of the following phenomena?

- a) Volcanoes
- b) Earthquakes
- c) Air Mass
- d) Biomes

ANS: A

Explanation: A large body of magmatic material that cools in the deeper depth of the crust develops in the form of large domes.

- They appear on the surface only after the denudational processes remove the overlying materials. They cover large areas, and at times, assume depth that may be several km. These are granitic bodies.
- Batholiths are the cooled portion of magma chambers. These are large dome-shaped intrusive bodies with a level base and connected by a pipe-like conduit from below.

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- It resembles the surface volcanic domes of composite volcano, only these are located at deeper depths. It can be regarded as the localised source of lava that finds its way to the surface.
- The Karnataka plateau is spotted with domal hills of granite rocks. Most of these, now exfoliated, are examples of laccoliths or batholiths.

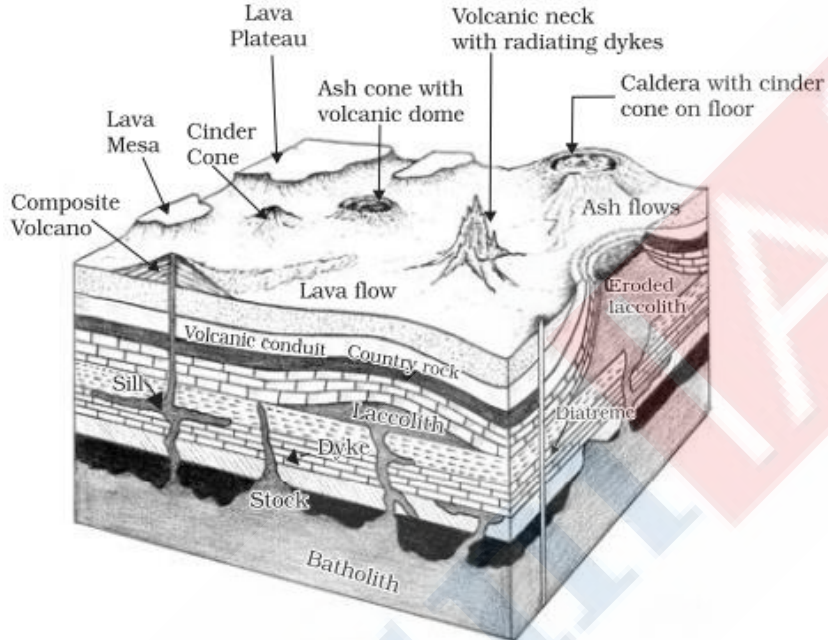


Figure 3.4 : Volcanic Landforms

Source: NCERT - Fundamental of Physical Geography

Q.4) In which of the following countries Gondwana – type sediments can be found?

1. India
2. Madagascar
3. Falkland Island

Choose the correct answer from below given codes:

- a) 1 only
- b) 1 and 2 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: D

Explanation: The Gondawana system of sediments from India is known to have its counterparts in six different landmasses of the Southern Hemisphere.

- At the base, the system has thick tillite indicating extensive and prolonged glaciation.
- Counterparts of this succession are found in Africa, Falkland Island, Madagascar, Antarctica and Australia.
- Overall resemblance of the Gondawana-type sediments clearly demonstrates that these landmasses had remarkably similar histories.

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- The glacial tillite provides unambiguous evidence of palaeoclimates and also of drifting of continents.

Source: NCERT - Fundamental of Physical Geography

Q.5) The terms “foliation and lineation” are related to which of the following?

- a) Igneous rocks
- b) Sedimentary rocks
- c) Metamorphic rocks
- d) Both A and B

ANS: C

Explanation: In the process of metamorphism in some rocks grains or minerals get arranged in layers or lines. Such an arrangement of minerals or grains in metamorphic rocks is called foliation or lineation.

- Sometimes minerals or materials of different groups are arranged into alternating thin to thick layers appearing in light and dark shades.
- Such a structure in metamorphic rocks is called banding and rocks displaying banding are called banded rocks.
- Types of metamorphic rocks depend upon original rocks that were subjected to metamorphism.
- Metamorphic rocks are classified into two major groups — foliated rocks and non-foliated rocks. Gneissoid, granite, syenite, slate, schist, marble, quartzite etc. are some examples of metamorphic rocks.

Source: NCERT - Fundamental of Physical Geography

Q.6) The term “eluviation and illuviation” are associated with which of the following?

- a) Soil formation
- b) Continent building
- c) Deep sea plains
- d) Atmospheric circulation

ANS: A

Explanation: Climate is an important active factor in soil formation. The climatic elements involved in soil development are:

- (i) Moisture in terms of its intensity, frequency and duration of precipitation - evaporation and humidity;
- (ii) Temperature in terms of seasonal and diurnal variations.

Precipitation gives soil its moisture content which makes the chemical and biological activities possible.

- Excess of water helps in the downward transportation of soil components through the soil (eluviation) and deposits the same down below (illuviation).

Source: NCERT - Fundamental of Physical Geography

Q.7) The term “Cirques” is associated with which of the following?

- a) Glacial landforms
- b) Karst landforms
- c) Sand dunes
- d) Peneplain

ANS: A

Explanation: Cirques are the most common of landforms in glaciated mountains. The cirques quite often are found at the heads of glacial valleys.

- The accumulated ice cuts these cirques while moving down the mountain tops.
- They are deep, long and wide troughs or basins with very steep concave to vertically dropping high walls at its head as well as sides.
- A lake of water can be seen quite often within the cirques after the glacier disappears. Such lakes are called cirque or tarn lakes.
- There can be two or more cirques one leading into another down below in a stepped sequence.

Source: NCERT - Fundamental of Physical Geography

Q.8) Consider the following statements:

1. The west coast of India is a low sedimentary coast due to which depositional landforms dominate in west coast.
2. The east coast of India is a high rocky retreating coast due to which erosional landforms dominate in east coast.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: D

Explanation: The west coast of our country is a high rocky retreating coast. Erosional forms dominate in the west coast. The east coast of India is a low sedimentary coast. Depositional forms dominate in the east coast.

Source: NCERT - Fundamental of Physical Geography

Q.9) Consider the following statements:

1. The process of vertical heating of the atmosphere is known as convection.
2. The transfer of heat through horizontal movement of air is called advection.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: The air in contact with the earth rises vertically on heating in the form of currents and further transmits the heat of the atmosphere.

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- This process of vertical heating of the atmosphere is known as convection. The convective transfer of energy is confined only to the troposphere.
- The transfer of heat through horizontal movement of air is called advection. Horizontal movement of the air is relatively more important than the vertical movement.

Source: NCERT - Fundamental of Physical Geography

Q.10) The local wind “loo” is related to which of the following country?

- a) Turkey
- b) Ethiopia
- c) India
- d) Japan

ANS: C

Explanation: In tropical regions particularly in northern India during summer season local winds called 'loo' is the outcome of advection process.

Source: NCERT - Fundamental of Physical Geography