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MCQ 1.**ANSWER: B****EXPLANATION**

Kilimanjaro (Tanzania) is the highest mountain in Africa, located completely within Tanzania.

Toubkal (Morocco) is the highest peak in the Atlas Mountains, situated in southwestern Morocco.

Stanley (Uganda) is the highest peak of the Rwenzori Mountains, located on the border between Uganda and the Democratic Republic of the Congo.

Hoggar (Algeria), also known as Ahaggar are a highland region in central Sahara.

MCQ 2.**ANSWER: C****EXPLANATION**

The density of the Earth increases with depth.

The crust has an average density of about 2.7 to 3.0 g/cm³ while the mantle and core beneath it have significantly higher densities.

Due to lower pressures relative to the immense heat, the outer core remains in a molten/liquid state. The inner core transitions into a solid state because the overwhelming gravitational pressure overrides the melting point of the metals.

The core is incredibly dense and is fundamentally made of the NIFE (Nickel and Iron).

MCQ 3.**ANSWER: C****EXPLANATION**

A total lunar eclipse can only happen during a full moon phase when the Earth aligns exactly between the Sun and the Moon, causing the Earth's main shadow (umbra) to completely cover the lunar disc.

Sunlight passing through Earth's atmosphere is scattered, leaving only longer red wavelengths to project onto the Moon's surface, giving it a rusty or deep red glow popularly called a Blood Moon.

Earth's atmospheric clarity dictates the shade of red. Heavy particulate matter such as volcanic ash, active wildfire smoke, dust storms, or localized industrial air pollution will block out more light, turning the moon a darker, muddy red or making it nearly disappear entirely during totality.

MCQ 4.**ANSWER: D****EXPLANATION**

Fremantle Doctor is a famous summer afternoon sea breeze that cools down the Perth region in Western Australia.

Habagat is the localized name for the wet Southwest Monsoon that blows across the Philippines.

Gregale is a strong, cold, northeasterly wind that blows over the Malta and Greece.

MCQ 5.**ANSWER: A****EXPLANATION**

Ice age is correct because a global climate phase like an ice age describes general planetary cooling rather than providing evidence of moving landmasses. While it shapes surface features, the occurrence of an ice age alone does not demonstrate continental drift.

MCQ 6.

ANSWER: B

EXPLANATION

Wladimir Köppen designed his famous Empirical Climate Classification System on the foundational premise that "Vegetation is the true index of climate".

He selected clear, measurable parameters of temperature and precipitation because they align directly with the natural boundaries of global vegetation zones (biomes).

MCQ 7.

ANSWER: B

EXPLANATION

The Rennell Current is a warm, seasonal northward-flowing branch of the North Atlantic Drift that moves along the northern coast of Spain and loops around the Bay of Biscay.

The Cabot Strait is located in eastern Canada (outflowing from the Gulf of St. Lawrence into the Atlantic).

The Agulhas Current is a powerful, warm western boundary current flowing south-southeastward along the coast of South Africa in the Indian Ocean.

MCQ 8.

ANSWER: A

EXPLANATION

Khamsin - Haboob - Harmattan – Berg

Khamsin is a hot, dry, dusty northern wind blowing over North Africa.

Haboob is a fierce dust storm wind primarily affecting Sudan's Sahel region.

Harmattan is a dry, dusty trade wind blowing south-west from the Sahara over (Upper Guinea coast).

Berg is a hot, dry wind blowing down from the interior plateau to the coast in South Africa.

MCQ 9.

ANSWER: C

EXPLANATION

The subtropical high-pressure zones feature high temperatures, clear skies, low rainfall, and high evaporation rates, which maximizes salinity.

The Benguela current is a cold current, but it is located in the Atlantic Ocean.

When the sun, earth, and moon are in a straight line, it causes a Spring tide.

Tides generally cycle roughly every 12 hours and 26 minutes due to the lunar day.

MCQ 10.

ANSWER: C

EXPLANATION

Agra and Darjeeling share roughly the same latitude (~27° N). However, Darjeeling sits over 2,000 meters above sea level. Due to the normal lapse rate, temperature decreases as altitude increases because the thin mountain

air cannot trap heat effectively compared to dense air over the plains.

MCQ 11.

ANSWER: A

EXPLANATION

The Pampas are vast, fertile South American lowlands. They cover more than 1,200,000 square kilometers, primarily spreading across Argentina, alongside parts of Uruguay and southernmost Brazil.

MCQ 12.

ANSWER: C

EXPLANATION

Tidal flat, also known as mudflats, tidal flats are coastal wetlands that form when sediments are deposited by tides or rivers. They are completely covered by water during high tide and fully exposed to the air during low tide.

MCQ 13.

ANSWER: C

EXPLANATION

Geosynclines are defined as massive, long, narrow, and shallow water depressions on the Earth's crust that undergo gradual sedimentation and subsidence. The Tethys Sea was a prominent geosyncline located between Eurasia and Gondwanaland. Compressive forces eventually crumpled and uplifted these accumulated marine sediments, giving birth to the Himalayan mountain range.

MCQ 14.

ANSWER: A

EXPLANATION

A watershed or drainage basin is an area of land where all precipitation collects and drains off into a common outlet, such as into a river, bay, or other body of water. It acts as a comprehensive natural unit for collecting, storing, and releasing water over time.

MCQ 15.

ANSWER: A

EXPLANATION

The Lombok Strait connects the Java Sea to the Indian Ocean, lying between the Indonesian islands of Bali and Lombok.

The Davis Strait is an exceptionally broad strait that connects Baffin Bay to the Labrador Sea between Greenland and Canada.

The Torres Strait connects the Coral Sea to the Arafura Sea.

MCQ 16.

ANSWER: A

EXPLANATION

The person is at 30°W and Indian Standard Time is at 82.5°E .

Total longitude difference

$$= 82.5^{\circ}\text{E} - (-30^{\circ}\text{W}) = 112.5^{\circ}$$

$$1^{\circ} = 4 \text{ minutes}$$

$$\text{The time difference} = 112.5^{\circ} \times 4 = 450 \text{ min.}$$

$$= 7 \text{ hours and } 30 \text{ min.}$$

Because India is to the east, we add this time:

$$= 6:30 \text{ AM Monday}$$

MCQ 17.

ANSWER: C

EXPLANATION

About 90% of the Earth's ozone is concentrated in the stratosphere, forming the



"ozone layer" which shields life on Earth by absorbing harmful ultraviolet (UV) radiation.

MCQ 18.

ANSWER: D

EXPLANATION

The Gibson Desert is located in Western Australia.

Sonoran is in the USA/Mexico,

Taklamakan is in China, and Karakum is in Turkmenistan.

MCQ 19.

ANSWER: D

EXPLANATION

The hallmark of a Mediterranean climate is hot, dry summers and mild, wet winters.

During the winter solstice in the Northern Hemisphere, the planetary wind and pressure belts shift southward following the sun. This shift pulls the rain-bearing moisture-laden Westerlies over the Mediterranean basin, causing winter rains.

MCQ 20.

ANSWER: B

EXPLANATION

The China-type climate, also known as the Temperate Monsoon or Natal type is found on the eastern margins of continents just outside the tropics, it experiences monsoonal marine influences that generate warm, moist summers with heavier rainfall than its western-margin counterpart followed by cool, dry winters.

MCQ 21.

ANSWER: B

EXPLANATION

The convergence of two continental tectonic plates leads to massive compression that creates fold mountains.

Block mountains and rift valleys are typically formed via tensional forces/divergence.

Folding structurally requires horizontal compressive forces, which naturally occur where tectonic plates converge.

MCQ 22.

ANSWER: A

EXPLANATION

Pontic Mountains is located furthest west in northern Turkey along the Black Sea.

Zagros Mountains is located in Iran/Iraq.

Hindu Kush is located further east across Afghanistan and Pakistan.

Karakoram is located furthest east, spanning northern Pakistan, India, and China.

MCQ 23.

ANSWER: D

EXPLANATION

In hydrology, when the density of an incoming river flow/sediment load is higher than the receiving basin water, it is called a hyperpycnal condition. The denser river water plunges directly beneath the seawater, generating a bottom-hugging density underflow.

Hyperpycnal flows do not form bird-foot deltas. Bird-foot deltas form under hypopycnal conditions, where the river water is less dense than sea water, causing the sediment plume to float at the surface and

distribute sediment widely through lengthy, finger-like distributary channels.

MCQ 24.

ANSWER: B

EXPLANATION

The rotation of the Earth creates an apparent force known as the Coriolis force. According to Ferrel's Law, this force deflects wind and ocean currents to the right in the Northern Hemisphere and to the left in the Southern Hemisphere.

MCQ 25.

ANSWER: D

EXPLANATION

Black soils are entirely absent from the cold, mountainous Himalayan region. Instead, they are found across the Deccan Trap region of central and western India, including Maharashtra, Gujarat, Madhya Pradesh, and parts of Karnataka.

Black soil is widely known locally as Regur. Krebs noted that Regur is essentially a mature soil because its profile has developed over millions of years of basalt weathering.

Due to its very high clay content, black soil is highly retentive of moisture.

MCQ 26.

ANSWER: C

EXPLANATION

Recumbent folds happen under extreme, multi-directional horizontal compression, causing the axial plane and both limbs to become nearly horizontal and parallel to the ground surface.

Isoclinal folds happen when intense compressive forces squeeze the limbs until they are parallel to each other, but they remain vertical or sharply tilted rather than horizontal.

Chevron folds are structurally unique V-shaped geological formations. They are specifically defined by exceptionally straight limbs and very sharp, angular hinges.

MCQ 27.

ANSWER: A

EXPLANATION

Western Europe features a Marine West Coast (British type) climate. It receives rainfall throughout the entire year with no distinct dry season.

This consistent rainfall is driven because Western Europe sits directly in the permanent belt of the moisture-laden Westerlies that sweep in directly off the Atlantic Ocean all year round.

MCQ 28.

ANSWER: A

EXPLANATION

El Niño describes the periodic, abnormal warming of surface ocean waters along the equatorial Peruvian coast in the Eastern Pacific.

While El Niño does heat up the coastal waters drastically, this warm blanket prevents the natural upwelling of cold, nutrient-rich deep ocean water. Because the nutrients are blocked, the amount of plankton decreases

significantly, causing local marine life and fishing economies to completely collapse.

MCQ 29.

ANSWER: D

EXPLANATION

While jet streams were famously encountered by pilots during World War II, they are predominantly westerly winds, not easterly winds.

Jet streams are incredibly fast-moving ribbons of upper-tropospheric air that routinely achieve core speeds between 300 to 500 km/hour, particularly during winter.

MCQ 30.

ANSWER: D

EXPLANATION

The Mississippi River is the classic example of a bird's foot delta. It branches out into lengthy, narrow distributary channels that extend into the Gulf of Mexico.

MCQ 31.

ANSWER: A

EXPLANATION

Forchhammer's Principle is related strictly to ocean salinity, stating that the chemical ratios of major ions in seawater remain constant regardless of overall salinity changes.

Ekman's rule is related to ocean currents and wind drive, mapping how wind blowing over the ocean moves water at an angle due to the Coriolis effect.

By definition, guyots are flat-topped volcanic seamounts that once rose above the ocean

surface but were subsequently eroded flat by wave action and submerged over time.

MCQ 32.

ANSWER: B

EXPLANATION

Pyrenees (Forms the natural border separating Spain and France.

Alps is the central backbone mountain system of Switzerland.

Balkan spans horizontally right across the center of Bulgaria.

Apennine, the long mountain range forms the physical spine of Italy.

MCQ 33.

ANSWER: C

EXPLANATION

The highest concentrations of naturally occurring ozone are safely locked within the Stratosphere, acting as Earth's natural UV solar shield.

MCQ 34.

ANSWER: A

EXPLANATION

An arcuate delta forms when waves and tides evenly redistribute sediment into a curved fan shape. When river sediment density is higher than the sea, it forms a hyperpycnal subaqueous density flow, not an arcuate delta. A cusate delta forms where a river hits strong open-ocean waves, molding the sediment into a tooth-like point (e.g., the Tiber River).

When river and sea densities are equal, it is called a homopycnal flow, which typically

results in rapid, heavy mixing and standard delta types.

MCQ 35.

ANSWER: B

EXPLANATION

A Pycnocline is the distinct layer in a large body of water where water density changes rapidly with depth.

Ecocline describes a physical zone of gradual transition between two different ecosystems or plant communities.

Thermocline marks the sharp transition layer where ocean water temperature drops rapidly with depth.

Halocline outlines a sharp vertical gradient tracking changes in ocean salinity.

MCQ 36.

ANSWER: B

EXPLANATION

An annular solar eclipse happens when the Moon is near its farthest point from Earth (apogee).

Because it is farther away, it appears smaller than the Sun and does not completely block it out, leaving a visible "ring of fire" around the dark lunar disk.

A Total Solar Eclipse happens when the Moon's Umbra (dark, central shadow) falls on Earth. The Penumbra creates a partial solar eclipse.

A Partial Lunar Eclipse occurs when only a portion of the Moon enters Earth's umbral shadow. Earth completely covering the moon describes a Total Lunar Eclipse.

A Hybrid Eclipse shifts between an annular and total solar eclipse as the shadow moves across Earth's curved surface. It is exceptionally rare but is not restricted to the poles.

MCQ 37.

ANSWER: A

EXPLANATION

Hot mid-latitude deserts are primarily confined within the 15 to 30 degrees parallels of latitude north and south of the equator (the subtropical high-pressure belts), not 30 to 45 degrees.

They lie on the western margins of continents where Trade Winds are off-shore (blowing from the dry land out to the sea), which prevents rain. If trade winds were on-shore, they would carry heavy ocean moisture and drop rain.

These western coastal deserts are heavily influenced by adjacent cold ocean currents (like the Peru/Humboldt Current next to the Atacama, or the Benguela Current next to the Namib). These cold waters chill the overlying air, suppressing its ability to rise and creating a stable, hyper-dry, desiccating effect.

MCQ 38.

ANSWER: D

EXPLANATION

A astronomical black hole is an incredibly dense region of spacetime formed when a massive star exhausts its nuclear fuel and undergoes total gravitational collapse at the end of its life cycle, creating a gravitational

pull so powerful that not even light can escape.

MCQ 39.

ANSWER: D

EXPLANATION

Global warming drives higher sea surface temperatures and traps extra thermal energy in the atmosphere. This increased moisture and heat energy directly fuels the intensity, frequency, and severity of all severe convective weather events, including tropical cyclones, general convective storms, and severe hurricanes.

MCQ 40.

ANSWER: B

EXPLANATION

The Kermadec Ridge sits in the southwestern Pacific Ocean, stretching north from New Zealand.

The Cayman Ridge is a prominent underwater feature located in the western Caribbean Sea, which forms an arm of the broader Atlantic Ocean basin.

The Walvis Ridge is located entirely at the off the coast of southwestern Africa.

MCQ 41.

ANSWER: B

EXPLANATION

Auroras happen in the thermosphere when highly charged solar wind particles collide with atmospheric gases, guided entirely along Earth's magnetic field lines.

Auroras are purely space-weather phenomena triggered by solar activity interacting with

Earth's magnetosphere. Changes in local tropospheric atmospheric temperature have no effect on their formation.

Because Earth's magnetic fields converge tightly at the poles, auroras are predominantly visible at high latitudes surrounding the Arctic (Aurora Borealis) and Antarctic (Aurora Australis) regions.

MCQ 42.

ANSWER: A

EXPLANATION

Comets are composed of cosmic ice, dust, and rock. As they approach the inner solar system, solar radiation vaporizes these volatiles, generating a glowing, highly reflective gas-and-dust coma/tail that streams behind them along their trajectory.

Comets do have orbits. They follow highly eccentric, elongated elliptical paths around the Sun.

Comets are pulled in close to the Sun due to gravitational attraction, not the rotation of space bodies.

MCQ 43.

ANSWER: D

EXPLANATION

The Intertropical Convergence Zone (ITCZ) is a low-pressure belt encircling Earth near the Equator where the Northern Hemisphere's northeast trade winds meet the Southern Hemisphere's southeast trade winds. Sailors historically called it the doldrums due to its calm, windless periods.

While the ITCZ is indeed a low-pressure zone, air tends to ascend there, not descend. Intense solar heating at the equator causes the converging air to heat up, expand, and rise vertically into the atmosphere, creating convective clouds and heavy rain.

MCQ 44.

ANSWER: D

EXPLANATION

An oblique-slip fault combines dip-slip (vertical movement) and strike-slip (horizontal movement). When it features a reverse/thrust component alongside horizontal shifting, it is called an oblique-reverse fault.

Friction causes tectonic stress to build up along these fault planes over time. When the rocks abruptly slip to release this accumulated mechanical energy, it generates earthquakes.

MCQ 45.

ANSWER: A

EXPLANATION

Relative humidity is a ratio comparing the actual water vapour present to the maximum amount the air can hold at that temperature. As air temperature increases, its capacity to hold water vapour expands. If no extra moisture is added, the relative humidity goes down.

Absolute humidity is the actual mass of water vapour present per unit volume of air. Increased solar heating causes more evaporation, directly driving up the total

amount of water vapour injected into the atmosphere.

MCQ 46.

ANSWER: A

EXPLANATION

Kilauea.(Hawaii) is one of the world's most active shield volcanoes, located on the Big Island.

Merapi (Central Java) is an incredibly active stratovolcano.

Yasur (Vanuatu) is a famous, continuously erupting volcano on Tanna Island.

Santa Maria (Guatemala) is a prominent active volcano located in the western highlands.

MCQ 47.

ANSWER: D

EXPLANATION

Statement 2 is incorrect:

The Mistral is a cold, dry, and exceptionally strong northwesterly wind that blows from southern France down into the Gulf of Lion in the northern Mediterranean Sea.

Santa Ana winds are hot, dry downslope winds characteristic of Southern California.

Haboob winds are intense dust storms native to Sudan.

Yamo is a hot, dry, mountain-descending Foehn-type wind found in Japan.

MCQ 48.

ANSWER: D

EXPLANATION

The four outer planets beyond the asteroid belt are universally classified as the Jovian planets

or gas giants. They are primarily composed of hydrogen, helium, and water compounds.

MCQ 49.

ANSWER: B

EXPLANATION

A hot spell does not require an arbitrary timeframe of "more than one week" to be classified as a heatwave. World Meteorological Organization defines a heatwave as a period of statistically unusual hot weather lasting at least 2 to 3 consecutive days, depending on local historical baselines. Heatwaves are triggered by a massive blocking system of atmospheric high pressure. This high-pressure cap traps heat and actively pushes warm air down toward the ground, compressing it and further elevating the temperature.

Because air sinks under a high-pressure dome, it suppresses updrafts. This minimizes both wind speeds and cloud cover, exposing the ground to intense solar radiation and making the stagnant air extremely stifling.

MCQ50.

ANSWER: C

EXPLANATION

When water freezes, its molecules slow down and establish stable hydrogen bonds that form a rigid, open, hexagonal crystal lattice.

Because of this open hexagonal geometry, the water molecules are pushed farther apart in solid form than they are in liquid form. This causes the volume to expand, making ice less dense than water.

MCQ 51.

ANSWER: A

EXPLANATION

As a saturated air parcel rises and cools, water vapour condenses into liquid droplets. This condensation releases latent heat of condensation back into the air parcel. This extra heat slows down the cooling process, making the Wet Adiabatic Lapse Rate (WALR) significantly lower than the Dry Adiabatic Lapse Rate (DALR).

The Dry Adiabatic Lapse Rate applies strictly to unsaturated air parcels (relative humidity below 100%). The Wet Adiabatic Lapse Rate applies to saturated air.

The Wet Adiabatic Lapse Rate is not a fixed baseline; it varies with temperature but is generally around 4°C to 6°C per kilometer near the surface, not 8°C.

MCQ 52.

ANSWER: B

EXPLANATION

Zealandia is a vast, mostly submerged microcontinent located southeast of Australia. In 2017, geologists formally classified it as Earth's 8th continent because it fulfills all crustal criteria despite being 94% underwater. Zealandia's structural definition and thinning occurred much earlier—during the Late Cretaceous period when it pulled away from Antarctica and Australia.

Prior to its rifting and submergence, Zealandia was an integral piece of the ancient southern supercontinent Gondwana.



MCQ 53.**ANSWER: D****EXPLANATION**

Willy-Willies – Dust devils in Australia.

Taifu - The Japanese linguistic term for a regional Typhoon.

Baguio - The local name given to tropical cyclones crossing the Philippine archipelago.

Hurricanes - The standard term used for severe tropical cyclones forming over the North Atlantic and Northeast Pacific Oceans.

MCQ 54.**ANSWER: C****EXPLANATION**

Over 70% of the Australian mainland is classified as arid or semi-arid, meaning the vast interior part of the continent consists of deserts like the Great Sandy, Gibson, and Great Victoria deserts.

Northern Australia lies completely in the tropical zone. It experiences a tropical savanna climate characterized by distinct wet and dry monsoonal seasons.

MCQ 55.**ANSWER: C****EXPLANATION**

A hyperpycnal condition describes an incoming river water flow whose suspended sediment density is higher than that of the receiving basin sea.

Reason (R) is FALSE:

This condition does not create a bird-foot delta. Hyperpycnal flows form subaqueous density underflows and fan systems along the

basin floor. Bird-foot deltas are formed by hypopycnal conditions, where.

MCQ 56.**ANSWER: C****EXPLANATION**

Smog is fundamentally a form of intense atmospheric pollution. While meteorological conditions like an inversion lid, calm winds, or long winter nights trap and aggravate it, smog cannot form at all without the primary presence of air pollutants.

MCQ 57.**ANSWER: A****EXPLANATION**

Pteropod ooze is calcareous, but pteropods are small, free-swimming pelagic molluscs (snails), not protozoans.

Globigerina ooze is a calcareous deposit made of the shells of Globigerina, which are microscopic marine protozoans (foraminifera), not molluscs.

Radiolarian ooze is a siliceous deep-sea deposit composed of the glass-like silica skeletons of radiolarians, which are marine planktonic protozoans.

MCQ 58.**ANSWER: A****EXPLANATION**

The Telegraphic Plateau is a broad, relatively flat underwater plateau located in the northern region of the North Atlantic Ridge, stretching across the ocean floor between Newfoundland (Canada) and Ireland. It famously received its name because the first trans-Atlantic



telegraph cables were successfully laid across it in the 1850s.

MCQ 59.

ANSWER: B

EXPLANATION

The Ben Gurion Canal Project is a historical, theoretical shipping canal proposal engineered to run through Israel's Negev Desert. It would connect the Gulf of Aqaba directly to the Mediterranean Sea, establishing a major geopolitically independent alternative route to Egypt's Suez Canal.

MCQ 60.

ANSWER: C

EXPLANATION

The stratospheric ozone layer is critical to Earth's biosphere because it effectively filters and shields the planet's surface from harmful solar ultraviolet (UV) radiations.

Anthropogenic ozone depletion is scientifically proven to be heavily linked to industrial chemical releases, specifically chlorofluorocarbons (CFCs), which release chlorine atoms that rapidly destroy ozone molecules.

MCQ 61.

ANSWER: B

EXPLANATION

A badland topography is a highly dissected, dry terrain where softer sedimentary rocks and clay-rich soils have been extensively eroded by water and wind. It is characterized by steep slopes, high drainage density, and a

complete lack of vegetation, creating a complex maze of deep ravines, gullies, canyons, flat-topped mesas, and slender spire-like rock pillars called hoodoos.

MCQ 62.

ANSWER: C

EXPLANATION

The Eastern coast of the USA experiences a humid subtropical/continental climate with abundant precipitation year-round driven by onshore moisture. The Western coast is significantly drier due to the dominating subtropical high-pressure system and cold offshore currents.

The primary current modifying the eastern coast of North America is the warm Gulf Stream, which enhances atmospheric evaporation and humidity. The Cabot Current is a localized, cold, freshwater-influenced current that flows out of the Gulf of St. Lawrence along the Nova Scotia continental shelf—it does not warm the US eastern coast.

MCQ 63.

ANSWER: B

EXPLANATION

In fault-block geology, the uplifted blocks are termed horsts, whereas the lowered, down-faulted blocks are called grabens.

The Aravali range in India is universally recognized as one of the oldest relic fold mountain systems in the entire world, heavily worn down by millions of years of continuous weathering.

Block Mountains are formed when large crustal areas are broken up and vertically displaced along extensive fault planes due to tensional or compressional tectonic stresses.

MCQ 64.

ANSWER: D

EXPLANATION

The Tropical Savanna (Sudan type) region is famously nicknamed the "Land of Big Games." Its expansive grasslands support an enormous population of large herbivorous animals and apex predators, making it historically renowned for wildlife hunting and safaris.

MCQ 65.

ANSWER: C

EXPLANATION

A Cirque is a steep-sided, bowl-shaped amphitheatre hollow carved into a mountain wall by glacial erosion, not arid/wind action.

Levees are natural depositional ridges formed adjacent to running water channels during floods.

Uwala is a large, closed compound depression formed by the merging of multiple sinkholes in underground limestone dissolved by Karst groundwater.

Drumlin is an elongated, whale-shaped hill of glacial till deposited by moving Glaciers.

MCQ 66.

ANSWER: C

EXPLANATION

The dense, hyper-biodiverse equatorial tropical rainforests stretching across the

Amazon River Basin in Brazil are locally and globally referred to as Selvas.

Terra Roxa is a highly fertile, deep, dark reddish-brown volcanic soil found in southern Brazil. Its high mineral content makes it world-famous for cultivating high-yield coffee plantations.

MCQ 67.

ANSWER: C

EXPLANATION

Due to continuous active erosion on the outer curve and deposition on the inner curve of a river meander, the neck gets progressively narrower until the river cuts straight through. The abandoned loop is sealed off by silt, transforming into an independent crescent-shaped body of water called an Oxbow lake.

When a fast-flowing river leaves a steep mountain and enters a flat plain, its velocity suddenly drops due to the lower gradient. It immediately drops its heavy sediment load in a conical fan shape, which forms a series of alluvial fans.

Natural levees are narrow, low-height ridges flanking both sides of a river bank. They are built up layer by layer when muddy floodwaters overflow the channel banks and immediately drop coarser sediment next to the river edge, forming natural embankments.

MCQ 68.

ANSWER: A

EXPLANATION

Heavy showers are caused by Cumulonimbus and Nimbostratus clouds. Altostratus clouds

are middle-level clouds that produce light, continuous rain, and Cirrostratus are thin, high-altitude ice clouds that do not yield heavy showers at all.

While a Maritime Tropical (Mt) air mass is warm and highly humid, it is inherently unstable, not stable. The high temperature and abundant moisture cause the air to readily rise and develop severe convective storms.

Dewdrops form on clear, calm nights through terrestrial radiation cooling. On cloudy nights, the clouds act like a blanket, absorbing and reflecting back the Earth's longwave radiation. This prevents the ground temperature from dropping to the dew point, meaning dewdrops fail to form.

MCQ 69.

ANSWER: A

EXPLANATION

Suspended microscopic particles like dust, smoke, and sea salt are highly hygroscopic. They serve as the vital base nuclei around which airborne water vapour condenses to form cloud droplets.

The tropopause is significantly higher over the equator than over the poles due to intense convective lifting. Because air continues to cool with altitude through the troposphere, the much higher equatorial tropopause reaches a colder temperature compared to the lower polar tropopause.

While both are independent, accurate atmospheric facts, the vertical temperature variance of the tropopause does not influence

the chemical functionality of hygroscopic condensation nuclei at lower levels.

MCQ 70.

ANSWER: C

EXPLANATION

Cold fronts are steep and dense, moving up to twice as fast as warm fronts as they actively shove lighter warm air upward.

Mid-latitude frontal systems (extratropical cyclones) reach their peak development during winter due to the stark, intensified temperature contrast between polar and tropical air masses.

The "warm sector" is the unstable region of warm air trapped between the advancing cold front and leading warm front. During summer, strong solar heating combined with this volatile air triggers widespread convective thunderstorms.

A cold front's slope is characterized by a steep, forward-bulging blunt wedge shape—not an inverted "V".

MCQ 71.

ANSWER: D

EXPLANATION

Agulhas Current is a prominent warm current flowing southward along the east coast of Africa in the Indian Ocean.

Brazil Current is a warm current flowing southward along the east coast of South America in the South Atlantic.

Humboldt/Peru and California currents are classic cold currents flowing toward the equator.

MCQ 72.**ANSWER: B****EXPLANATION**

Absolute instability occurs when the Environmental Lapse Rate (ELR—the actual cooling rate of the surrounding atmosphere) is greater than the Dry Adiabatic Lapse Rate (DALR).

Any rising parcel of air (whether saturated or unsaturated) will cool slower than its surroundings. It stays consistently warmer and lighter than the air around it, creating a buoyant force that causes it to accelerate upward on its own.

MCQ 73.**ANSWER: B****EXPLANATION**

Repetti Discontinuity marks the internal boundary separating the upper mantle from the dense, solid lower mantle.

MCQ 74.**ANSWER: C****EXPLANATION**

The Arctic dipole is a major atmospheric circulation pattern characterized by a periodic reversal of pressure systems. Research highlights that its shifting phases play an essential role in driving dramatic drops in summer sea ice cover across the Arctic Ocean. The positive phase of the Arctic dipole features an anomalous high-pressure system positioned over the Beaufort Sea area and a corresponding low-pressure system anchored over the Siberian Arctic.

The pressure gradients generated by this specific wind alignment directly accelerate upper ocean currents. This circulation exerts year-round cascading impacts on regional air temperatures, ocean-atmosphere heat exchanges, sea-ice drift speeds, and delicate marine ecological systems.

MCQ 75.**ANSWER: C****EXPLANATION**

The polar-fleeing force (centrifugal force) was famously proposed by Alfred Wegener in his continental drift theory. It describes a force that pushes material away from the poles toward the equator, which is entirely generated by the rotation of the Earth.

Because the Earth spins on its axis, centrifugal forces act strongly at the equator. This has physically deformed the planet over deep time, causing it to structurally bulge at the equator and flatten at the poles.

The equatorial bulge is the direct structural proof of this centrifugal rotational force. Because this mass bulge exists due to rotation, objects experience a net gravitational-centripetal imbalance that creates the outward, polar-fleeing force toward the equator.

MCQ 76.**ANSWER: A****EXPLANATION**

The Shimon Peres Negev Nuclear Research Center (Dimona) is located deep within Israel's Negev Desert.



The Arabian Wolf is native to the Arabian Peninsula/Desert.

Bedouin Arabs are historically nomadic inhabitants of the Middle Eastern and Arabian Deserts.

The Arava Rift Valley forms part of the border between Israel and Jordan, linking it to the Negev/Arabian desert systems.

MCQ 77.

ANSWER: A

EXPLANATION

The classic, dense scrubland vegetation surrounding the Mediterranean basin is Maquis.

The hyper-diverse, distinctive shrubland ecosystem of the Western Cape region is Fynbos.

The famous drought-resistant, fire-adapted shrubland of the US west coast is called Chaparral.

The regional Mediterranean-climate sclerophyllous ecosystem of central Chile is known as Matorral.

MCQ 78.

ANSWER: C

EXPLANATION

Epiphytes are Equatorial plants like orchids that grow on other trees to reach sunlight in dense, wet tropical rainforests.

Acacia is the classic flat-topped, drought-hardy thorny trees scattered across tropical grasslands like Savanna.

Baobabs are native to the broader African Savanna/Sahel transition zone.

Cedars is famous mountain evergreens like the famous Cedars of Lebanon native to the cool, rainy Mediterranean winter highlands.

MCQ 79.

ANSWER: D

EXPLANATION

Helm - Bora - Mistral – Levant

Helm - A strong, cold northeasterly wind blowing over the northern parts of the United Kingdom.

Bora - A cold, dry, gusty northeasterly wind that descends into the Croatia/Italy.

Mistral - A cold, dry northwesterly wind that flows down through the Rhône Valley into southern France.

Levant - A moist easterly wind that blows through the Strait of Gibraltar at the southernmost tip of Spain/Europe.

MCQ 80.

ANSWER: C

EXPLANATION

The Van Allen radiation belts are two doughnut-shaped zones of highly energetic charged particles trapped by Earth's magnetosphere. These particles originate from the solar wind and cosmic rays.

MCQ 81.

ANSWER: D

EXPLANATION

Strong solar heating at the equator causes warm air to expand, become lighter, and rise vertically, generating the low-pressure ITCZ.

As this rising air travels poleward in the upper troposphere, it cools, sinks, and dynamically

accumulates around 30° North and South latitudes, building massive subtropical high-pressure cells.

Because descending air compresses, heats up adiabatically, and dries out, it completely suppresses cloud formation. This permanent lack of rainfall is directly responsible for creating the world's great subtropical deserts.

MCQ 82.

ANSWER: C

EXPLANATION

The geocorona is the luminous, outermost cloud of neutral hydrogen gas enveloping the Earth in the upper exosphere. Because these hydrogen atoms scatter solar ultraviolet light (Lyman-alpha radiation), it glows faintly and is distinctly visible as a halo in satellite images taken from space.

MCQ 83.

ANSWER: A

EXPLANATION

Atlas is the dominant northwest African mountain belt folding through Morocco.

Kilimanjaro, Africa's highest peak is a free-standing volcanic mountain of Tanzania.

Chimborazo of Ecuador is an inactive stratovolcano whose summit is the closest point on Earth's surface to the Moon due to the equatorial bulge.

Pyrenees is the major border mountain barrier dividing France and Spain.

MCQ 84.

ANSWER: A

EXPLANATION

P waves - S waves - Love waves - Rayleigh waves

P-waves - Compressional body waves that travel the fastest and register first on a seismograph.

S-waves - Shear body waves that move slower than P-waves, arriving second.

Surface Waves (Love and Rayleigh) - Travel the slowest but cause the most ground destruction.

MCQ 85.

ANSWER: A

EXPLANATION

The Doldrums are generated by intense, direct solar heating over equatorial latitudes.

This heating causes the air to become intensely buoyant and ascend vertically, inducing a global low-pressure zone.

Because the air is moving almost entirely upward rather than horizontally, surface winds are exceptionally weak, calm, or completely non-existent in the Doldrums.

MCQ 86.

ANSWER: C

EXPLANATION

Pyrocumulonimbus (pyroCb) clouds are severe, flammagenitus-type storm clouds generated by extreme, localized heat sources on the Earth's surface. While they are most commonly triggered by devastating wildfires, they are also frequently formed by massive volcanic eruptions. Intense thermal updrafts carry volcanic ash, smoke, and water vapour high into the atmosphere, creating a

thunderstorm-like cloud structure capable of generating its own lightning.

MCQ 87.

ANSWER: B

EXPLANATION

A guyot begins its life cycle as an active volcanic island. Over time, tectonic movement or crustal cooling causes the island to slowly sink. As it subsides, relentless ocean wave action at the sea surface completely erodes and flattens its peak. Eventually, it submerges entirely, leaving a distinct flat-topped seamount deep underwater.

MCQ 88.

ANSWER: B

EXPLANATION

Karst topography is fundamentally defined by the chemical dissolution of soluble bedrock by weakly acidic running water and groundwater.

It is most prominently and commonly developed limestone and dolomite rocks.

Karst landscapes develop extensively in temperate regions such as the classic Karst region in Slovenia, parts of Europe, and North America.

MCQ 89.

ANSWER: C

EXPLANATION

Agulhas Current is a powerful western boundary warm current that flows southward along the east coast of Africa in the Indian Ocean.

Florida current and Canary current belong to the Atlantic Ocean.

Kurile current belongs to the Pacific Ocean.

MCQ 90.

ANSWER: D

EXPLANATION

True black corals do not require light and can live in the dark deep sea, they completely lack symbiotic algae. They are strictly carnivorous and use their polyps to feed on passing plankton.

They belong to the order Antipatharia, can thrive from shallow waters down to extreme depths, and their living tissue is brightly coloured.

MCQ 91.

ANSWER: B

EXPLANATION

The Kurile Current also known as the Oyashio Current is a cold, subarctic subpolar current that sweeps southward from the Bering Sea along the northeastern coast of Asia. Because it originates in high-latitude regions fed by melting ice and low-evaporation waters, it carries low-salinity water, thereby reducing the salinity along the coasts it bathes.

MCQ 92.

ANSWER: D

EXPLANATION

Glauconite (a green iron-potassium silicate mineral) is exclusively the defining component found in Green mud, not coral mud. Coral mud consists almost entirely of

calcium carbonate derived from the skeletal remains of corals and calcareous algae.

Green mud owes its colour to potassium/iron silicates (glaucinite).

Blue mud gets its dark tint from iron sulphide.

Red mud is rich in ferric oxide.

MCQ 93.

ANSWER: C

EXPLANATION

On a completely clear night, there is no cloud cover to act as an insulating blanket. This allows the Earth's surface to freely release longwave terrestrial radiation directly out into space. This rapid and extreme radiational cooling drops the ground temperature below the freezing point, causing atmospheric water vapour to condense directly into frost.

MCQ 94.

ANSWER: C

EXPLANATION

The Mediterranean climate region is world-famous for orchard farming, particularly the commercial cultivation of citrus fruits. The region's unique climate pattern of warm, dry summers and mild, wet winters provides the ideal growing environment for these thick-skinned fruits.

MCQ 95.

ANSWER: B

EXPLANATION

Deep ocean trenches function as major downwelling zones in global thermohaline circulation. When dense, cold, polar-driven currents flow across the ocean floor and meet

these massive structural chasms, gravity forces the heavy, dense water masses to plunge and descend downward into the depths of the trench.

MCQ 96.

ANSWER: B

EXPLANATION

A cloudburst is associated with highly convective, cyclonic conditions or intense low-pressure instability, rather than an anticyclone. Anticyclonic conditions bring sinking air and clear, dry weather.

By definition, a cloudburst is a sudden, aggressive, and exceptionally heavy rainstorm often accompanied by thunder and hail.

A key characteristic of a cloudburst is its highly localized nature; it dumps massive volumes of water over a short period of time within a very limited geographic area.

MCQ 97.

ANSWER: B

EXPLANATION

Driven by global planetary wind systems and the twisting motion of the Coriolis force, large circular ocean currents loop together to form massive circular systems called ocean gyres.

While the statement correctly identifies the Kuroshio, North Pacific, California, and North Equatorial currents, it states that the North Pacific Subtropical Gyre moves in an anticlockwise direction. Because of the Coriolis effect, all subtropical gyres in the

Northern Hemisphere rotate in a clockwise direction.

The vast, sweeping circulation system of the broader Pacific boundary currents directly impacts, frames, or flows adjacent to the coastal zones of roughly 51 Pacific Rim nations and territories.

MCQ 98.

ANSWER: B

EXPLANATION

When the body overheats, it produces sweat. As this moisture evaporates off the human skin, it takes thermal energy with it, absorbing latent heat and effectively dissipating body heat to cool you down.

High atmospheric humidity on a hot day means the surrounding air is already saturated with moisture. This severely slows down or prevents the evaporation of sweat, trapping heat and significantly increasing human discomfort.

MCQ 99.

ANSWER: A

EXPLANATION

The Mekong River originates in the high-altitude glaciers of the Tibetan Plateau, from where it flows through China, Myanmar, Laos, Thailand, Cambodia, and Vietnam.

The massive Mekong Delta is situated in Southern Vietnam, south of Ho Chi Minh City where the river empties into the South China Sea, not in Southern Cambodia.

MCQ 100.

ANSWER: A

EXPLANATION

June 21st is the Summer Solstice in the Northern Hemisphere. On this day, the Earth's North Pole is tilted at its maximum angle toward the Sun. As a result, the region north of the Arctic Circle experiences 24 hours of continuous daylight ("Midnight Sun"), meaning the Sun does not drop below the horizon line at all.

MCQ 101.

ANSWER: D

EXPLANATION

The Darling Range (also known as the Darling Scarp) is a prominent low landform range located along the South-Western Coast of Western Australia, running just east of the coastal plain near the city of Perth

MCQ 102.

ANSWER: B

EXPLANATION

Temperature inversion brings atmospheric stability, not instability. Cold air near the surface is dense and cannot rise, suppressing vertical convection.

The calm air and surface cooling associated with inversion trap moisture at low levels, leading to fog and frost formation.

It creates a stable, high-pressure environment that favors anticyclonic conditions.

MCQ 103.

ANSWER: B

EXPLANATION

The Sargasso Sea in the North Atlantic Ocean is uniquely characterized by its vast mats of

free-floating brown seaweed called Sargassum, which provides a crucial habitat for diverse marine life.

MCQ 104.**ANSWER: C****EXPLANATION**

The continental crust reaches its maximum thickness (up to 70-100 km) beneath major mountain systems like the Himalayas.

Oceanic crust is mainly composed of basalt, making it denser (3.0g/cm^3) than the granitic continental crust (2.7 g/cm^3). This density difference drives oceanic subduction.

Magma that erupts from volcanoes originates in the asthenosphere, the semi-fluid, upper layer of the Earth's mantle.

MCQ 105.**ANSWER: B****EXPLANATION**

The Leeuwin Current is a unique warm-water current that flows poleward from the tropical waters near Indonesia, traveling southward along the western coast of Australia.

MCQ 106.**ANSWER: A****EXPLANATION**

The Pontus plate was subducted beneath the Australian and Chinese plates, not the African plate.

It was a massive plate, roughly a quarter of the size of the Pacific Ocean, beneath the ancient Pontus Ocean.

The accidental discovery occurred while studying rock formations in Borneo.

MCQ 107.**ANSWER: A****EXPLANATION**

The Kara Kum Desert (Black Sand Desert) covers about 70% of the land area of Turkmenistan in Central Asia.

MCQ 108.**ANSWER: B****EXPLANATION**

Corals require warm, sediment-free, clear water with ample sunlight to thrive. India's west coast experiences significant southwest monsoon-driven cold-water upwelling, which lowers temperatures below the optimal range for coral growth. Additionally, major rivers discharge massive sediment loads into the Arabian Sea, increasing turbidity (muddiness), which blocks essential sunlight and smothers coral polyps.

MCQ 109.**ANSWER: C****EXPLANATION**

The High Seas Treaty is formally known as the BBNJ Agreement (Biodiversity Beyond National Jurisdiction). It operates as an international agreement under the United Nations Convention on the Law of the Sea (UNCLOS) to protect marine life in international waters.

MCQ 110.**ANSWER: A****EXPLANATION**

Under the United Nations Convention on the Law of the Sea (UNCLOS), a coastal state has sovereign rights in its Exclusive Economic Zone (EEZ) for exploring, exploiting, conserving, and managing natural resources. This explicitly includes deep-sea mining of the seabed and energy production from water, currents, and winds.

MCQ 111.

ANSWER: C

EXPLANATION

Both the Kanto Plain (the largest plain in Japan, home to Tokyo) and the Nobi Plain (centered around Nagoya) are major, highly urbanized physiographic regions located on the island of Honshu, Japan.

MCQ 112.

ANSWER: B

EXPLANATION

Mount Rainier - U.S.A.

Mount Etna - Italy (Sicily)

Mount Parícutin - Mexico (Michoacán)

Mount Apo - Philippines (Mindanao)

MCQ 113.

ANSWER: B

EXPLANATION

The Contiguous Zone is a band of water extending further out from the outer edge of the Territorial Sea (up to 24 nautical miles from the baseline). It sits as a buffer zone between the strictly regulated territorial waters and the fully open high seas.

MCQ 114.

ANSWER: C

EXPLANATION

According to UNCLOS Article 19, passage is innocent as long as it is not prejudicial to the peace, good order, or security of the coastal state. Espionage (collecting information to the prejudice of the defense or security of the coastal state) is strictly considered a threat and NOT innocent passage.

Active fishing without permission violates innocent passage, but navigation and continuous movement are core definitions of it.

MCQ 115.

ANSWER: C

EXPLANATION

Statement (c) defines a storm surge, not the Fujiwhara effect.

Statements (a), (b), and (d) are all completely accurate descriptions of the Fujiwhara effect, which details how two close-proximity tropical cyclones orbit around a common center and can occasionally merge into one mega-storm.

MCQ 116.

ANSWER: C

EXPLANATION

Nimbus clouds are dense, dark, low-level clouds that produce continuous rain or snow.

Stratocumulus clouds typically form low, gray patches with a regular honeycomb pattern.

Cumulus clouds are the classic fluffy, cotton-ball-shaped fair-weather clouds.

Altostratus clouds are mid-level cloud sheets showing small rows or ripples.

MCQ 117.**ANSWER: B****EXPLANATION**

Moving from west to east along the Sunda volcanic arc, the geographical order of the major Indonesian islands is Sumatra - Java - Bali - Lombok.

MCQ 118.**ANSWER: C****EXPLANATION**

Albedo measures a surface's ability to reflect solar radiation. Fresh snow has the highest albedo of any natural material on Earth, reflecting up to 80% to 95% of incoming sunlight.

Sand deserts reflect about 30–40%, while crop lands and prairie lands possess dark vegetative cover that absorbs the majority of sunlight, reflecting only 15–25%.

MCQ 119.**ANSWER: D****EXPLANATION**

Pacific Ocean - Mariana Trench (Challenger Deep)

Arctic Ocean - Molloy Deep

Indian Ocean - Sunda Trench

Atlantic Ocean - Rico Trench (Milwaukee Deep)

MCQ 120.**ANSWER: C****EXPLANATION**

The Prime Meridian (0° Longitude) passes directly through Ghana, specifically

intersecting the industrial city of Tema, which sits immediately adjacent to the capital city, Accra.

MCQ 121.**ANSWER: D****EXPLANATION**

A stream requires a steeper slope—not a gentler one—to capture another stream. Higher gradients increase kinetic energy, accelerating headward erosion to breach watersheds and intercept neighbouring channels.

River capture routinely occurs on the windward side of mountain ranges. This slope receives higher orographic precipitation, fuelling stronger river discharge and aggressive erosive power.

MCQ 122.**ANSWER: D****EXPLANATION**

The fundamental engine pushing lithospheric plates is the convective movement of magma within the Earth's mantle and asthenosphere. Heated, less dense material rises while cooler material sinks, creating massive circular thermal currents that drag tectonic plates sideways.

MCQ 123.**ANSWER: B****EXPLANATION**

According to the UN Convention on the Law of the Sea (UNCLOS), a sovereign coastal nation's Territorial Sea extends a maximum of

12 nautical miles outward from its coastal baseline.

MCQ 124.

ANSWER: B

EXPLANATION

Pelagic red clay (brown clay) accumulates slowly in deep ocean basins far from land. It consists of windblown terrestrial dust, meteoric debris, and fine volcanic ash dust. Its signature red-brown color originates from the chemical oxidation of iron minerals.

MCQ 125.

ANSWER: B

EXPLANATION

Sinkholes form in regions governed by Karst topography (dissolvable carbonate bedrocks), rather.

Karst chemical dissolution by weakly acidic groundwater is a slow, multi-millennial process.

Structural collapses can trigger through natural water tables shifting or human activities like excessive groundwater pumping and mining.

MCQ 126.

ANSWER: C

EXPLANATION

The Dry Adiabatic Lapse Rate (DALR) explicitly defines the rate at which an unsaturated air parcel cools as it ascends or warms as it descends, purely due to expansion or compression under adiabatic conditions.

The exact value of DALR is (10°C per kilometre (or 1°C per 100 meters).

If the environmental lapse rate is less than the DALR, the atmosphere is considered stable because any rising unsaturated air parcel will quickly become cooler and denser than its surroundings, causing it to sink back down.

MCQ 127.

ANSWER: A

EXPLANATION

Stalactites grow downwards hanging from the roof of a cave.

Stalagmites grow upwards from the floor of the cavern, built by mineral-rich drops falling from above.

A Bourne (or winterbourne) is a recognized term for an intermittent stream or dry valley found specifically in limestone and chalk regions.

MCQ 128.

ANSWER: C

EXPLANATION

A monadnock (or inselberg) is an isolated remnant hill or ridge that rises sharply out of a gently sloping, eroded plain.

A zeugen is a mushroom or table-shaped rock structure formed in arid regions where wind abrasion cuts away lower, softer rock layers quicker than the harder capping layers above. Yardangs are long, streamlined, sharp-crested ridges carved by wind erosion that run perfectly parallel to the direction of the prevailing wind.

MCQ 129.

ANSWER: D

EXPLANATION

Borneo is politically divided among three countries: Indonesia (Kalimantan), Malaysia (Sabah and Sarawak), and the independent sultanate of Brunei.

Borneo was formed primarily through tectonic accretion and sedimentary processes. It sits on a stable continental fragment and was not created by volcanic deposition.

MCQ 130.

ANSWER: A

EXPLANATION

Love waves are a specific category of surface seismic waves that travel exclusively along the Earth's crust rather than through the deep interior.

They force the ground to move in a horizontal, shearing motion that is strictly perpendicular to the direction the wave is traveling.

Love waves are transverse waves (shear waves).

Primary (P) waves are the ones that are longitudinal.

MCQ 131.

ANSWER: C

EXPLANATION

Absolute humidity measures the exact mass of water vapor present per unit volume of an air-vapor mixture.

Specific humidity represents the ratio of the mass of moisture to the total mass of the air parcel.

Relative humidity is a percentage comparing the current vapor content against the

maximum capacity the air can physically hold.

MCQ 132.

ANSWER: C

EXPLANATION

Geologic displacement pushes molten rock (magma) up into shallower reservoirs within the Earth's crust, creating concentrated pockets of intense heat known as hot spots.

When deep underground water tables seep close to these magmatic heat reservoirs, the extreme thermal transfer boils the water, generating high-pressure steam.

This scalding water and steam follow fissures to breach the surface, appearing naturally as roaring geysers or bubbling hot springs.

MCQ 133.

ANSWER: B

EXPLANATION

Daylight Saving Time (DST) is the seasonal practice of advancing clocks forward by one hour in the spring ("spring forward") and winding them back in autumn, reducing the reliance on artificial lighting.

MCQ 134.

ANSWER: A

EXPLANATION

Active vertical and lateral erosion in the upper course generates sediment, but it is the extensive lateral erosion and deposition in the lower course (old stage) of the river that unloads the vast sediment plains required to construct a delta.

For sediments to compile efficiently at a river mouth, the coastal waters must be shallow and sheltered, ideally featuring minimal or weak tides to prevent the deposits from washing out to sea.

Ocean currents at the deposition site must be weak. If powerful currents cross the river mouth at right angles, they act as a conveyor belt that sweeps the sediment away before a delta can form.

MCQ 135.

ANSWER: A

EXPLANATION

Incoming solar energy reaches the Earth as short-wave radiation, which easily passes through atmospheric gases to heat the Earth's surface. The warmed ground then re-radiates this energy back toward space as long-wave terrestrial radiation (infrared). Greenhouse gases selectively absorb these long waves, heating the atmosphere from the bottom up.

MCQ 136.

ANSWER: B

EXPLANATION

The Pampero is a bursting, cold polar wind that sweeps across the Pampas plains of Argentina and Uruguay.

The Simoom is an intensely hot, dry, and dust-laden desert wind that blows heavily across the Arabian Peninsula, extending into regions like Israel, Jordan, and Syria.

The Zonda is a warm, dry foehn-type wind that descends the eastern slopes of the Andes mountains into Argentina.

MCQ 137.

ANSWER: C

EXPLANATION

The crust is the uppermost layer over the Earth's surface and is the thinnest of all layers, making up less than 1% of the Earth's total volume.

The continental mass is primarily composed of silica and alumina, which is why it is commonly referred to as SIAL.

The oceanic crust is thinner and composed mainly of silica and magnesium, historically referred to as SIMA.

MCQ 138.

ANSWER: B

EXPLANATION

Loess is primarily an aeolian (windblown) sedimentary deposit. Wind picks up fine-grained, unstratified silt from desert regions or glacial outwash plains and deposits it over vast areas.

Moraines are accurate glacial depositional features made of unsorted debris (till).

A Drumlin field is classic glacial deposition and is widely nicknamed the "basket of eggs".

Lapies are grooved, fluted, comb-like surface features carved through the chemical dissolution of limestone by underground water.

MCQ 139.

ANSWER: C

EXPLANATION

Any cyclone is meteorologically defined as a localized low-pressure system where

surrounding air masses converge inward and rapidly rise.

Typically, cyclones dissipate quickly over land due to cut-off moisture and friction. However, if a tropical cyclone interacts with an active western disturbance, the upper-level wind dynamics can supply alternative moisture and energy, allowing it to sustain or intensify inland.

Heavy precipitation and updrafts associated with massive tropical cyclones.

MCQ 140.

ANSWER: D

EXPLANATION

An arete is a sharp, narrow, knife-like ridge separating two adjacent cirques.

A Horn, like the Matterhorn is a sharp pyramid peak.

Eskers are long, winding, sinuous ridges of stratified sand and gravel deposited by meltwater streams running through subglacial tunnels.

Kames or Knolls are humps in a till plain.

MCQ 141.

ANSWER: A

EXPLANATION

A classic description of the Equatorial Climate because the sun remains high in the sky year-round near the equator, intense solar heating throughout the morning leads to rapid convection. By mid-afternoon, moisture-laden air condenses into towering cumulonimbus clouds, culminating in daily

convective 4 o'clock rainfall accompanied by thunder and lightning.

MCQ 142.

ANSWER: D

EXPLANATION

A Dalmatian coast is formed by the submergence of mountain ridges running perfectly parallel (longitudinal) to the shoreline, creating a chain of elongated islands.

A Fjord coast is created by the submergence of deep, U-shaped glacial valleys after a glacier melts and retreats.

A Ria coast is formed by the submergence of an unglaciated river valley dissected by streams.

MCQ 143.

ANSWER: C

EXPLANATION

During a total lunar eclipse, the Earth blocks direct sunlight from reaching the Moon. However, sunlight still passes through the edges of Earth's atmosphere. The atmosphere filters out and scatters shorter wavelengths via Rayleigh scattering, while longer wavelengths like red and orange pass through. This red light is bent (refracted) onto the Moon's surface, giving it a reddish glow.

MCQ 144.

ANSWER: C

EXPLANATION

The Mediterranean climate is globally distinguished by its dry summers and wet winters.

During the summer, these regions shift under the heavy influence of subtropical high-pressure belts and dry terrestrial (offshore) trade winds that suppress precipitation. In the winter, the wind belts shift equatorward, bringing the moist, rain-bearing maritime Westerlies to the region.

MCQ 145.

ANSWER: C

EXPLANATION

In Karst landscapes, streams that lose their surface water through bed cracks and fissures into underground networks are called sinking creeks. When their tops are open, they are specifically termed Bogas.

A Tombolo is a coastal depositional feature where a spit or wave-built sandbar connects an offshore island to the mainland.

Bolsons are large, enclosed intermontane basins (desert valleys) typical of arid and semi-arid regions.

MCQ 146.

ANSWER: C

EXPLANATION

A White Dwarf is the hot, dense, dead core left behind after a low-to-medium mass star burns through its nuclear fuel, expels its outer layers into a planetary nebula, and collapses under gravity.

MCQ 147.

ANSWER: B

EXPLANATION

The vast majority of known asteroids in our Solar System are clustered inside the Main

Asteroid Belt, a torus-shaped region situated circumferentially between the orbits of the planets Mars and Jupiter.

MCQ 148.

ANSWER: B

EXPLANATION

Seafloor spreading occurs fundamentally along mid-ocean ridges, which act as divergent tectonic plate boundaries where upwelling magma creates new oceanic crust.

The East Pacific Rise is a prominent mid-ocean ridge in the eastern Pacific Ocean that actively separates the Pacific plate from the Nazca plate.

The Southeast Indian Ridge marks a divergent boundary where the Indo-Australian plate separates from the Antarctic plate, not the Atlantic plate.

MCQ 149.

ANSWER: B

EXPLANATION

According to WMO guidelines, names must be selected carefully to ensure they do not hurt the sentiments of any group of population or religion globally.

The maximum permitted length for a tropical cyclone name is strictly eight letters, not twelve.

Over the North Indian Ocean, names assigned to tropical cyclones are used once and will not be repeated.

The panel overseeing names is part of the WMO.

MCQ 150.

ANSWER: D

EXPLANATION

The Shamal is a hot, dry, dust-laden northwesterly local wind that blows across Mesopotamia (Iraq, Persian Gulf states, and Saudi Arabia).

Leveche is a hot, dry, dust-laden wind that blows from North Africa onto the southern coast of Spain.

Brickfielder is a scorching, dust-laden summer wind that blows across southeastern Australia.

Black roller is an intense, dust-laden storm wind experienced on the Great Plains of North America (USA)