Tectonic Plates Quiz Questions and Answers PDF

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Which type of boundary is the San Andreas Fault an example of?

- ◯ Convergent
- ◯ Divergent
- ◯ **Transform ✓**
- ◯ Subduction

> The San Andreas Fault is a transform boundary where two tectonic plates slide past each other horizontally. This type of boundary is characterized by lateral movement, which can lead to earthquakes.

Which major tectonic plate is the largest?

- ◯ African Plate
- ◯ **Pacific Plate ✓**
- ◯ Eurasian Plate
- ◯ North American Plate

> The Pacific Plate is the largest tectonic plate, covering an area of about 103 million square kilometers. It is primarily located beneath the Pacific Ocean and is known for its significant geological activity, including earthquakes and volcanic eruptions.

Which type of plate boundary is characterized by plates moving apart?

- ◯ Convergent
- ◯ **Divergent ✓**
- ◯ Transform
- ◯ Static

> Divergent boundaries are where tectonic plates move apart from each other, leading to the formation of new crust as magma rises to the surface. This process is commonly seen at mid-ocean ridges.

Describe the process of sea-floor spreading and its significance in plate tectonics.

Sea-floor spreading occurs at mid-ocean ridges where magma rises to create new oceanic crust, pushing older crust away from the ridge, which is crucial for understanding plate tectonics.

Which plates are involved in the formation of the Himalayas? (Select all that apply)

- [ ] Pacific Plate
- [ ] **Indian Plate ✓**
- [ ] **Eurasian Plate ✓**
- [ ] African Plate

The formation of the Himalayas involves the collision of the Indian Plate and the Eurasian Plate, which are the primary tectonic plates responsible for this mountain range's uplift.

What evidence supports the theory of continental drift proposed by Alfred Wegener?

The evidence supporting Wegener's theory includes the jigsaw-like fit of continents, identical fossils found on widely separated landmasses, matching geological structures across continents, and paleoclimatic indicators that suggest continents were once positioned differently.

Compare and contrast oceanic and continental crust in terms of composition and thickness.

Oceanic crust is thinner and denser, primarily made of basalt, while continental crust is thicker and less dense, primarily composed of granitic rocks.

How do tectonic plates influence the occurrence and distribution of earthquakes globally?

Earthquakes primarily occur along tectonic plate boundaries due to the movement and interaction of these plates, which can cause stress to build up and eventually release.

Which of the following are major tectonic plates? (Select all that apply)

- [x] **Pacific Plate ✓**
- [ ] Nazca Plate
- [x] **Indo-Australian Plate ✓**
- [ ] Cocos Plate

Major tectonic plates include the Pacific Plate, North American Plate, Eurasian Plate, African Plate, South American Plate, Antarctic Plate, and Indo-Australian Plate. These plates are large sections of the Earth's lithosphere that move and interact at their boundaries, causing geological activity such as earthquakes and volcanic eruptions.

What geological feature is commonly formed at convergent boundaries?

- ○ Ocean trenches
- ○ Mid-ocean ridges
- ○ Earthquakes
- ○ **Mountain ranges ✓**

> Convergent boundaries are characterized by the collision of tectonic plates, which often leads to the formation of mountain ranges, deep ocean trenches, and volcanic arcs.

What phenomena are commonly associated with tectonic plate boundaries? (Select all that apply)

- [ ] **Earthquakes ✓**
- [ ] Hurricanes
- [ ] **Volcanic eruptions ✓**
- [ ] **Mountain building ✓**

> Common phenomena associated with tectonic plate boundaries include earthquakes, volcanic activity, mountain building, and ocean trench formation. These events occur due to the movement and interaction of tectonic plates.

What is the Earth's lithosphere composed of?

- ◯ Only the crust
- ◯ Only the mantle
- ◯ **The crust and upper mantle ✓**
- ◯ The core and mantle

> The Earth's lithosphere is composed of the crust and the uppermost part of the mantle, which together form the rigid outer layer of the Earth. This layer is essential for tectonic activity and supports life on the planet's surface.

What are tectonic plates?

- ◯ Layers of the atmosphere
- ◯ **Large pieces of the Earth's lithosphere ✓**
- ◯ Types of ocean currents
- ◯ Forms of weather patterns

> tectonic plates are large, rigid pieces of the Earth's lithosphere that move and interact at their boundaries, causing geological phenomena such as earthquakes and volcanic activity.

What is the primary cause of tectonic plate movement?

- ◯ Ocean currents
- ◯ Gravitational pull
- ◯ **Convection currents in the mantle ✓**
- ◯ Wind patterns

> The primary cause of tectonic plate movement is the convection currents in the Earth's mantle, which are driven by heat from the Earth's core. These currents create forces that push and pull the plates in different directions.

Explain how convection currents in the mantle contribute to the movement of tectonic plates.

> **Convection currents in the mantle contribute to the movement of tectonic plates by creating a cycle of rising hot material and sinking cooler material, which generates forces that drive the plates apart or together.**

Which of the following are minor tectonic plates? (Select all that apply)

- [x] **Nazca Plate ✓**
- [ ] South American Plate
- [x] **Cocos Plate ✓**
- [ ] Antarctic Plate

> Minor tectonic plates are smaller than the major tectonic plates and include plates such as the Juan de Fuca Plate, the Cocos Plate, and the Nazca Plate. Identifying these plates is important for understanding geological activity and tectonic movements.

Discuss the impact of tectonic plate movement on the Earth's surface and ecosystems.

The impact of tectonic plate movement on the Earth's surface includes the creation of geological features such as mountains and valleys, as well as natural disasters like earthquakes and volcanic eruptions, which can drastically change ecosystems and biodiversity.

Which of the following statements about divergent boundaries are true? (Select all that apply)

- [ ] Plates move towards each other
- [ ] **New crust is formed ✓**
- [ ] **They are associated with mid-ocean ridges ✓**
- [ ] Plates slide past each other

Divergent boundaries are characterized by tectonic plates moving apart, leading to the formation of new crust, typically seen at mid-ocean ridges. They are associated with volcanic activity and earthquakes as magma rises to fill the gap created by the separating plates.

Which scientist is credited with the theory of continental drift?

- ◯ Charles Darwin
- ◯ **Alfred Wegener ✓**
- ◯ Isaac Newton
- ◯ Marie Curie

The theory of continental drift is primarily attributed to Alfred Wegener, who proposed that continents were once joined together and have since drift apart over geological time. His ideas laid the groundwork for the modern theory of plate tectonics.

What are characteristics of transform boundaries? (Select all that apply)

- [ ] **Plates slide past each other ✓**
- [ ] New crust is created
- [ ] **Earthquakes are common ✓**
- [ ] Volcanic activity is frequent

Transform boundaries are characterized by the lateral sliding of tectonic plates, leading to earthquakes and the formation of fault lines. They do not typically create or destroy crust, unlike convergent or divergent boundaries.