

Planetary Geology and Astrogeology

Geology · Practice Test · 12 Questions

1. Which mineral is uniquely identified as the primary constituent of the 'blueberries' found by the Opportunity rover on Mars, indicating past aqueous activity?

- A) Hematite
- B) Magnetite
- C) Ilmenite
- D) Chromite

2. What is the primary geological mechanism responsible for the ongoing resurfacing of Jupiter's moon Io?

- A) Cryovolcanism
- B) Tidal heating
- C) Solar wind erosion
- D) Subduction zones

3. The 'Tharsis Bulge' on Mars is a massive volcanic plateau primarily formed by which type of geological structure?

- A) Shield volcanoes
- B) Stratovolcanoes
- C) Cinder cones
- D) Caldera complexes

4. What is the chemical composition of the 'dunes' discovered by the New Horizons spacecraft in the Sputnik Planitia region of Pluto?

- A) Water ice
- B) Solid nitrogen
- C) Solid carbon dioxide
- D) Silicate sand

5. Which lunar geological feature is caused by the cooling and contraction of the Moon's interior as it loses heat?

- A) Lobate scarps
- B) Graben
- C) Rilles
- D) Mare ridges

6. The 'Great Red Spot' of Jupiter is a cyclonic storm, but which geological feature on Venus is considered a unique 'pancake' volcanic formation?

- A) Coronae
- B) Farra
- C) Tesserae
- D) Rift valleys

7. What is the primary constituent of the crust of Mercury, which is notably thinner than the Earth's crust relative to the planet's size?

- A) Basaltic rock
- B) Anorthositic rock
- C) Granitic rock
- D) Peridotite

8. Enceladus, a moon of Saturn, exhibits cryovolcanism primarily at which specific geological location?

- A) Tiger stripes
- B) The Great Dark Spot
- C) Herschel crater
- D) The equatorial bulge

9. What term describes the large, circular, elevated geological structures on Venus formed by upwelling mantle plumes?

- A) Coronae
- B) Calderas
- C) Shields
- D) Massifs

10. Which impact basin on Mars is the largest known impact structure in the solar system, measuring approximately 8,500 km in diameter?

- A) Hellas Planitia
- B) Utopia Planitia
- C) Borealis Basin
- D) Argyre Planitia

11. The 'Valles Marineris' on Mars is classified geologically as which type of feature?

- A) Tectonic rift system
- B) Erosional canyon
- C) Impact scar
- D) Volcanic conduit

12. What mineral phase, formed under extreme high-pressure conditions during meteorite impacts, is found in the Earth's crust as evidence of past bombardment?

- A) Stishovite
- B) Olivine
- C) Pyroxene
- D) Feldspar