

Celestial Cartography and Planetary Mapping

Cartography · Practice Test · 20 Questions

1. In planetary cartography, what is the 'areocentric' coordinate system used to map?

- A) Venus
- B) Mars
- C) Jupiter
- D) Saturn

2. Which international body is responsible for assigning official names to features on planetary surfaces?

- A) IAU
- B) NASA
- C) ESA
- D) COSPAR

3. What is the term for the reference surface used to define 'zero elevation' on a planet lacking a liquid ocean, such as Mars?

- A) Geoid
- B) Areoid
- C) Ellipsoid
- D) Topoid

4. The 'IAU Working Group for Planetary System Nomenclature' mandates that craters on Venus are named after what?

- A) Famous scientists
- B) Renowned explorers
- C) Historical female figures
- D) Mythological deities

5. What specific type of map projection is most commonly used by the USGS for rendering the entire surface of a spherical planet onto a flat plane?

- A) Mercator
- B) Equirectangular
- C) Gnomonic
- D) Lambert Conformal

6. Which lunar feature serves as the primary longitudinal reference point (0 degrees longitude) for the Moon?

- A) Tycho Crater
- B) Mare Tranquillitatis
- C) The center of the crater Bruce
- D) The lunar north pole

7. What measurement is used to define the 'selenographic' latitude?

- A) The angle between the equator and a point measured from the center
- B) The angle relative to the ecliptic plane
- C) The distance from the sub-Earth point
- D) The gravitational potential gradient

8. Which cartographic tool is essential for correcting the geometric distortion in images taken by planetary orbiters with off-nadir viewing angles?

- A) Ortho-rectification
- B) Barycentric correction
- C) Doppler shift mapping
- D) Relativistic projection

9. What defines the 'prime meridian' of Mercury according to IAU standards?

- A) The center of the crater Hun Kal
- B) The crater Kuiper
- C) The sub-solar point at perihelion
- D) The crater Basho

10. In celestial cartography, what coordinate system is based on the Earth's orbit around the Sun?

- A) Galactic coordinate system
- B) Ecliptic coordinate system
- C) Horizontal coordinate system
- D) Equatorial coordinate system

11. What is the 'IAG' standard reference ellipsoid for the Earth?

- A) GRS 80
- B) WGS 84
- C) NAD 83
- D) IERS 2000

12. The mapping of the far side of the Moon was primarily accomplished using data from which mission series?

- A) Apollo
- B) Luna
- C) Lunar Reconnaissance Orbiter
- D) Surveyor

13. Which term describes the process of aligning a planetary map to a known grid of star coordinates?

- A) Astrometric registration
- B) Triangulation
- C) Photogrammetry
- D) Spectroscopic mapping

14. Why is the 'geoid' height concept difficult to apply directly to gas giants like Jupiter?

- A) They lack a solid, well-defined surface
- B) They have no magnetic field
- C) They rotate too slowly
- D) They contain no heavy elements

15. What is the standard reference frame for mapping the outer Solar System, defined by the IERS?

- A) ICRF
- B) J2000
- C) B1950
- D) Galactic plane

16. When mapping asteroid 433 Eros, what coordinate system origin is used?

- A) The asteroid's center of mass
- B) The crater Psyche
- C) The asteroid's highest peak
- D) The sub-Earth point at discovery

17. Which map projection preserves the area of regions on planetary globes, often used for global distribution maps?

- A) Mollweide
- B) Mercator
- C) Transverse Mercator
- D) Azimuthal Equidistant

18. What is the IAU-defined prime meridian for the planet Venus?

- A) The central meridian of the crater Ariadne
- B) The crater Cleopatra
- C) The crater Sappho
- D) The crater Alpha

19. In orbital cartography, what is 'nadir' viewing?

- A) Looking directly down toward the center of the planet
- B) Looking toward the horizon
- C) Looking perpendicular to the orbit
- D) Looking in the direction of travel

20. The 'International Celestial Reference Frame' (ICRF) is anchored by the positions of what type of objects?

- A) Quasars
- B) Pulsars
- C) Exoplanets
- D) White dwarfs