

# Planetary Astronomy. Review Questions on Mars

1. Who saw canals on Mars and thought they were built by extraterrestrials?  
(a) Schiaparelli      (b) Capt Obvious      (c) Cassini      (d) Tombaugh  
(e) Lowell
2. Mars will appear the most favorably when its opposition coincides with \_\_\_\_\_.  
(a) Mars' perihelion and Earth's aphelion  
(b) Mars' perihelion and Earth's perihelion  
(c) Mars' aphelion and Earth's quadrature  
(d) Mars' aphelion and Earth's aphelion  
(e) Mars' conjunction and Earth's perihelion
3. Mars' southern polar ice cap, when at its largest, is made mostly of \_\_\_\_\_.  
(a) Oxygen      (b) calcium minerals      (c) water ice      (d) dry ice (CO<sub>2</sub>)  
(e) iron oxides
4. T or F. Mars has a high percentage of CO<sub>2</sub> in its atmosphere, just like Venus, and this makes Mars hotter than the Earth.
5. T or F. Rocks from Mars have been found in Antarctica on Earth.
6. T or F. The surface pressure of Mars oscillates with the seasons as CO<sub>2</sub> freezes onto, and sublimates off of the polar ice caps.
7. Evidence for the highest volume flow rates (10<sup>7</sup> tons of water per second) are seen in the Martian features called  
(a) runoff channels      (b) outflow channels      (c) rivers      (d) avalanches  
(e) rilles
8. The biggest \_\_\_\_\_ known in the solar system is on Mars on the northwest edge of the Tharsis Bulge.
9. The \_\_\_\_\_ on \_\_\_\_\_ is just a mesa; a good example of pareidolia.
10. The Moons of Mars are \_\_\_\_\_ and \_\_\_\_\_, from the Greek for "fear" and "panic".

11. Oppositions of Mars occur about once every
- (a) 15 months      (b) 1.5 years      (c) 2.1 years      (d) 243 days
  - (e) 24.6 hours
12. The southern winter is longer than the northern winter on Mars because of the planet's
- (a) tilt      (b) eccentric orbit      (c) polar caps      (d) moons
  - (e) asymmetric shape
13. The moons of Mars are
- (a) formed following a collision with the Earth.
  - (b) probably captured asteroids.
  - (c) the remnants of a larger moon.
  - (d) formed simultaneously with Mars.
14. The largest and deepest impact basin found on Mars is:
- (a) Olympus    (b) Caloris    (c) Hellas    (d) Tharsis    (e) Meridani
15. Which of these are not currently on the surface of Mars?
- (a) Mars Global Surveyor      (b) Viking 1      (c) Curiosity      (d) Opportunity      (e) Spirit
16. How does the axial tilt of Mars compare with our own?
- (a) Like Jupiter, Mars always keeps its equator pointing at the Sun.
  - (b) It is about half our own, 12 degrees.
  - (c) It is almost identical to the Earth.
  - (d) Like Saturn, it's about 27 degrees.
  - (e) Like Uranus, it is 98 degrees and flopped over on its side.
17. Why is Mars red?
- (a) Dust storms on the planet have blasted the planet so fiercely that the rocks have reddened.
  - (b) The iron in the surface rocks have been oxidized over time.
  - (c) Mercuric oxide is abundant and has a red tint.

- (d) Sulfuric acid rain etched a reddish color into iron-rich surface rocks.
  - (e) The ancient volcanoes poured out vast plains of molten sulfur, much as on Io, which has now solidified and preserved the reddish color.
18. T or F. There has been tantalizing evidence for simple life on Mars, but nothing certain.
19. T or F. The Moons of Mars both orbit counter-clockwise but one appears to move W to E and the other moves E to W in the Martian sky.
20. The weakness of the magnetic field of Mars is because:
- (a) it spins much slower than Earth does.
  - (b) it core may no longer be molten.
  - (c) its core contains less metallic iron than our own.
  - (d) Both B and C are probable.
  - (e) All of the above are correct.