

Name \_\_\_\_\_

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

- 1) What is the *ecliptic*? 1) \_\_\_\_\_
- A) the Moon's apparent path along the celestial sphere
  - B) the Sun's daily path across the sky
  - C) when the Moon passes in front of the Sun
  - D) the constellations commonly used in astrology to predict the future
  - E) the Sun's apparent path along the celestial sphere
- 2) Which of the following correctly describes the *meridian* in your sky? 2) \_\_\_\_\_
- A) a half-circle extending from your horizon due north, through your zenith, to your horizon due south
  - B) a half-circle extending from your horizon due east, through your zenith, to your horizon due west
  - C) the boundary between the portion of the celestial sphere you can see at any moment and the portion that you cannot see
  - D) the point directly over your head
  - E) a half-circle extending from your horizon due east, through the north celestial pole, to your horizon due west
- 3) By locating the north celestial pole (NCP) in the sky, how can you determine your latitude? 3) \_\_\_\_\_
- A) The azimuth of the NCP is the angular distance from the North Pole.
  - B) The azimuth of the NCP is the same as your latitude.
  - C) The altitude of the NCP is your angular distance from the North Pole.
  - D) The altitude of the NCP is the same as your latitude.
  - E) The altitude of the NCP is the same as your distance from the North Pole.
- 4) Why is it summer in the Northern Hemisphere when it is winter in the Southern Hemisphere? 4) \_\_\_\_\_
- A) The Northern Hemisphere is tilted away from the Sun and receives more indirect sunlight.
  - B) The Northern Hemisphere is closer to the Sun than the Southern Hemisphere.
  - C) The Northern Hemisphere is "on top" of Earth and therefore receives more sunlight.
  - D) The Northern Hemisphere is tilted toward the Sun and receives more direct sunlight.
  - E) It isn't: both hemispheres have the same seasons at the same time.
- 5) If the Moon is setting at 6 AM, the phase of the Moon must be 5) \_\_\_\_\_
- A) new.
  - B) third quarter.
  - C) waning crescent.
  - D) full.
  - E) first quarter.

- 6) If the Moon is rising at midnight, the phase of the Moon must be      6) \_\_\_\_\_
- A) first quarter.
  - B) waxing crescent.
  - C) third quarter.
  - D) waning crescent.
  - E) full.
- 7) Why do we see essentially the same face of the Moon at all times?      7) \_\_\_\_\_
- A) because the Sun illuminates only one half at a time
  - B) because the Moon does not rotate
  - C) because the other face points toward us only at new Moon, when we can't see the Moon
  - D) because the Moon's rotational and orbital periods are equal
  - E) because the Moon has a nearly circular orbit around Earth
- 8) Suppose you live on the Moon. How long is a day (i.e., from sunrise to sunrise)?      8) \_\_\_\_\_
- A) 24 hours
  - B) a year
  - C) 23 hours 56 minutes
  - D) about 18 years
  - E) a lunar month
- 9) All of the following statements are true. Which one explains the reason why there is *not* a solar eclipse at every new Moon?      9) \_\_\_\_\_
- A) The Moon rotates synchronously with its revolution about Earth.
  - B) The sidereal month is shorter than the lunar month.
  - C) The orbital plane of the Moon is tilted by about  $5^\circ$  to the ecliptic plane.
  - D) The nodes of the Moon's orbit precess with an 18-year period.
  - E) The Moon is the primary cause of tides on Earth.
- 10) What conditions are required for a solar eclipse?      10) \_\_\_\_\_
- A) The phase of the Moon must be new, and the Moon's orbital plane must lie in the ecliptic.
  - B) The phase of the Moon must be new, and the nodes of the Moon's orbit must be nearly aligned with Earth and the Sun.
  - C) The phase of the Moon must be full, and the Moon's orbital plane must lie in the ecliptic.
  - D) The phase of the Moon must be full, and the nodes of the Moon's orbit must be nearly aligned with Earth and the Sun.
  - E) The phase of the Moon can be new or full, and the nodes of the Moon's orbit must be nearly aligned with Earth and the Sun.
- 11) What conditions are required for a lunar eclipse?      11) \_\_\_\_\_
- A) The phase of the Moon must be full, and the nodes of the Moon's orbit must be nearly aligned with Earth and the Sun.
  - B) The phase of the Moon must be full, and the Moon's orbital plane must lie in the ecliptic.
  - C) The phase of the Moon must be new, and the Moon's orbital plane must lie in the ecliptic.
  - D) The phase of the Moon can be new or full, and the nodes of the Moon's orbit must be nearly aligned with Earth and the Sun.
  - E) The phase of the Moon must be new, and the nodes of the Moon's orbit must be nearly aligned with Earth and the Sun.

- 12) Why are lunar eclipses more commonly seen than solar eclipses? 12) \_\_\_\_\_
- A) The Moon is much closer to the Earth than the Sun.
  - B) The Moon goes around the Earth faster than the Earth goes around the Sun.
  - C) The Earth casts a bigger shadow than the Moon.
  - D) The tilt of the Moon's axis is smaller than the Earth's.
  - E) Lunar eclipses occur at night and are easier to see.
- 13) What is the Saros cycle? 13) \_\_\_\_\_
- A) the period between a total solar eclipse and a total lunar eclipse
  - B) the roughly 6-month period between eclipse seasons
  - C) the 18-year cycle over which the pattern of eclipses repeats
  - D) the period between total solar eclipses
  - E) the period between eclipses
- 14) If the Moon is relatively far from Earth, so that the umbra does not reach Earth, someone directly behind the umbra will see 14) \_\_\_\_\_
- A) a partial lunar eclipse.
  - B) a partial solar eclipse.
  - C) a penumbral lunar eclipse.
  - D) an annular eclipse.
  - E) no eclipse.