The Moon and Eclipses

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1. The Moon moves its own diameter relative to the stars in about _____

   (a) .55 minutes

   (b) 1900 arcseconds

   (c) .5 hours

   (d) .00015 hours

   (e) 13.2 days

2. The Earth is about how many times larger than the Moon (in diameter)?

   (a) 4 (b) 10 (c) 45 (d) 110

3. If you are looking at the Moon above the Southern horizon and the right hand side of the Moon is less than half lit, the phase is

   (a) waxing crescent (b) waxing gibbous (c) waning gibbous (d) waning crescent

4. Which phenomenon is caused by the difference in the gravitational pull of the Moon on the near and far sides of the Earth?

   (a) tug of war (b) lunar tides (c) precession (d) eclipses

5. Since it takes 29.5 days for the Moon to complete its phases, the minimum time between two (penumbral) lunar eclipses is...

   (a) about 2 weeks (b) about 1 year (c) about 6 months (d) 60 days (e) about 1 month

6. The Saros cycle is

   (a) the time between extinctions (b) about 1 year (c) the time it takes for the Moon's line-of-nodes to rotate 360 degrees (d) the time between solar eclipses (e) the synodic period of the planet Saros.

7. About what time does the moon rise when its phase is new moon?

   (a) 6 am (b)12 pm (c) 6 pm (d) 12 am (midnight) (e) 9 am

8. Lunar eclipses only occur during which phase of the Moon?

   (a) New Moon (b) 1st quarter (c) Full Moon (d) 3rd quarter

9. Solar eclipses only occur during which phase of the Moon?

   (a) New Moon (b) 1st quarter (c) Full Moon (d) 3rd quarter

10. The distance between the Moon and the Earth is how many times larger than the size of the Moon?

    (a) 4 (b) 10 (c) 45 (d) 110

11. Which is longer, the time it takes for the Earth to rotate relative to the stars (sidereal day), or the time to rotate relative to the Sun (solar day)?

    (a) sidereal (b) solar (c) celestial (d) a and b are the same
    (e) the Earth doesn't rotate or else we would feel a wind.

12. Which is longer, the sidereal month (time it takes Moon to line up with the stars) or the synodic month (time to line up with the Sun)?

    (a) sidereal (b) synodic (c) celestial (d) a and b are the same

13. Eclipse seasons, the 38 day period when eclipses can occur, are about how many months apart?

    (a) 2 (b) 3 (c) 6 (d) 12

14. It is no coincidence that word "ecliptic" sounds like "eclipse". This is because

    (a) both look like big "lips"
    (b) there must be an eclipse when the Moon crosses the ecliptic.
    (c) eclipses only occur when the Moon is near the ecliptic
    (d) the shadow of the Moon follows the ecliptic
    (e) the Moon's orbit is elliptical

15. The darkest portion of a shadow formed by a planet or moon is called the _____?

    (a) cone (b) umbra (c) apex (d) penumbra

16. During a total lunar eclipse, the Moon can still be seen because of reddish light from the _____?

    (a) Earth's atmosphere (b) Earth's street lights (c) stars (d) lava on the Moon

17. Observing eclipses is an effective way to discover

    (a) the shape of the Earth (b) the position of the ecliptic (c) the Moon's orbit is not a perfect circle (d) the Sun's corona (e) all of the above

18. Suppose an annular solar eclipse is expected today. At what time would you expect the Moon to rise?

    (a) at 12 pm (noon) (b) at sunrise (c) at sunset (d) at 12 am (midnight) (e) at 6 pm

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20. After one _____ of 18 years 11.33 days, the pattern of eclipses repeats.

    (a) sidereal period (b) saros cycle (c) precession (d) synodic period

21. Since we sometimes see annular solar eclipses instead of total solar eclipses, we know _____

    (a) the position of the ecliptic (b) that the Moon is a sphere (c) that the Moon rotates (d) that the Earth-Moon distance is not constant (e) nothing

22. How does the plane of the Moon's orbit relate to the plane of the Earth's orbit around the Sun?

    (a) coincident (the same) (b) parallel (c) intersect with a 5° angle (d) intersect with a 23.5° angle (e) perpendicular

23. (1pt) How does the parallax angle p of a star depend on the distance D to the star?

    (a) the bigger D the bigger p (b) the bigger D the smaller p (c) no dependence

24. The formula $d = \frac{1}{p}$ gives the distance measured in _____ to an object with a parallax angle measured in arcseconds.

1 Historical Astronomy

1. An astronomical observatory/temple built by the Mayan's is called

   (a) the Big Horn Medicine Wheel

   (b) Caracol

   (c) Stonehenge

   (d) the Colloseum

   (e) Quetzalquatl

2. T or F. It was the Chinese who provided critical ancient records of comets.

3. T or F. Like the Sun and the Moon, the planets usually move from west to east (rel to the stars) from one day to the next.

4. The ancient people credited with creating the astrology used today is

   (a) the Babylonians (b) the Chinese (c) the Plains indians (d) the Polynesians (e) the Norwegians

5. The "calendar" made out of rock slabs which is located on the British Isles is called

   (a) Big Horn Medicine Wheel (b) Caracol (c) Stonehenge (d) Buckminster Abbey (e) Montezuma's revenge

6. The work of the ancient Greeks was not forgotten during the dark ages largely because of the

   (a) Babylonians (b) Islamic peoples (c) Native Americans (d) Egyptians (e) Mayans

7. The "luminaries" to the Greeks and Romans included the five known planets and the _____ and _____.