

EDMONDS COMMUNITY COLLEGE
ASTRONOMY 100
Winter Quarter 2007 – Sample Test # 1

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1. An arc second is a measure of
 - a. time interval between oscillations of a standard clock
 - b. time interval between successive orbital positions
 - c. length along a circle
 - d. angle
 - e. length of a day

2. Which ONE of the following statements about angle is CORRECT
 - a. 30 arc minutes = half a degree
 - b. 30 arc minutes - half an arc second
 - c. 50 arc minutes = half a degree
 - d. 50 arc seconds = half a degree
 - e. 60 arc seconds = half a degree

3. An astronomical unit (AU) is
 - a. a unit of time equal to 1 billion years
 - b. a unit of length, defined as a wavelength
 - c. a unit of mass equal to one solar mass
 - d. a unit of time equal to one year
 - e. a unit of length equal to the mean distance between Earth and the Sun

4. An astronomer finds an object at a distance of 6.8 AU from Earth. Based on the distance, which of the following is this object most likely to be
 - a. an artificial satellite orbiting Earth
 - b. a star in our Galaxy
 - c. a comet in our solar system
 - d. a distant galaxy
 - e. a planet orbiting a distant star

5. At what distance from Earth do we find the nearest star?
 - a. 4.3 parsecs
 - b. 4.3 light years
 - c. 5.2 AU
 - d. 1 AU
 - e. 1 light year

6. 1 light year is
 - a. the time for light to travel from Sun to Earth
 - b. the distance that light travels in one year
 - c. the distance between Earth and Sun
 - d. the time for Earth to orbit the Sun once
 - e. the time for Venus to orbit the Sun once

7. Suppose that, at the same time on the same night, we see one supernova (exploding star) in the Andromeda Galaxy, 2 million light years from us, and another in the galaxy M82, six million light years from us. Which of the statements is correct?
 - a. we cannot tell which star exploded first, because they are so far away
 - b. we know both stars exploded at the same time, because we saw the explosions at the same time
 - c. the supernova in the Andromeda galaxy actually occurred before the one in M82
 - d. the supernova in the Andromeda galaxy actually occurred after the one in M82
 - e. neither supernova actually occurred; they were figments of overactive imaginations

8. The most readily observed motion in the night or day sky is produced by
 - a. the motion of stars with respect to each other in the sky

- b. the revolution of the Earth around the Sun
 - c. the motion of the planets across the sky
 - d. the rotation of the Earth on its axis
 - e. the motion of the Moon in its orbit around the Earth
9. The Earth would NOT have seasons if
- a. its axis of rotation were perpendicular (at 90 degrees) to its equatorial plane
 - b. its equatorial plane were perpendicular to its orbital plane
 - c. its axis of rotation were perpendicular to its orbital plane
 - d. an observer's position were at either north or south pole
 - e. an observer's position were on Earth's equator
10. The equinoxes are located at the intersections of
- a. the ecliptic and the horizon
 - b. the horizon and the celestial equator
 - c. the ecliptic and the celestial equator
 - d. the ecliptic and the Moon's orbit
 - e. the celestial equator and the Moon's orbit
11. The celestial coordinates which together describe a star's position precisely and unambiguously are
- a. longitude and latitude
 - b. right ascension and sidereal time
 - c. sidereal time and latitude
 - d. sidereal time and declination
 - e. declination and right ascension
12. At the north pole of the Earth, for about how long will the sun remain above the horizon once it first appears at the beginning of spring
- a. 6 months
 - b. 12 hours
 - c. about 1 hour
 - d. 6 hours
 - e. 12 months
13. The phenomenon of precession of the Earth's axis of rotation is caused by
- a. the varying intensity of sunlight
 - b. the variation of the rotation rate
 - c. the tidal ebb and flow of water on Earth
 - d. the Moon's gravitation pull on Earth's equator
 - e. the Moon's gravitational pull on Earth's poles
14. At which time of the year will your shadow in sunlight at midday be shortest
- a. the first day of summer, about June 21
 - b. mid-summer, about August 5
 - c. the first day of spring, about March 21
 - d. mid-winter
 - e. the first day of fall, about September 21
15. The correct sequence of the Moon's phases is
- a. new moon, waning crescent, first quarter, full moon
 - b. new moon, full moon, waxing crescent, waning crescent
 - c. waxing crescent, first quarter, waxing gibbous, full moon
 - d. full moon, waxing gibbous, third quarter, waning crescent
 - e. full moon, waning gibbous, third quarter, waxing crescent
16. Which phase has the Moon between the Sun and the Earth, in a relatively straight line
- a. gibbous
 - b. crescent
 - c. new
 - d. full
 - e. quarter

17. The full moon rises at about what time of day
- a. sunrise
 - b. noon
 - c. sunset
 - d. midnight
 - e. none of the above
18. The first quarter moon rises at about what time of day
- a. sunrise
 - b. noon
 - c. sunset
 - d. midnight
 - e. none of these
19. Which of the following planets can never be seen as a crescent, from Earth
- a. the Moon
 - b. Venus
 - c. Mars
 - d. Mercury
 - e. all of these can be seen as crescents
20. The Moon, in its orbit around the Earth
- a. always keeps the sunlit side towards Earth
 - b. always keeps the same side towards the Sun
 - c. rotates once every 24 hours, to keep in step with the Earth
 - d. always keeps the same side towards the Earth
 - e. rotates twice on its axis, for every revolution around the Earth
21. The approximate rotation period of the Moon is
- a. infinite, since the Moon does not rotate, but keeps one face toward the Earth at all times
 - b. 1 month
 - c. 1 day
 - d. 1 week
 - e. 1 year
22. A solar eclipse can occur only when
- a. the Moon comes between Earth and Sun
 - b. the Earth comes between Moon and Sun
 - c. the Sun comes between Earth and Moon
 - d. the Moon is tilted far from the Earth's orbit
 - e. the Moon, Sun and Earth are 90 degrees apart
23. An apparent WESTWARD motion of a planet from night to night compared to the background stars (as viewed from Earth) is called
- a. direct motion
 - b. retrograde motion
 - c. rising (if in the east)
 - d. setting (if in the west)
 - e. precession
25. At what point in a planet's elliptical orbit is it at its furthest distance from the Sun
- a. aphelion
 - b. superior conjunction
 - c. opposition
 - d. perihelion
 - e. opposition
26. Kepler's third law can be described in which of the following ways
- a. the smaller the size of a planet, the more rapidly it rotates on its axis
 - b. the time to complete one revolution in its orbit is dependent on the size of the planet
 - c. the larger the orbit, the longer it takes for a planet to complete one revolution
 - d. the smaller the orbit, the longer it takes for a planet to complete one revolution
 - e. no generalization of Kepler's third law can be made

27. Venus shows changes in angular size and also shows phases similar to those of the Moon. According to Galileo, who first saw this, these observations show that
- a. Venus orbits the Moon
 - b. Venus, like the Moon, orbits Earth
 - c. the Moon orbits Venus, not the Earth
 - d. Venus has no moon
 - e. Venus orbits the Sun
28. Acceleration due to gravity on the Moon is
- a. significantly smaller than that on Earth
 - b. zero
 - c. the same as that on Earth
 - d. significantly larger than that on Earth
 - e. slightly larger than that on Earth
29. Compared with your mass on Earth, your mass out in space among the stars would be
- a. huge
 - b. zero
 - c. negligibly small
 - d. the same
 - e. slightly larger
30. If a planet moves around the Sun in a circular orbit, how many forces act upon it
- a. one force, toward the Sun
 - b. one force, in the direction of motion
 - c. zero forces
 - d. two equal and opposite forces
 - e. two equal forces in the same direction
31. The overall shape of the orbits of most of the planets in the solar system is
- a. perfectly circular
 - b. slightly elliptical, but nearly circular
 - c. elliptical, very elongated
 - d. parabolic
 - e. square
32. The eccentricity of a planet's orbit is a number which describes
- a. the tilt of a planet's orbit
 - b. the shape of the orbital ellipse
 - c. the mean diameter of the orbit
 - d. the rate of motion around the orbit
 - e. the rate of rotation on an axis
33. One planet whose orbit carries it both inside and outside the orbital distance of another planet is
- a. Mars
 - b. Mercury
 - c. Uranus
 - d. Pluto
 - e. Earth
34. The best way to measure the mass of a planet is to
- a. measure the gravitational pull on its moon
 - b. measure the composition
 - c. measure the depth of the atmosphere
 - d. measure the magnetic field
 - e. measure the diameter
48. Spring tides occur
- a. once a year, in springtime
 - b. most often during springtime
 - c. never during springtime
 - d. once a month, at full moon
 - e. twice a month, at full and new moons
49. The Moon's gravitational pull on the Earth produces how many tides on Earth each day
- a. two equal high tides
 - b. two equal low tides
 - c. exactly one high and one low tide
 - d. one high and one low tide
 - e. two high tides and two low tides

approximately 15 additional questions TBD related to diagrams of the solar system and moon phases...see Lab # 1 and solar system with constellations of the zodiac handout for reference