Physics 1061. Stars and Galaxies

Quiz 3. History of Cosmology Name:_____

1. The principal culture that transferred Greek astronomical knowledge to Renaissance Europe was the _____ culture.

   (a) Byzantine (b) Chinese (c) Mongol (d) Islamic (e) Mayan

2. The most accurate Greek attempt to explain planetary motion was the model of:

   (a) Aristotle.
   (b) Pythagoras.
   (c) Hipparchus.
   (d) Ptolemy.
   (e) Erastothenes.

3. The astronomical observatory/temple built by the Mayan's is called

   (a) the Big Horn Medicine Wheel
   (b) Caracol
   (c) Stonehenge
   (d) the Colloseum
   (e) Quetzaquatl

4. T or F. It was the Chinese who provided critical ancient data on supernovae and comets.

5. 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.

6. T or F. Aristarchus's heliocentric view was shared by the majority of Greek philosophers.

7. T or F. Galileo's observations of stellar parallax were proof Copernicus was correct.

8. Eratosthenes reasoned that the ratio of 7.2° to 360° is the same as the ratio of the distance between Syene and Alexandria to the _____ .

   (a) radius of the Earth (b) circumference of the Earth (c) distance to the Moon (d) diameter of the Earth (e) distance between the Earth's poles

9. The heliocentric model was actually first proposed by:

   (a) Aristotle. (b) Archimedes. (c) Aristarchus. (d) Alexander the Great. (e) Hipparchus.

10. The Ptolemaic model of the universe:

    (a) explained and predicted the motions of the planets with deferents and epicycles.

(b) is the basis of our modern cosmology.

(c) could not account for the stellar parallax observed by Hipparchus.

(d) describes the orbits of the planets as being ellipses, not circles.

(e) always kept Mars and Mercury between the Earth and Sun.

11. Which of these was NOT a part of Ptolemy's model?

(a) Mercury must always lie roughly between the Earth and Sun.

(b) It was geocentric.

(c) Eastward motion of the planet was along the deferent.

(d) Retrograde motion of the planet utilized the epicycle.

(e) Both Venus and Jupiter would be brightest at opposition.

12. The inferior planets differ from the superior ones in that

(a) they are limited in their angular separation from the Sun

(b) they twinkle

(c) they vary in brightness

(d) they are actually in motion around the Sun

(e) they show no retrograde motion

13. Which of the statements below is part of both the Ptolemaic and Copernican models?

(a) The Earth orbits the Sun once a year.

(b) The Sun lies in the center of the Cosmos.

(c) The Moon orbits the Earth once a month.

(d) Epicycles are needed to explain retrograde motion of the planets.

(e) Venus' epicycle must always lie between us and the Sun.

14. On which of these assumptions do Ptolemy and Copernicus agree?

(a) The Earth must be the center of all motion in the Cosmos.

(b) All orbits must be made up of perfect circles.

(c) The Sun was bigger than the Earth.

(d) Venus must always stay between us and the Sun.

(e) The Sun must orbit us, but the planets do orbit the Sun.

15. Tycho Brahe made meticulous observations of the planets, but _____ used his data to discover that the planets orbitted in ellipses with the Sun at one focus.

(a) Ptolemy (b) Galileo (c) Kepler (d) Newton (e) Copernicus

16. Which concept was NOT a part of Kepler's Laws of Planetary Motion?

    (a) All planetary orbits are ellipses.
    (b) The square of the planet's period is equal to the cube of its average distance.
    (c) A planet must move fastest in its orbit at perihelion.
    (d) Epicycles are needed to explain the varying brightnesses of the planets.
    (e) Planets with bigger orbits move slower.

17. Upon which point do Copernicus and Kepler disagree?

    (a) The Moon orbits the Earth.
    (b) The Earth orbits the Sun.
    (c) Retrograde motion occurs when one planet overtakes another.
    (d) The orbits of the planets are ellipses, with one focus at the Sun.
    (e) Venus will appear as a crescent when she retrogrades between us and the Sun.

18. Which of these was not seen telescopically by Galileo?

    (a) sunspots
    (b) Venus' phase cycle
    (c) Four moons around Jupiter
    (d) stellar parallax
    (e) Craters and mare on the Moon

19. The observation of Galileo that disproved the Ptolemaic model was

    (a) the Sun has spots
    (b) Jupiter has its own satellites
    (c) the Milky Way resolves into stars
    (d) Venus goes through a complete cycle of phases

20. All of these features of Stonehenge suggest that it functioned as a calendar except _____.

    (a) z-holes (28) (b) y-holes (30) (c) Aubrey holes (56) (d) heel stone
    (e) stair steps (365)

21. T or F. The *greatest eastern elongation* configuration can only be held by a superior planet.

22. Eratosthenes invented a kind of metal celestial globe called the

    (a) octant (b) armillary sphere (c) astrolabe (d) happy fun ball
    (e) celestial sphere

23. The mathematician hired by Tycho Brahe to solve the riddle of planetary orbits was _____

    (a) Kepler (b) Newton (c) Copernicus (d) Galileo (e) Bruno