Astronomy Test Review

1. Can you explain what a light year is and how it is used as a unit?
2. What is a constellation?
3. Can you read a star chart – find constellations, find the horizon, find the zenith?
4. Can you identify the following constellations and stars on a star chart set for August 1 at midnight?
    a. Ursa Major, Ursa Minor, Cassiopeia, Lyra, Cygnus, Aquila, Summer Triangle
    b. Vega, Deneb, Altair, Polaris, Arcturus
5. Can you explain the difference between the objective lens or mirror and the eyepiece in a telescope?
6. Can you explain the difference in the following terms?
    a. Focal length and aperture
    b. Focal ratio and magnification
7. Can you explain how a ccd camera takes a telescope picture?
8. Could you trace light rays as they move through the following telescopes?
    a. Reflecting
    b. Refracting
    c. Cassegrain
9. What is the difference between a Galilean telescope and a Newtonian telescope?
10. Can you explain resolution? Focus? Chromatic aberration?
11. Can you calculate magnification if given a telescope's and eye piece's focal lengths? Would you be able to pick adequate eye pieces to use with a particular telescope?
12. What is MEM – maximum effective magnification – and the 20x rule?
13. What kind of a telescope is Hubble?
14. Can you describe the importance of Galileo's two publications listed below?
    a. The Starry Messenger
    b. Dialogue on the Two Great World Systems
15. Can you explain Ptolemy's geocentric model of the Universe?
16. Can you explain Copernicus' heliocentric model of the Universe?
17. Can you explain why Tycho Brahe is still known today for his observational data and his hiring of Johannes Kepler?
18. Can you identify which of the following descriptions go with which of Kepler's Laws?
    a. This law is about the speed of planet traveling around the sun. As a planet orbits the sun, the line joining the Sun and the planet sweeps through equal areas in equal times.
    b. This law is about the length of time a planet takes to orbit the Sun (period of revolution). If you use the unit AU (Astronomical Unit) to measure the average distance of the planet from the sun, Kepler's equation appears in its simplest form: $P^2 = R^3$ where P = period of revolution and R = average distance of planet from sun (semimajor axis)
    c. Planets orbit the Sun in ellipses
19. What is retrograde motion? Revolution? Rotation?
20. What was Newton's contribution to astronomy? (motion & telescopes)