

Things you should be able to explain.

1. How the appearance of the sky changes over the course of a night and from night to night
2. The motion of stars from different locations on Earth
3. Celestial Sphere, poles, equator, right ascension and declination
4. Ecliptic, zenith, meridian
5. Solar and Sidereal days
6. Tropical and sidereal years
7. Tilt of the Earth's axis and the Seasons, equinoxes, solstices
8. Precession, what causes it, what are the effects of it
9. Parallax
10. Synchronous rotation of the Moon
11. Kepler's laws of planetary motion
12. Newton's laws of motion
13. Universal law of gravity
14. Tidal forces and ocean tides
15. Light as electromagnetic waves
16. Interaction of light with matter
17. Wavelength, frequency, speed relation
18. Properties of thermal radiation
19. Continuous spectra, absorption line spectra, emission line spectra and how is each made
20. Scattering of light
21. The Doppler effect, redshift, blueshift
22. Purpose of a telescope
23. How telescopes work
24. Seeing