ANSWER KEY FOR UNIT 3 OBJECTIVE QUESTIONS

1. Radio waves, microwaves, infrared, visible, ultraviolet, xrays, gamma rays
2. Visible light; all of them
3. C = 3.0 x 108 m/s
4. All electromagnetic waves have the same speed
5. There are more waves in a gamma ray than a radio wave
6. Gamma ray are stronger than radio wave
7. Light is electromagnetic radiation- oscillating electric and magnetic fields
8. 3x108m/s /7x10-7 = 7x10-7 / 7x10-7 F= 4.29x1014
9. It would be dimmer
10. Continuous spectrum- a solid, liquid or dense gas excited to emit light-radiates at all wavelengths

Emission spectrum- a low-density gas excited to emit light at specific wavelengths

Absorption spectrum- if light comprising continuous spectrum passes through a cool low-density gas

1. Cool gas in front of the star would produce an absorption line spectrum
2. The lines produced by spectroscopy are like finger prints and identify which elements are being emitted.
3. By the red shifts or blue shifts; we can tell if a star is moving towards us or moving away from us.
4. It is moving away from us
5. Hot objects will appear bluer, cooler objects appear redder
6. Visible light and radio waves
7. Common optical- observes visible light
8. Reflection-uses a mirror; refraction-uses a lens
9. To improve brightness, resolution and magnification
10. See notes for the picture of telescope labelled with parts
11. Aperture- 150mm; Focal Length-750mm; Magnification-30X
12. Wider field of view-25mm; greatest magnification-10mm
13. 2X more light
14. CCD (charge-coupled device) records the intensity of light falling on it
15. Bad weather, light pollution, dispersion, scintillation
16. On top of a mountain-best place to observe with least light pollution
17. They combine the signals from several smaller telescopes to simulate one big mirror
18. There is no atmospheric absorption
19. To show intensity