1. Reflection - particle and wave model indicate that the angle of incidence equals the angle of reflection.

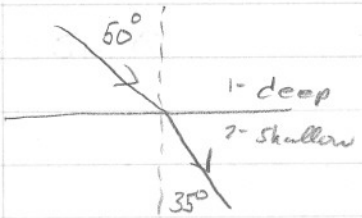
Refraction - both models describe refraction, but the particle model describes light as speeding up in the medium, and the wave model describes light as slowing down in the medium.

2. $\Delta x = \frac{60\text{ mm}}{5} = 12\text{ mm}$

(a) $\lambda = \frac{\Delta x d}{L}$ $\quad (600\times10^{-9}) = \frac{(12\times10^{-3})(68\times10^{-6})}{L}$

$L = 1.36\text{ m}$

(b) If the wavelength increases (and the distances stay the same) then the bright bands in the interference pattern will become further apart.

3. 

$\frac{\sin\theta_1}{\sin\theta_2} = \frac{\lambda_1}{\lambda_2}$ $\quad \frac{\sin 50}{\sin 35} = \frac{5}{\lambda_2}$

$v = f\lambda$ $\quad 30 = 6\lambda$ $\quad \lambda = 5\text{ cm}$

$\lambda_2 = 3.7\text{ cm}$

4. emmission

5. all the statements are correct

6. Roemer

7. Partial reflection and diffraction

Hilroy

8. increase

9. A) - can travel in a vacuum

10. $\lambda = \frac{\Delta x \, d}{L}$

$= \frac{(1.5 \times 10^{-2})(6 \times 10^{-5})}{2}$

$= \underline{4.5 \times 10^{-7} \text{ m}}$

11. D) - light consists of quanta of energy

12. A)