Physical Principles in Living Systems Name:

Lenses and Optical Instruments Period:

Use Chapter 3, Section 3 of your textbook to answer the questions below. The word banks can be used to fill out the sentences below them. Some terms may be used more than once.

aperture eye focal length focal point images lens observations thicker thinner thousands water

Lenses and Refraction of Light (p.92)

_____ 1. What do cameras, telescopes, and the human eye have in common?
a. They all use ultraviolet light to form images.
b. They all use lenses to form images.
c. They all use infrared waves to form images.
d. They all use reflected light to form images.

2. A _____ is a transparent object that forms an image by refracting light.

3. The point at which light beams cross after passing through a lens is a _____ .

4. A _____ is the distance between the lens and focal point.

Convex Lenses (p.93)

5. If a lens is _____ in the middle than at the edges, it is a convex lens.

_____ 6. What do a magnifying glass and the human eye have in common?
a. Both are concave lenses.
b. Both are convex lenses.
c. Neither contains lenses.
d. Neither can refract light.

Animal Eyes (p.94)

7. A dragonfly's compound eye makes _____ of images.

8. The four-eyed fish can see above and below the _____ at the same time.

Concave Lenses (p.94)

9. If a lens is _____ in the middle than at the edges, it is a concave lens.

_____ 10. What happens to light rays when they travel through a concave lens?
a. Light rays are transmitted.
b. Light rays are absorbed.
c. Light rays bend toward each other.
d. Light rays bend away from each other.

Optical Instruments and Refraction (p.95)

11. Optical instruments help people to make _____ .

Cameras (p.95)

12. A camera works in a similar way to your _____ .

13. Both your eye and a camera have a _____ to focus light.

14. In a digital camera, _____ are recorded on light sensors.

15. Look at Figure 9. Just like the pupil in your eye, the _____ of a camera controls the about of light let in.

turn over for more questions

Physical Principles in Living Systems Name:

Lenses and Optical Instruments Period:

convex lenses | light microscope | objective lens | ocular lens | refracting telescope

Telescopes and Light Microscopes (p.96)

16. A tool that is used to see large, distant objects is called a _____ .

17. Look at Figure 10. A real image is formed by an _____ .

18. Look at Figure 10. A real image is magnified by an _____ .

19. A tool that is used to see tiny, nearby objects is called a _____ .

20. Light microscopes and refracting telescopes both have two _____ .