**BC SCIENCE 8 - Chapter 6 Practice Booklet – (Answer Section)**

**COMPLETION**

**1)** iris

**2)** far

**3)** near

**4)** retina

**5)** cornea

**6)** optic nerve

**7)** cone cells

**8)** refracting

**9)** prisms

**10)** reflecting

**11)** aperture

**12)** wavelength

**13)** convex

**14)** longer

**15)** diaphragm

**MATCHING**

**16) B 17) E 18) D 19) C 20) A**

**21) F 22) H 23) G 24) E 25) C**

**26) A 27) D 28) A**

**SHORT ANSWER**

**29)** At first you will not be able to see anything. After several moments, your eyes will adjust to the darkness. The iris reflex will allow the pupil to grow very large. More of the "star light" will enter your eyes, and you will be able to find your way to your seat.

**30)** The blind spot is the point where the optic nerve enters the retina. This area does not have any light-sensing cells. When light strikes the retina at this point, the retina neither detects light nor transmits the message to the brain.

**31)** Near-sighted people have trouble seeing distant objects. Objects that are near are more clearly in focus.

Far-sighted people have trouble seeing objects that are close to them. Objects far away are more clearly in focus.

**32)** The two different types are refracting and reflecting. In a refracting telescope, light from a distant object is collected and focussed by a convex lens. A reflecting telescope uses a concave mirror to collect and focus rays of light from a distant object.

**33)** The iris functions like the diaphragm of a camera.

**34)** i) Binoculars

ii) a) convex lens; b) triangular prisms; c) eyepiece

iii) Binoculars are actually two reflracting telescopes mounted side by side. The telescopes are shortened by the insertion of prisms. Prisms serve as plane mirrors reflecting light back and forth.

**35)** Title: Parts of a Refractive Telescope

a) convex lens

b) light from distant object

c) objective lens

d) real image of distant object

e) eyepiece (ocular lens)

**PROBLEMS**

**36)** Concave lenses would be best. In near-sightedness, the image falls short of the retina. Concave lenses will move the image back so it will form on the retina.

**37)** Convex lenses would be best. In far-sightedness, the image falls behind the retina. Convex lenses will move the image closer so it falls on the retina.

**38)** The shape of the pupil allows different amounts of light in, but will not affect focus. This is important for cats who hunt at night.

**39)** Should use an "If … then" formula that must identify variables in a statement. Answers will vary. Example: If an object moves closer to the film, then the lens must move farther from the film to keep the image in focus.

**40)** You would use a wide-angle lens. These lenses have a shorter focal length that produce a relatively small image of the object, but have a wide field of view.

**41)** You would use a telephoto lens. These lenses have a longer focal length that make the images larger and seem closer than they actually are.

**42)** In the camera the focal length is adjusted by moving the lens system toward or away from the recording material. In the human eye the focal length is adjusted by the ciliary muscles changing the thickness of the lens.

**43)** Laser light is made up light of a single wavelength. When the laser light passed through the prism, it refracted. Different wavelengths of light refract at a different angles, but since there was only one wavelength, only one angle of refraction would be observed.