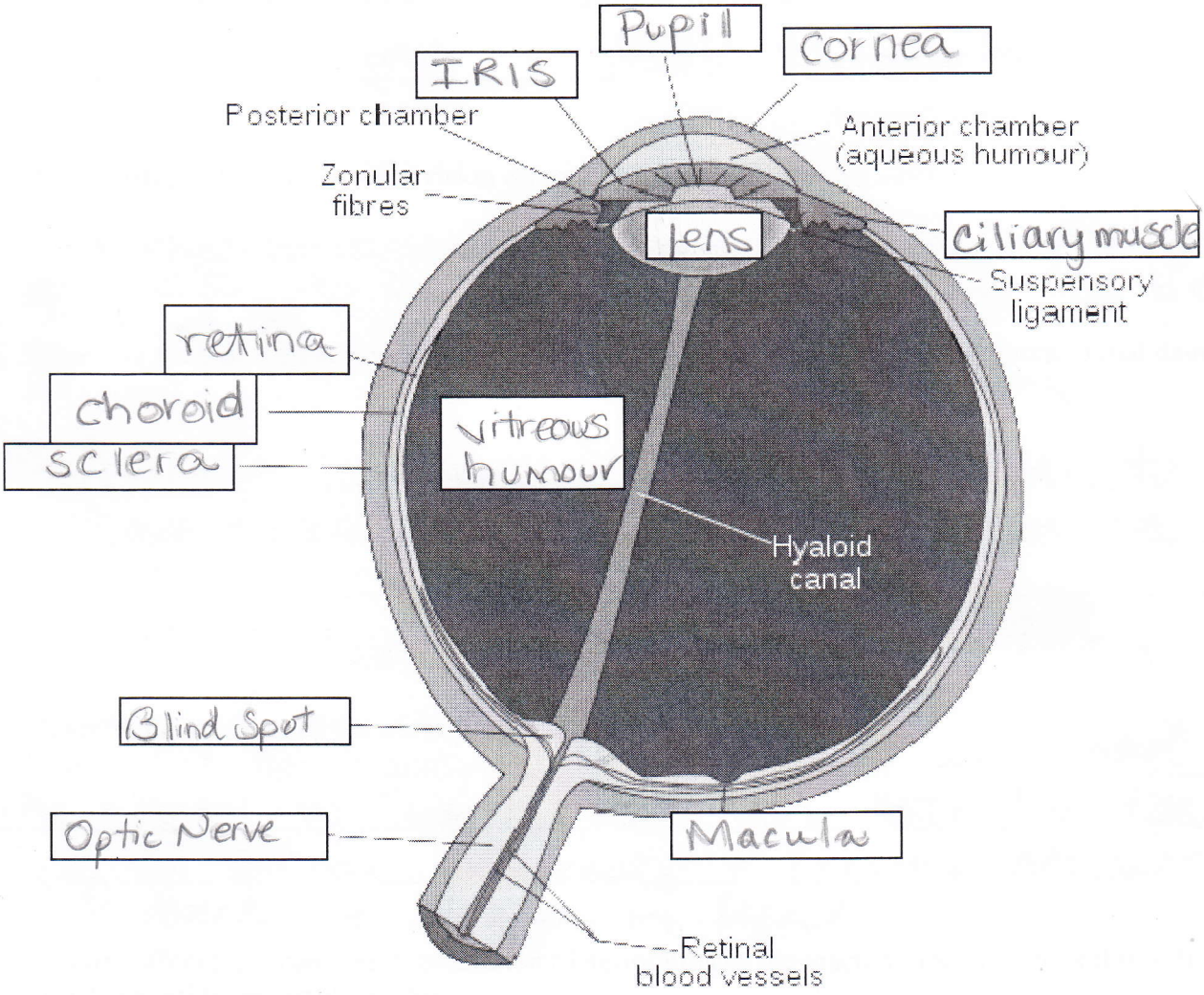
(3)

Name: _____ Date: _____

The Eye: Anatomy

1. Use the word bank below to fill in the boxes of the diagram:

Choroid	Pupil	Sclera
Cornea	Optic Nerve	Blind spot
Vitreous Humor	Retina	Lens
Iris	Macula	Ciliary Muscle



2. Identify the following:

a) Is responsible for protecting the eye: Sclera

b) Transforms light waves into nerve impulse thanks to the types of cells it contains: Retina

c) Through accommodation, it can converge light rays onto the retina: Lens

d) Controls the amount of light that reaches the retina: Iris

e) Exerts a force on the membranes of the eye in order to give the eye its round shape: vitreous gel

f) Guides the nerve impulse to the brain: optic nerve

g) Are responsible for central vision: macula

h) Are responsible for peripheral vision: rods

3. A light ray must cross several different media before reaching the retina. Name them in order:

cornea → aqueous humour → lens → vitreous humour → Retina

4. What is the *main* function of the different transparent media of the eye?

allows light to pass through

5. At what step in the pathway for vision do we experience the sense of sight?

When image converges on Retina impulse is sent from optic nerve to vision center of brain to be analysed.

6. What two parts of the eye are responsible for its shape and form? How do they work to maintain the eye's shape?

Vitreous Humour - applies pressure to eye to keep retina + lens in place

Sclera - rigid exterior of eye ball

7. Describe the function of the iris (what it does) and how it works.

Controlled by 2 groups of muscles that will control the amount of light that can enter the eye & get to retina. contracts + becomes narrower in dark + widens in light

8. Sophie suffers from macular degeneration (deterioration of the macula). Describe how this will affect her vision and explain why.

She won't be able to see color. The macula is also where light is focused for central vision which will cause blurry vision & may lead to blindness

9. A dog was raised in a puppy mill and grew up with several disabilities: one of which was the atrophy of his optic nerve (it wasted away). How does this affect the dog's vision and why?

Will affect his central, peripheral & color vision. Images will not reach the brain + he will be blind

10. Which types of cells on the retina are responsible for color vision?

cones

11. Colorblindness usually occurs in males more than females. Explain why people are colorblind based on what you know about the eye.

Incomplete or lack of cone development in retina - optic nerve does not get info

12. A corneal replacement is done when damage to the cornea causes a drop in vision, or pain that interferes with daily activities such as driving or reading. Describe the role of the cornea and how it works.

Covers front of eye - first part light goes through. cornea changes shape + helps focus

13. Peter's vitreous has begun to shrink due to his old age, causing his retina to detach. What is the role of the vitreous gel in the eye and how will a detached retina affect his vision?

* vitreous gel keeps shape of eye + lens + retina in place
* nerves will not be able to receive impulse to send to optic nerve / brain

14. Which types of cells on the retina are responsible for night vision?

rods.

15. Daniella sees a plane flying in the sky. Place the following events in order according to what happens in each of her eyes:

2 A) Light rays hit the retina
5 B) The brain analyzes and interprets the image
3 C) The nerve cells in the macula convert the light rays into nerve impulses.
4 D) Nerve impulses are sent to the brain
1 E) The lens stretches and flattens

E - A - C - D - B