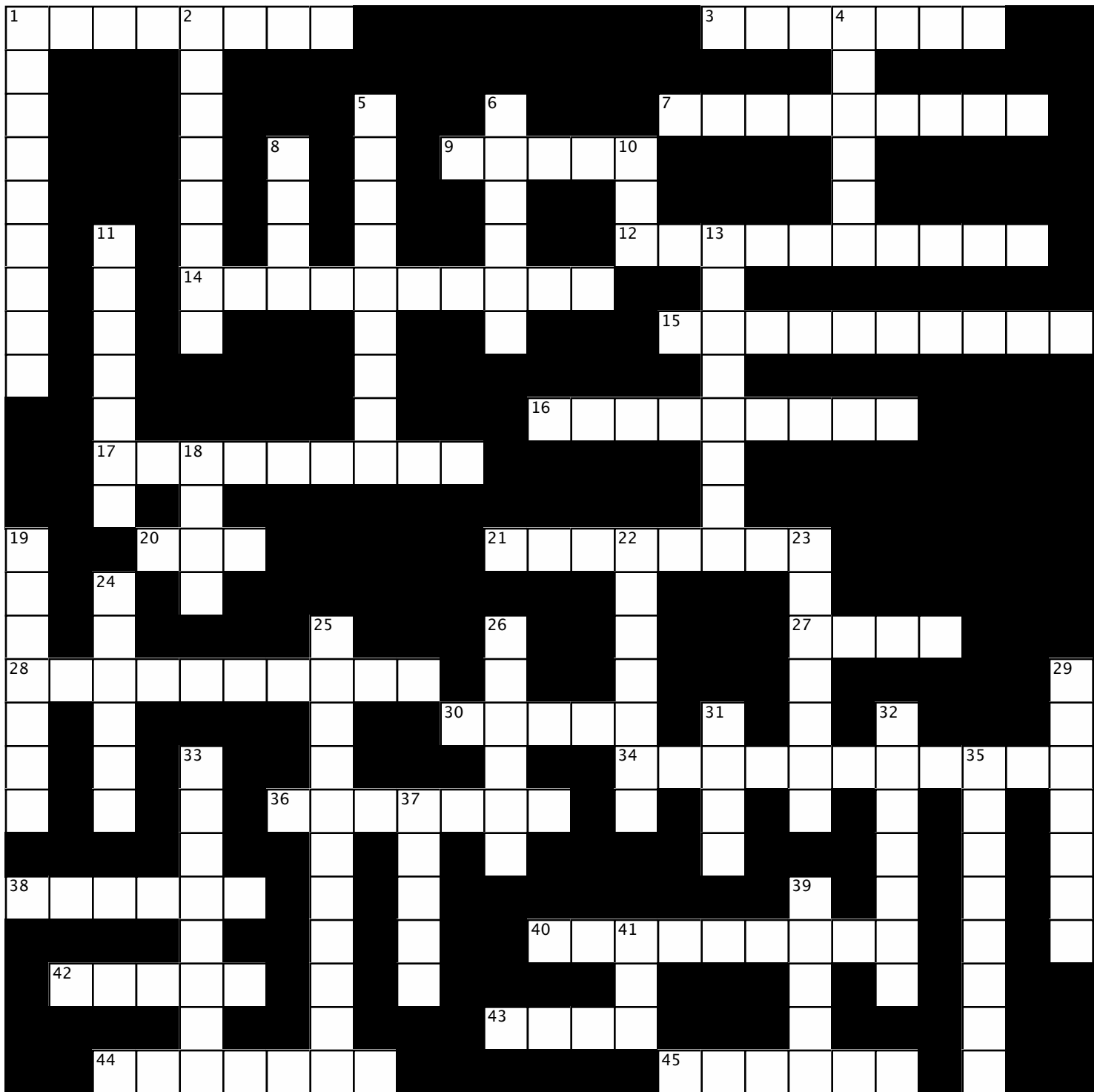


Homework 8

PH102
Summer 2009
Dr. LeClair



Across

1. This sort of filter has an inductor running to ground
3. This guy with a crazy beard united all of electricity and magnetism
7. Lenses that are concave on both sides are

Down

1. I made one of these motors with a battery, magnet, wood screw, and a short bit of wire
2. This sort of surface reflects all incident rays to a single point

Across

9. Total internal reflection occurs when light attempts to move into a medium with this type of refractive index
12. Dependence of refractive index on wavelength
14. This equation relates the focal distance and lens refractive index to the radii of curvature of both sides of the lens
15. Bending of light
16. This does not change when light travels from one medium to another
17. An aberration that occurs when rays hit a spherical mirror at angles too large relative to the principle axis
20. You need this sort of color mixing for displays
21. This sort of electromagnetic wave is produced by hot objects, and has wavelengths in the millimeter-micrometer range
27. For this type of mirror, the image appears as far behind the mirror as the object is in front of it
28. Lenses that are convex on both sides are
30. The most intense and penetrating electromagnetic waves
34. This device changes a small ac voltage to a larger one, and vice versa.
36. Two lenses in series have a magnification factor that is the _____ of their individual magnification factors
38. You can correct this vision defect with a diverging lens. Technical term.
40. At this frequency, the current in an RLC series circuit is maximum.
42. This German physicist was the first to generate and detect EM waves in a laboratory setting. A unit of frequency is named for him.
43. This sort of current was used to brake an enormous pendulum in a lecture demonstration
44. Inductors get angry when this changes rapidly
45. This sort of visible light is refracted through larger angles in a prism

Down

4. A mirage can occur when air near the ground is this, compared to air just above
5. This aberration occurs when lenses focus different colors of light at different positions
6. Objects are closer than they appear in this type of mirror
8. The lens equations rely on the lens being this relative to other characteristic dimensions
10. At the top of a rainbo
11. This sort of filter has a capacitor running to ground
13. Reflection off of a smooth surface
18. Capacitors like the frequency to be
19. This sort of mirror shows you upside down until you get really close to it
22. Accelerating charges do this:
23. Reflection off of a rough surface
24. A convenience store mirror is of this sort
25. This lets waves bend around a corner
26. The energy of a photon depends on its frequency and this fundamental constant
29. These images cannot be projected
31. The focal point of a concave spherical mirror form at this fraction of the mirror radius
32. The "red shift" of receding galaxies is a manifestation of this effect
33. This component is fairly indifferent to the frequency of a signal
35. Light carries this, even though it has no mass
37. This device only lets current flow in one direction, the electrical analogue of a check valve
39. Law of refraction
41. The "water" you often see on the road is really an image of this