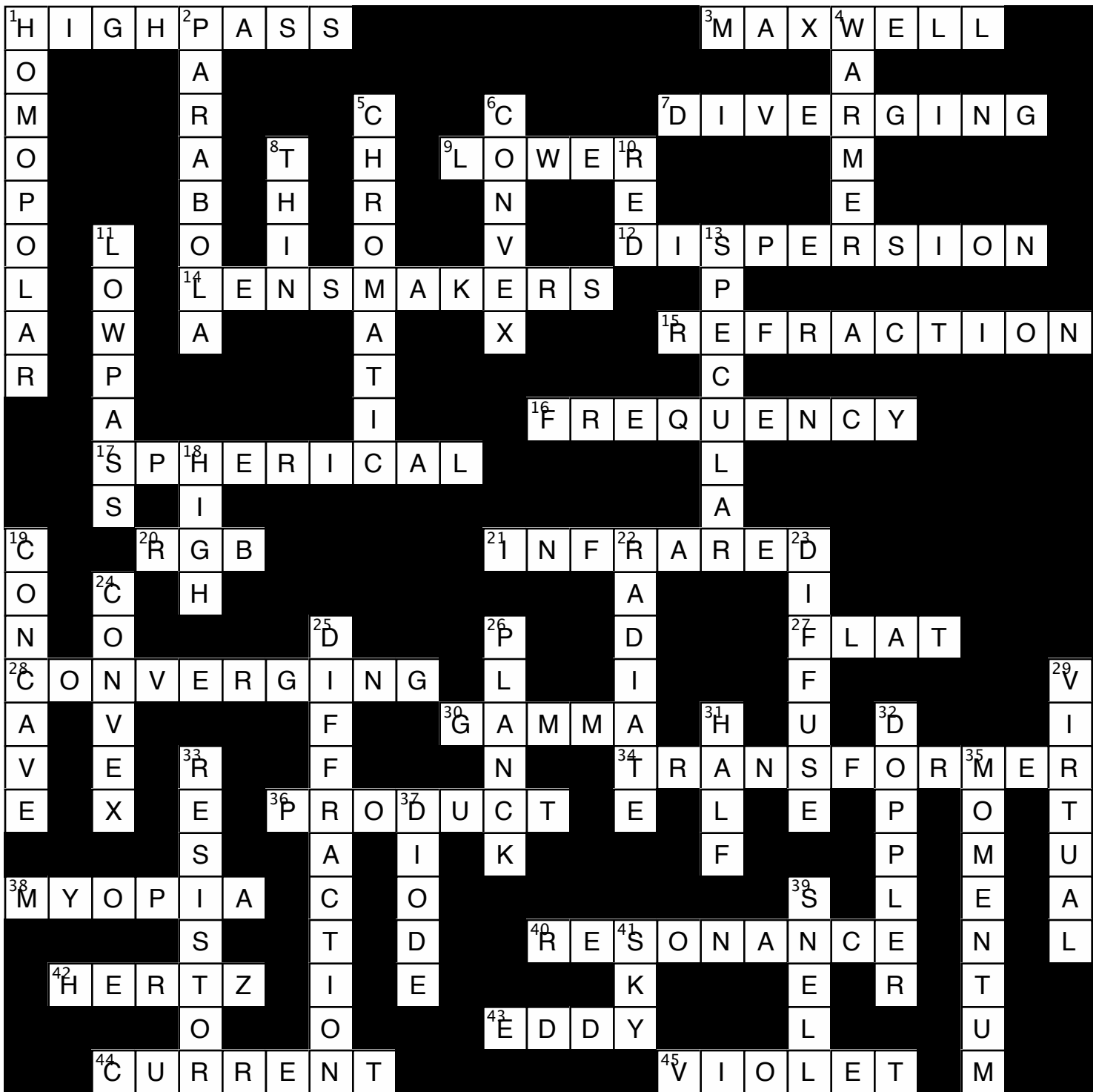


Homework 8

PH102
Summer 2009
Dr. LeClair



Across

1. This sort of filter has an inductor running to ground [HIGHPASS]
3. This guy with a crazy beard united all of electricity and magnetism [MAXWELL]

Down

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

Across

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

Down

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