Name _____ Period _____ Date _____

Physical Science Light Test 2015-2016

1. The speed of _____ is about 1 million times faster than the speed of sound. It is _____m/s

2. All frequencies of _____   _____are represented by the **electromagnetic spectrum**.

3. The categories for the electromagnetic spectrum are:
_____, _____, _____, _____, _____, and gamma.

4. What are cone cells in the eye sensitive to? _____

5. Microwaves are a type of _____ wave. (one of the parts of the E-M Spectrum).

6. Radio waves are used in communications and include AM, which stands for _____ modulation.

7. FM stands for _____modulation.

8. Microwaves are used for communications, _____, and _____.

9. Radar stands for _____ _____ _____ _____ and is used to locate objects.

10. Infrared Light is the category of waves also called heat light. Infrared cameras also called _____ vision cameras.

11. A _____ is a picture that represents different levels of heat, often shown in different colors for each level.

12. The colors in the visible spectrum are _____ _____ _____ _____ _____ _____ _____

13. The category of light just above visible light is called _____ light. This category has higher energy than visible light and can kill living cells, and damage your skin.

14. _____light can be used in a hospital and can treat instruments to kill germs and is called sterilization.

15. UV light can damage skin and using UV lights to do this is called _____ and is usually considered attractive when done in small amounts. Too much of this can lead to skin cancer.

16. The point where light rays are refracted to when using a lens is called the _____ _____.

17. X-Rays have enough energy to pass through many materials, including skin and flesh. _____can be used to absorb X-Rays and is used to protect you when getting x-rays.

18. If **green light** shines on **red** fruit, what color does the fruit appear to be? _____

19. The term for anything that gives off its own light is _____. Examples might include light bulbs, fire, stars, fireflies.

20. If something can only be seen once light strikes it and is reflected, this material is considered to be _____. Examples might include the moon, people, a textbook and much more.

21. The light that comes from things that are so hot that they glow is called _____ light. A good example is a regular light bulb.

22. _____ light is much cooler than light from a regular bulb. Light of this kind is made when the electrons around the atoms in a gas are excited and go to higher energy levels. When the electrons go back to lower levels, energy is given off and this can cause phosphors in the bulb to give off light.
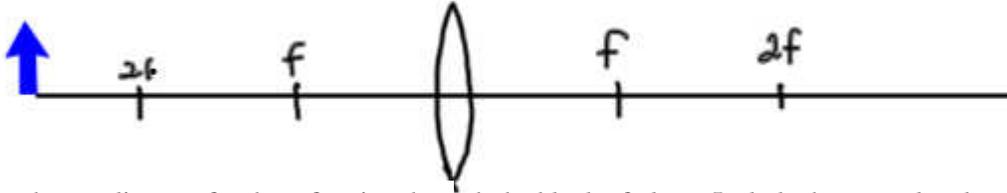
23. Gases that glow red/orange because they have electrons flowing through them are usually called _____ lights even though many different gasses can be used to make colors other than red/orange.

24. The Ray Model of light states that light travels in _____ lines called Light Rays. This property of light also allows shadows to be formed.

25. The bouncing of light off of objects is called _____.

26. _____ reflection can be found in mirrors where the surface is very smooth.

27. _____ reflection is what you get when the surface is too rough and the light gets reflected in many different directions. This happens when light strikes paper and explains why we cannot see our reflection in a piece of paper.

28. A flat mirror is also called a _____ mirror and is what you find in ordinary wall mirrors.

29. A _____ mirror can be used to magnify your image. These are often used for shaving or putting on make-up.

30. A _____ mirror can show wide areas and is often used as a security mirror.

31. Refraction is the _____ of light due to changes in its speed through that material. Light is fastest in a vacuum and slower in everything else.

32. The amount that light slows and bends a material is called the _____ _____ _____.

33. Each wavelength of light bends a different amount and the longer wavelengths bend less than shorter wavelengths. Red bends the least and _____ bends the most in the visible spectrum.

34. Breaking white light into its different colors can be done with a triangular piece of glass called a _____. This is called the _____ _____.

35. A _____ lens is the same type of lens in a magnifying glass.

36. What color of light does a red object reflect? _____

37. A material is said to be _____ if **light and images** can easily pass through. Examples might be clear glass, air, water, plastic.

38. If only light can pass through, but **not** images, then this material is said to be _____. Examples might be paper, frosted glass, wax paper.

39. A material that does not let any light at all through it is said to be _____. Examples could be metal, wood, rock, etc.

40. _____ is the color that reflects all visible light. It is also slower to get hot in sunlight.

41. _____ is the color that absorbs all visible light and gets hot quickly in the sun. It also is faster to cool off when the sun goes down.

42. Cyan, Magenta and Yellow are the _____ colors of light.

43. Cyan, Magenta and Yellow are also the Primary Colors of _____ and if you add black are the colors that you buy for your inkjet printer.

44. When color pictures are printed at a print shop, they use what is called _____ color printing and the inks are Cyan, Magenta, Yellow and Black.

45. When we see a pigment, it is actually absorbing some of the light striking it and reflecting some of it. The light that we see is the light that is being _____.

46. Light waves can travel vertically, horizontally, or at any angle in between. A special filter that only allows light that is aligned to its tiny slits to pass through is called a _____ filter. We can use glasses made of this material to cut out glare from a road or a lake.
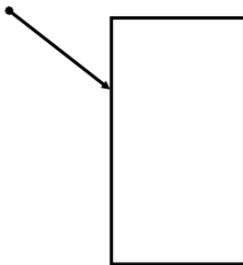
47. A _____ lens is thicker in the middle than on the edges.

48. The Law of Reflection states that the angle of reflection equals the angle of _____

49. Draw a ray diagram using the three rules. Draw the image of the arrow in the correct place.

50. Draw the ray diagram for the refraction through the block of glass. Include the normal and projected rays.

51. Label the color wheel for LIGHT (not pigment). Do not leave any blanks.