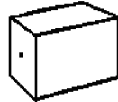


5. Power is transmitted for long distance at high voltages because the corresponding current in the wires is
- also high to deliver appreciable power to distant places.
 - low so that overheating of the wires is minimized.
 - repels the birds, not allowing them to sit on wires.
- (1) B only (2) A only (3) A and B (4) C only (5) A and C
6. The metal detectors that people walk through at airports operate via
- (1) Faraday's law. (2) Newton's laws. (3) Ohm's law. (4) Coulomb's law. (5) civil laws.
7. Which of these electromagnetic waves has the shortest wavelength?
- (1) X-rays (2) light waves (3) ultraviolet waves (4) infrared waves (5) radio waves
8. Compared to radio waves, the velocity of visible light waves in a vacuum is
- (1) the same. (2) more. (3) less. (4) — (5) —
9. While an observer on Earth is experiencing a total solar eclipse, an observer on the side of the moon facing the earth would see
- a tiny dark spot move across the face of Earth.
 - nothing unusual.
 - Earth dim and turn reddish.
 - Earth disappear from the sky.
 -
10. **** BONUS QUESTION ****
In the periphery of our vision, we are
- sensitive to movement, but cannot see color.
 - sensitive to both movement and color.
 - more sensitive to low frequencies than high ones.
 - insensitive to color and movement.
 - none of these
11. The main difference between a radio wave and a sound wave is their different
- (1) modes of travel. (2) frequencies. (3) energies. (4) amplitudes. (5) wavelengths.
12. What is the frequency of an electromagnetic wave that has a wavelength of 300,000 km?
- (1) 1 Hz (2) more than 1 Hz (3) less than 1 Hz (4) — (5) —
13. The colored dots that make up the color on a TV screen are
- (1) red, blue, green. (2) red, blue, yellow. (3) yellow, blue, green. (4) red, green, yellow. (5) magenta, cyan, yellow.
14. Complementary colors are two colors that
- produce white light when added together.
 - look good together.
 - are right for each other.
 - are additive primary colors.
 - are subtractive primary colors.

15. Colors seen on TV result from color
 (1) addition. (2) subtraction. (3) either addition or subtraction (4) neither addition nor subtraction (5) —
16. Different colors of light correspond to different light
 (1) frequencies. (2) polarities. (3) velocities. (4) intensities. (5) none of these
17. **** BONUS QUESTION ****
 The yellow clothes of a stage performer can be made to look black if illuminated only by light that is
 A. magenta plus cyan. B. blue.
 (1) both A and B (2) neither A nor B (3) A only (4) B only (5) —
18. A mixture of cyan and yellow pigments appears
 (1) green. (2) blue. (3) blackish brown. (4) magenta. (5) orange.
19. Light will almost always travel from one place to another along a path of least
 (1) time. (2) distance. (3) effort. (4) expense. (5) complication.
20. The shortest plane mirror in which you can see your entire image is
 (1) half your height.
 (2) equal to your height.
 (3) about $1/3$ your height.
 (4) about $3/4$ your height.
 (5) dependent on your distance from the mirror.
21. Refraction results from differences in light's
 (1) speed. (2) incident angles. (3) frequency. (4) all of these (5) none of these
22. The image in a pinhole camera is 
 (1) always inverted. (2) sometimes inverted. (3) always right-side up. (4) — (5) —
23. When the pinhole in a pinhole camera is made larger, the image is
 (1) brighter. (2) clearer. (3) both brighter and clearer. (4) neither brighter nor clearer. (5) —
24. Different colors of light travel at different speeds in a transparent medium. In a vacuum, different colors of light travel at
 (1) the same speed. (2) different speeds. (3) light travels at the same speed everywhere. (4) — (5) —
25. Waves diffract the most when their wavelength is
 (1) long. (2) short. (3) Both diffract the same. (4) depends on the power. (5) depends on amplitude.
26. Interference is a property of
 A. light waves. B. water waves. C. sound waves.
 (1) all of these (2) A only (3) B only (4) C only (5) none of these

27. Light will not pass through a pair of Polaroids when their axes are
A. parallel.
B. 45 degrees to each other.
C. perpendicular.
- (1) C only (2) A only (3) B only (4) two of these (5) all of these
28. The polarization axes of glasses for 3-D viewing are
(1) at right angles to each other. (2) vertical. (3) horizontal. (4) — (5) —
29. Which of the following is a property of light waves, but not of sound waves?
(1) polarization (2) frequency (3) wavelength (4) amplitude (5) none of these
30. Double the frequency of a sound and you halve its
(1) wavelength. (2) speed. (3) amplitude. (4) wavelength, speed and amplitude. (5) none of these
31. Sound travels faster in
(1) steel. (2) a vacuum. (3) air. (4) water. (5) Sound travels at about the same speed in all media.
32. Caruso is said to have made a crystal chandelier shatter with his voice. This is a demonstration of
(1) resonance. (2) sound refraction. (3) an echo. (4) interference. (5) beats.
33. A 340-hertz sound wave travels at 340 m/s in air with a wavelength of
(1) 1 m. (2) 100 m. (3) 1000 m. (4) 10 m. (5) None of these
34. Inhaling helium increases the pitch of your voice. The reason for this is that sound travels
(1) faster in helium than in air.
(2) slower in helium than in air.
(3) the same speed in helium, but the wavelength is greater.
(4) —
(5) —
35. The beat frequency produced when a 240 hertz tuning fork and a 246 hertz tuning fork are sounded together is
(1) 6 hertz. (2) 240 hertz. (3) 246 hertz. (4) 12 hertz. (5) 243 hertz.

THE FOLLOWING QUESTIONS, NUMBERED IN THE ORDER OF THEIR APPEARANCE ON THE ABOVE LIST, HAVE BEEN FLAGGED AS CONTINUATION QUESTIONS: 23