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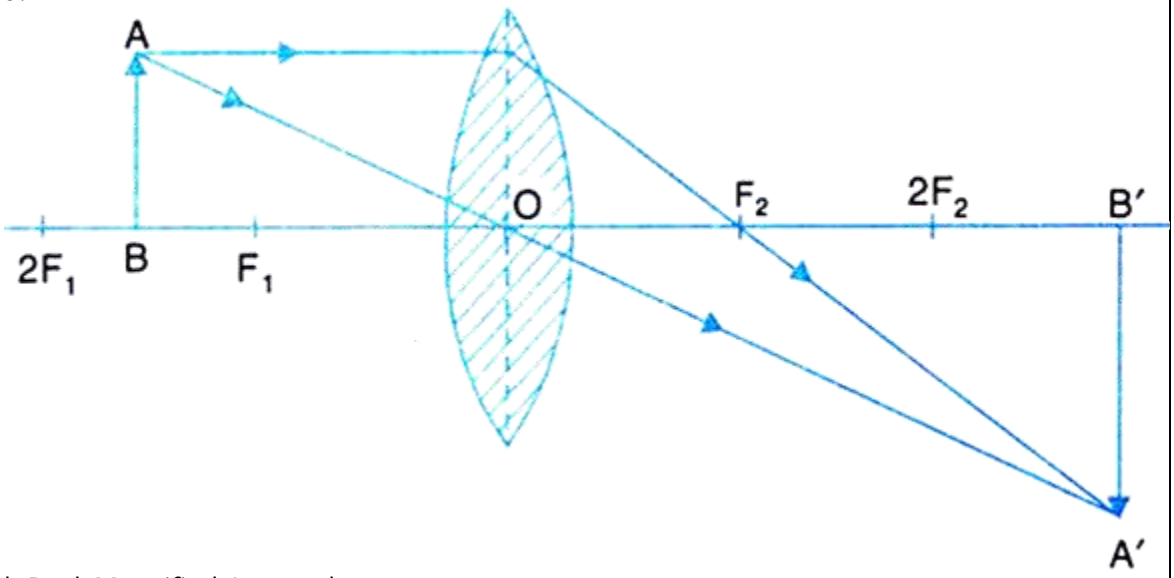
PHYSICS Answer Key

By www.educationobserver.com

	Answer
1	Nichrome
2	50V
3	Optic Centre
4	1V
5	Split Ring Commutator
6 S	Scattering of light
7	Kilowatt hour
8	Flemings Left hand rule
9	Regular Reflection
10	-20 cm
11	1. Never handle electric equipment's or operate switches when the hands are wet. 2. Insert plug pins into socket and withdraw them only after switching off. 3. Wear rubber footwear while operating electric devices. 4. Do not fly kites near electric lines. 5. Do not use table fan to dry hair.
12	Persistence of Vision
13	a) Violet b) Red c) Because of different wave lengths
14	a. Electrical→ mechanical b. The electrical pulses from a microphone are strengthened using an amplifier and sent through the voice coil of a loudspeaker. The voice coil, which is placed in the magnetic field, moves to and fro rapidly, in accordance with the electrical pulses. These movements make the diaphragm vibrate, thereby reproducing sound
15	Secondary voltage is greater than primary voltage. Current in the primary coil is greater than that in the secondary coil. Thick wires are used in the primary.
16	a. -v/u =- (-24)/-12 = -2 b. $M=h_i/h_{o,}$ so $h_{i=}$ m x $h_{o=}$ -2x5 -10cm c. If Magnification is negative image is real & inverted, If Magnification is positive image is virtual & erect.
17	a. LED Lamp b. converting electrical energy to light energy by ionizing the gas particles.
18	a. AC b. 1. Magnet 2. Armature 3. Sliprings 4. Brushes

	c. Electromagnetic Induction
19	a.  b.Real, Magnified, Inverted C. It should be placed at 2F distance in front of the lens
20	Energy crisis is the consequence of increasing demand but decreasing availability. **Reasons for energy crisis** Energy is wasting. Excess usage of non renewable sources of energy. Industrialization Population growth
21.	a. It means that it uses 100 watts of power at its rated voltage 200V. t also means that it will use 1kWh of energy for every 10 hours it is on. b. $R= V^2/ P= 200^2 /100= 400\Omega$ c. LEDs are extremely energy efficient and consume up to 90% less power than incandescent bulbs. Since LEDs use only a fraction of the energy of an incandescent light bulb there is a dramatic decrease in power costs. Also, money and energy is saved in maintenance and replacement costs due to the long LED lifespan.
22	a. Kilowatt hour meter b. There is no division of voltage among the appliances when connected in parallel. The potential difference across each appliance is equal to the supplied voltage. Any damage/ failure of one device will not affect the entire circuit The total effective resistance of the circuit can be reduced by connecting electrical appliances in parallel. Other components will function even if one component breaks down, each has its own independent circuit. We can control each device using its own switches.

	c. The main purpose of ELCB is to detect Earth leakages and prevent injury to human beings from electrical shocks and prevent electrical fires that are caused by short Circuit.
23	a. 42^0 b. Figure c c. When a ray of light passes from a medium of higher optical density to a medium of lower optical density at an angle of incidence greater than the critical angle, the ray is reflected back to the same medium without undergoing refraction. This phenomenon is known as total internal reflection. d. Some examples of total internal reflection in daily life are the formation of a mirage, shining of empty test-tube in water, shining of crack in a glass-vessel, sparkling of a diamond, transmission of light rays in an optical fibre, etc.
24 .	a. In Parellel Circuit R = $^{R1XR2}/_{R1+R2}$ = $^{6x6}/_{6+6}$ = $^{36}/_{12}$ = 3Ω In Circuit B R= $R1 + R2$= 6+6= 12 Ω b. intensity of electric current in Circuit A, I= $^{voltage}/_{R}$ = $^{12}/_{3}$ = 4A c. H= $^{V2\ x\ t}/_{R}$ = (12^2x30x60)/12 = 12x30x60= 21600J = 21.6KJ