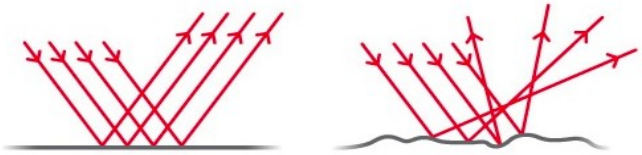
SECOND TERM EVALUATION 2022-23

PHYSICS ANSWER KEY

Standard: X

QN NO	ANSWER KEY
1	Convex Mirror
2	Kilowatt hour or kwh
3	Magnification
4	Refractive Index
5	100W (same as that of primary)
6	a)Solenoid or Inductor
	b)An inductor has the functions of developing electromotive force in the direction that reduces fluctuation when a fluctuating current flows and storing electric energy as magnetic energy.
7	No: of Images= $\frac{360}{60}-1=5$
8	(a) & (d)
9	A three-pin plug's pin E makes contact with the earth line. This pin is now connected to the appliance's body. Electricity flows to the ground through the earth wire if the body comes into contact with an electric connection.
10	a) At C b)At C
11	a)42^0 b)The critical angle is the angle of incidence to which the angle of refraction is equivalent to 90 ° . When light enters a denser media from such a comparably rarer medium, the orientation of light changes as well as the light beam bending towards the normal. c) figure:C
12	a) A to B b)Fleming's left-hand rule Fleming's left-hand rule can be stated as stretching the forefinger, middle finger, and thumb of the right hand such that they are mutually perpendicular to each other. Here, the forefinger indicates the direction of the magnetic field, The middle finger indicates the direction of current in the conductor.
13	a) h_0=6cm, u= - 8cm , v = -16cm

	m= $\frac{-v}{u}=\frac{-(-16)}{-8}=-2$ b)m = $\frac{hi}{ho}$, -2 = $\frac{hi}{6}$, hi = - 2 x 6 = - 12 cm
14	a)Mutual Induction b)N_p=1500, N_S = 7500 V_S =250 V P= 100W $\frac{Vs}{Vp}=\frac{Ns}{Np}$ $\frac{250}{Vp}=\frac{7500}{1500}$ Vp = $\frac{250}{5}=50V$ c) $I_P \times V_P = I_S \times V_S$ we have P =100W $I_P \times 50 = 100$ $I_P = 100/50 = 2A$
15	a) Medium 1, because of less Angle of refraction b)Medium 1
16	a) generation, transmission and distribution. b)One of the main causes of power loss is the J**oule effect** found in transformers and power lines. The energy is lost in the form of **heat** in the conductors. c)By **reducing the current**, therefore, the I^2R losses can be minimized. Power companies use step-up transformers to **boost the voltage** to hundreds of kV before it is transmitted down a power line, reducing the current and minimizing the power lost in transmission lines.
17	Total Power of CFL = 5 x 20W =100W, hour = 4hr Total Power of Fan =4 x 60W =240W, hour = 5hr Energy consumed by CFL = $\frac{100\,W\,x\,4\,hr}{1000}=0.4\,unit$ Energy consumed by Fan = $\frac{240\,W\,x\,5\,hr}{1000}=1.2\,unit$ Total Energy in one day = 0.4+1.2 =1.6 unit
18	a) (1)Keep all electric appliances away from places where there is water, such as a sink, toilet, or bathtub. (2)Never use a damaged extension cord

	(3)Before changing a lightbulb, switch the light off or unplug the lampare wet or if the appliance is on a wet surface. (4)wear rubber footwear while operating electrical device (b) (1)Raise the temperature of the body by massaging (2)Give Artificial Respiration (3)Massage the muscles and bring the original condition (4)Start first aid for the functioning of the heart
19	a)For a smooth surface, reflected light rays travel in the same direction. This is called specular reflection. For a rough surface, reflected light rays scatter in all directions. This is called diffuse reflection c)The light that gets reflected at a rough(wall) and uneven surface goes in different direction, due to irregular reflection. This is the reason why a wall whose surface is rough cannot produce clear image. Specular reflection Diffuse reflection 
20	a)30^0 b)Snell's Law c) $\frac{\sin(i)}{\sin(r)}=\frac{n_{glass}}{n_{air}}=n_{glass}$ because $n_{air}=1$ d)The refractive index of any medium with respect to another medium which is not vacuum is called relative refractive index.