

Kerala SSLC Physics 2024 Answer Key

Section A

Questions	Answers
1	Solar energy/wind energy/geothermal energy
2	Myopia
3	Nuclear fission
4	$f=0.5\text{m}$ OR $f=50\text{cm}$
5	$V=4\text{ V}$
6.a	a. Fleming's left Hand Rule
6.b.i	reverse the direction of the current
6.b.ii	Reverse the direction of the magnetic field
7.a	Right-hand thumb rule: If you imagine holding a current-carrying conductor in your right hand with your thumb pointing towards the direction of current, then the direction in which your fingers curl, gives the direction of magnetic field
7.b.i	increase current
7.b.ii	Increase the number of turns
8.a	Sound Energy – The diaphragm vibrates – The coil vibrates in the magnetic field – Electric signal
8.b	Electromagnetic induction
10.a	tungsten
10.b.i	High resistivity
10.b.ii	Ability to emit white light on heating
10.b.iii	High melting point
11.a	a. 6

12.a	No. The magnetic field is developed around both solenoids. But in the first circuit, the field is steady and that in the second circuit varies.
12.b	Circuit.2, because self-induction occurs when an electromotive force (emf) is induced in a coil due to variable current passing through it
13	Concave mirror – Always forms enlarged image – used by dentist Convex mirror – Always forms diminished image – Used as a rear view mirror in vehicles Plane mirror – The size of the image and the size of the object will be equal. – To see the face
14.b	Enlarged, inverted and real
15.a	It is the heat energy liberated by the complete combustion of 1 kg of fuel
15.b.i	Availability of sufficient oxygen
15.b.ii	For solid fuels, it must be dry
15.b.iii	Liquid fuels must evaporate easily
15.c.i	high calorific value, low pollution, high availability, low cost
16.a	Current, $I=0.5\text{ A}$
16.b	Power, $P=115\text{ W}$
16.c	$H=69000\text{ J}$
17.a	Primary coil, because when thick wire is utilized, the resistance of the coil can be reduced. There are two advantages to this
17.a.i	Overheating of the coil can be avoided
17.a.ii	The transformer's efficiency can be increased/energy loss minimized
17.b	Mutual induction transfers power from the primary coil to the secondary coil. Passing a variable current through one of two neighboring coils induces an emf in the second. This behavior is known as mutual induction
18.a	It signifies that the image is both inverted and actual
18.b	$u = -40\text{ cm}$, $m = -4$, $v = 40 \times -4 = -160\text{ cm}$
18.c	$f = (-) 32\text{ cm}$

19.a	When light moves from a dense medium to a less dense medium, the angle of incidence at which the angle of refraction is 90° is known as the critical angle .
19.b	The ray will be reflected back onto the glass
19.c	Total internal reflection occurs when the light goes from a media with higher optical density to a medium with lower optical density. If the angle of incidence exceeds the critical angle, the light is reflected back into the same medium rather than refracted
20.a	a. Persistence in vision
20.b	Because of its long wavelength, red scatters the least
20.c	Blue is a colour with a shorter wavelength. As a result, it scatters and spreads widely across the atmosphere
20.d	Tyndal effect

