

Question FBQ1 : The bending of a ray of light when it travels through a medium is called \_\_\_\_\_.

Answer: refraction

Question FBQ2 : A prism has \_\_\_\_\_ plane surface(s) which is/are called refracting face(s)

Answer: two

Question FBQ3 : The angle between the two refracting faces of a prism is called angle of \_\_\_\_\_

Answer: prism

Question FBQ4 : When seeking the null point, the key K should be closed before contact is made at the point of balance. This is done to avoid deflections due to \_\_\_\_\_.

Answer: induction effects

Question FBQ5 : Convex mirrors are mostly used as \_\_\_\_\_.

Answer: driving mirrors

Question FBQ6 : The angle between the incident and the emergent rays in a prism is called the angle of \_\_\_\_\_.

Answer: deviation

Question FBQ7 : In an experiment, derived values such as those obtained from four figure tables should be recorded to at least \_\_\_\_\_ decimal places

Answer: 3

Question FBQ8 : Which of the following remains unchanged when refraction occurs?

Answer: Frequency

Question FBQ9 : The slide wire of the figure shown is balanced when the uniform slide wire AB is divided as shown. The value of the resistance X is \_\_\_\_\_.

Answer: 2

Question FBQ10 : \_\_\_\_\_ is the apparent motion between an object and its image, situated along the line of sight, relative to each other.

Answer: Parallax

Question FBQ11 : In the minimum deviation position of the prism, the refracted ray passes parallel to the base of the \_\_\_\_\_.

Answer: prism

Question FBQ12 : The advantage of potentiometer over voltmeter in measurements of emf is that it does not draw \_\_\_\_\_ from the circuit under test.

Answer: Current

Question FBQ13 : A glass prism of refracting angle 60 degrees gives a minimum deviation of 47degrees. What is the refractive index of the glass?

Answer: 1.61

Question FBQ14 : Obtaining a rough value for the focal length of a concave mirror can be achieved by focusing the \_\_\_\_\_ of a distant window on to a sheet of paper

Answer: image

Question FBQ15 : The \_\_\_\_\_ of the eye plays an equivalent role of the screen in optical experiments

Answer: Retina

Question FBQ16 : The distance between the sharpest image on the paper or on the wall gives the approximate focal length of the mirror

Answer: length

Question FBQ17 : Which mirror is used as a dentist mirror?

Answer: concave

Question FBQ18 : If an object is placed at the principal focus of a concave mirror, its image will be formed at:

Answer: Infinity

Question FBQ19 : An image that can be formed on a screen is said to be \_\_\_\_\_.

Answer: Real

Question FBQ20 : For a concave mirror to form a real diminished image, the object must be placed at a distance greater than the \_\_\_\_\_.

Answer: radius of curvature  $\hat{A}$

Question FBQ21 : A virtual image is always :

Answer: upright

Question FBQ22 : No parallax tells us that the two objects are \_\_\_\_\_.

Answer: Coincident

Question FBQ23 : \_\_\_\_\_ is the apparent motion between an object and its image, situated along the line of sight, relative to each other in an experiment.

Answer: Parallax

Question FBQ24 : A 10 ohm and a 20 ohm resistor are connected in parallel to a current source. What fraction of the current flows through the 20 ohm resistor?

Answer:  $\frac{1}{3}$

Question FBQ25 : An object is placed 15 cm in front of a convex mirror of focal length 7.5 cm. The image position behind the mirror is \_\_\_\_\_.

Answer: minus 5 cm

Question FBQ26 : A glass prism is made from transparent refracting medium with two refracting faces and a refracting edge of the prism. The two refracting faces give \_\_\_\_\_.

Answer: angle of prism

Question FBQ27 : A ray of light experiences a minimum deviation when passing symmetrically through an equilateral triangle. The angle of incidence of the ray for a glass of 1.5 refractive index is \_\_\_\_\_

Answer: 49°

Question FBQ28 : A resistor of value  $R/2$  is connected in parallel with a resistor of value  $R/3$ . The voltage drop across the parallel combination is  $V$ . The total current supplied by the voltage source is \_\_\_\_\_.

Answer:  $5V/R$

Question FBQ29 : Resistivity of iron is  $10^{-7} \Omega\text{-m}$ . The resistance of an iron wire is  $1 \Omega$ . If its diameter is halved and length doubled, the resistivity in  $\Omega\text{-m}$  will be equal to \_\_\_\_\_.

Answer:  $10^{-7}$

Question FBQ30 : To get three images of a single object, one should have two plane mirrors at an angle of \_\_\_\_\_.

Answer:  $90^\circ$

Question FBQ31 : How many images will be formed when two plane mirrors are placed parallel to each other?

Answer: One

Question FBQ32 : The minimum deviation ( $d_{\min}$ ) is unique and can be found from the graph of deviation against \_\_\_\_\_

Answer: incidence

Question FBQ33 : Every material offers some resistance to the flow of \_\_\_\_\_.

Answer: current

Question FBQ34 : The ratio of voltage  $V$  to current  $I$  is equal to a quantity which gives the measure of \_\_\_\_\_ offered by the conductor to the flow of charge

Answer: resistance

Question FBQ35 : The relationship between the voltage  $V$ , the current  $I$  and the resistance  $R$  is known as \_\_\_\_\_ law.

Answer: Ohm

Question MCQ1 : Which of the following experiments can be suitably used to practically verify the laws of refraction?

Answer: Refraction through the glass block experiment

Question MCQ2 : Which of the following is not a right precaution in experiment to determine the refractive index of glass?

Answer: The two pins erected should NOT be straight.

Question MCQ3 : Which of the following experiments can be suitably used to practically determine the angle of minimum deviation?

Answer: Refraction experiment by triangular glass prism

Question MCQ4 : Which of these quantities remains unchanged when light passes from a vacuum into a block of glass\_\_\_\_\_.

Answer: Frequency

Question MCQ5 : All the following are required as apparatus in refraction using glass block experiment EXCEPT \_\_\_\_\_.

Answer: G-Clamp

Question MCQ6 : A beam of light is incident on a perfectly smooth body of water. The angle that the REFLECTED ray makes with the normal is \_\_\_\_\_.

Answer: the same as the angle the incident ray makes with the normal

Question MCQ8 : A five ohm and a ten ohm resistor are connected in parallel, the single resistance "equivalent" to this combination is \_\_\_\_\_

Answer: 3.33 Ohms

Question MCQ9 : A current of 6 amperes flows through a 2 ohm resistor for 30 seconds. How many coulombs of charge have passed through the resistor?

Answer: 180C

Question MCQ10 : Snell's law is the ratio of sine of angle of incidence to the sine of angle of \_\_\_\_\_

Answer: refraction

Question MCQ11 : Which of the following is required in an experiment to determine the focal length of a mirror?

Answer: All the options

Question MCQ12 : In an experiment to verify Snell's law, one must ensure that\_\_\_\_\_.

Answer: the pins are in line before removing the glass block

Question MCQ13 : Concave mirror is a curved mirror which is silvered\_\_\_\_\_.

Answer: in its outer side

Question MCQ14 : Convex mirror is a curved mirror which is silvered\_\_\_\_\_ .

Answer: from inside

Question MCQ15 : A 10 ohm and a 20 ohm resistor are connected in parallel to a current source. What fraction of the current flows through the 20 ohm resistor?

Answer: 1/3

Question MCQ16 : A steady current flows in a metallic conductor of non-uniform cross-section. Which of the following quantity is constant along the conductor?

Answer: current

Question MCQ17 : A galvanometer of resistance  $100\ \Omega$  is converted to an ammeter

using resistance of  $0.1\ \Omega$ . It gives full scale deflection at  $100\ \frac{1}{4}\text{A}$ . The minimum current in the circuit for maximum deflection is

Answer:  $100.1\ \text{mA}$

Question MCQ18 : A rigid container with thermally insulated walls contains a coil of resistance  $100\ \Omega$  carrying current  $1\ \text{A}$ . Change in internal energy after 5 minutes is

Answer:  $30\ \text{kJ}$

Question MCQ19 : Which is NOT a characteristic of a series circuit?

Answer: The total resistance is the sum of the reciprocals of the individual resistances.

Question MCQ20 : A charge of  $3\ \text{C}$  experiences a force of  $3000\ \text{N}$  when it is moved in a uniform electric field. What is the potential difference between two points separated by a distance  $\text{cm}$ ?

Answer:  $10\ \text{V}$

Question MCQ21 : A  $20\ \Omega$  resistor and a  $60\ \Omega$  resistor are connected in parallel to a voltage source. If the current in the  $60\ \Omega$  resistor is one ampere, the current in the  $20\ \Omega$  resistor will be:

Answer:  $3\ \text{A}$

Question MCQ22 : A virtual image always appears:

Answer: Erect

Question MCQ23 : You want to put up a mirror at a blind corner in a building. Which of the following will give you the largest field of view?

Answer: convex mirror

Question MCQ24 : A small hole in a sheet of aluminum foil is used to diffract yellow light both under water and in a vacuum. Which is true?

Answer: light diffracts less in the water because its wavelength is smaller.

Question MCQ25 : Which one of the following is the advantage of connecting two dry cells in parallel instead of in series? It is because the parallel arrangement:

Answer: has half the internal resistance of a single cell

Question MCQ26 : By which one of the following can a real image be produced? Can it be produced by a:

Answer: concave mirror

Question MCQ27 : When white light passes through a red plate of glass and then through a green plate of glass which one of the following things occur?

Answer: the light is totally absorbed

Question MCQ28 : The number of free electrons per unit volume in copper is  $n$ . The electrons each of charge  $q$  flowing with velocity  $v$  constitute current  $I$ . If  $A$  is the cross-sectional area of the wire, the current density in the wire is

Answer:  $nqv/A$

Question MCQ29 : If the change in resistance of a copper wire on stretching is 0.4 %, then its length is stretched by  
Answer: 0.2 %

Question MCQ30 : If an electron makes  $25 \times 10^{15}$  rev / s around the nucleus of an atom in an orbit of radius 1 Å , the equivalent current is nearly \_\_\_\_\_.  
Answer:  $4 \times 10^{-3}$  A

Question MCQ31 : A light ray traveling from glass into air strikes the glass-air surface at an angle 50 degrees to the normal. If the critical angle for the glass-air combination is 42 degrees, the percentage of light reflected from the surface is  
Answer: 100

Question MCQ32 : Which of the following is not a right precaution in an experiment to verify lens formula?  
Answer: Images of the first two pins should be in the straight line with the other two pins.

Question MCQ33 : When an object is placed in front of a Convex lens between  $F$  and  $2F$ , the nature of the image formed is \_\_\_\_\_.  
Answer: real and inverted

Question MCQ34 : When a prism is placed in minimum deviation position, the prism \_\_\_\_  
Answer: lies symmetrically with respect to incident ray and emergent ray

Question MCQ35 : Which of the following is true for a prism placed at minimum deviation?  
Answer: the angle of incidence is equal to angle of emergence

Question MCQ35 : Which of these quantities remains unchanged when light passes from a vacuum into a block of glass \_\_\_\_\_.  
Answer: Frequency

Question MCQ7 : Three resistors which have different values are connected in series. The correct statement is \_\_\_\_\_.  
Answer: The same current passes through all three resistors

Question MCQ35 : Which of these quantities remains unchanged when light passes from a vacuum into a block of glass \_\_\_\_\_.  
Answer: Frequency