

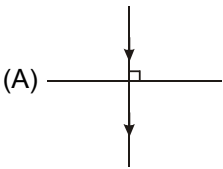
PHYSICS

CLASS X - CBSE

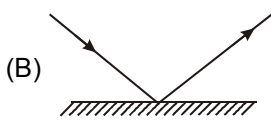
DAILY PRACTICE PROBLEMS SHEET

DPP NO. 1 TOPIC : LIGHT

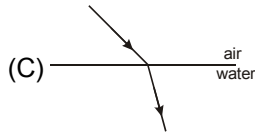
1. Choose wrong statement :
(A) Light is invisible energy (B) light causes in us sensation of sight
(C) Light may be obtained from heat energy (D) We can see light
2. Transparent medium is one :
(A) Which partially allows light to pass through
(B) Which absorbs most of the light
(C) Which allows most of the light to pass through
(D) None of these
3. Speed of light is maximum in :
(A) Air (B) Water (C) Glass (D) Vacuum
4. Which of the following is not a natural source of light :
(A) Sun (B) Oil-lamps (C) Moon (D) Stars
5. Light is :
(A) Transverse wave (B) Longitudinal wave
(C) Mechanical wave (D) Both (B) and (C) are correct
6. Example of transparent medium is :
(A) Air (B) Distill water (C) Glass (D) All are correct
7. Straight line path along which light travels in a given direction is :
(A) Ray (B) Line segment (C) Beam (D) None of these
8. Thick layer of water is :
(A) Transparent (B) Translucent (C) Opaque (D) None of these
9. Which of the following figure obeys rectilinear propagation of light :



(A)



(B)



(C)

(D) All of these
10. In a plane mirror, which layer acts as the reflecting layer :
(A) Glass sheet (B) Silver layer
(C) Orange red paint layer (D) Both (A) and (B) are correct
11. Give some examples of point source of light.
12. Give any three characteristics of light.
13. What do you understand by term light ?
14. What do you mean by heterogenous medium ?
15. Describe an experiment to prove rectilinear propagation of light.

Answers Key

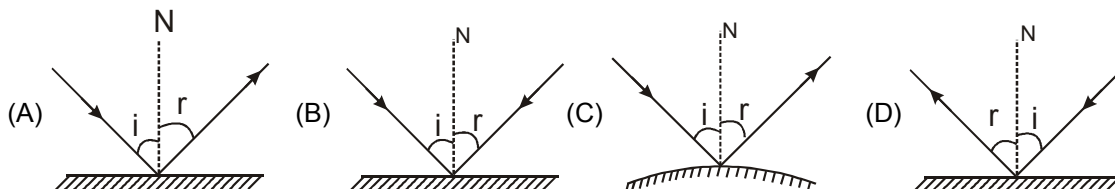
DPP NO. 1
TOPIC : LIGHT

1.	D	2.	C	3.	D	4.	C	5.	A	6.	D	7.	A
8.	B	9.	D	10.	B								

DPP NO. 2
TOPIC : LIGHT

1. Normal always lies between the incident ray and the reflected ray when the ray is incident obliquely on a surface. State true or false :
(A) True (B) False
(C) Cannot be determined (D) None of these

2. Choose the wrong option :



3. A thin plane mirror :
(A) Reflects light (B) Refracts light (C) Transmits light (D) None of these
4. A real image is formed when two or more :
(A) Reflected rays meet (B) Refracted rays meet
(C) Reflected rays appear to meet (D) Both A and B are correct
5. State true or false :-
(i) Laws of reflection are valid only for plane surfaces
(ii) A ray of light retraces its path after reflection in case of normal incidence
(iii) Glance angle of incidence is always equal to angle of reflection.
(A) TTT (B) FTF (C) FTT (D) FFT
6. We can see the things around us due to :
(A) Regular reflection (B) Irregular reflection (C) Specular reflection (D) Mixed reflection
7. The focal length of a spherical mirror whose radius of curvature is 20 cm is :
(A) 40 cm (B) 30 cm (C) 20 cm (D) 10 cm
8. The focal length of a plane mirror is :
(A) zero (B) 10 cm (C) 20 m (D) ∞
9. Inner side of a spoon is an example of :
(A) Concave lens (B) Concave mirror (C) Convex mirror (D) Convex lens
10. A ray of light is incident on a plane mirror at an angle of incidence i . Then the ray after reflection is deviated by an angle q equal to :
(A) i (B) $\pi - i$ (C) $2i$ (D) $\pi - 2i$
11. Explain the term reflection with the help of diagram & also explain :
(i) Diffused reflection (ii) Regular reflection
12. Define the following terms.
(i) Mirror (ii) Incident ray (iii) Reflected ray (iv) Point of incidence
13. **True and False :**
(i) Laws of reflection are valid only for regular reflection.
(ii) A virtual image is formed when two or more rays appear to meet at a point behind the mirror.
(iii) Real images are always inverted.
14. Why you cannot see your image in newspaper ?
15. Name some objects through which irregular reflection takes place.

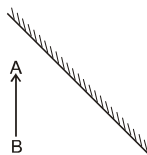
Answers Key

DPP NO. 2
TOPIC : LIGHT

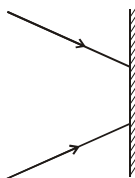
1.	A	2.	B	3.	A	4.	D	5.	C	6.	B	7.	D
8.	D	9.	B	10.	D								

DPP NO. 3
TOPIC : LIGHT

1. Plane mirror is used in :
(A) Galvanometer Scale (B) Microscope (C) Telescope (D) None of these
2. Which of the following statement is wrong for plane mirrors.
(A) They form virtual images (B) They always form inverted images
(C) Object size = Image size (D) None of these
3. Identify the wrong image formation :
(A)  (b)  (c)  (D) None of these
4. A ray of light coming along radius of curvature after reflection from concave mirror :
(A) passes through focus (B) passes through centre of curvature
(C) passes through $F/2$ (D) can go in any direction
5. When image and object are on the same side of a concave mirror then nature of image will be :
(A) real (B) virtual
(C) may be real may be virtual (D) nothing can be said
6. Which mirror cannot form a magnified image?
(A) Convex mirror (B) Plane mirror
(C) Both convex and concave mirrors (D) Both (A) and (B) are correct
7. The angle of incidence of a ray passing through centre of curvature of a spherical mirror is :
(A) 0° (B) 90° (C) 45° (D) 180°
8. The mirror used by a dental surgeon is :
(A) Plane (B) Convex (C) Concave (D) Any one of the above
9. When an object is moved from C to F of a concave mirror then its image will move from :
(A) C to F (B) C to infinity (C) F to C (D) C to $2C$
10. As per New Cartesian Sign Convention :
(A) Focal length of concave mirror is positive and that of convex mirror is negative
(B) Focal length of both, convex and concave mirror is positive
(C) Focal length of both, convex and concave mirror is negative
(D) Focal length of concave mirror is negative and that of convex mirror is positive
11. Define principal focus for a concave mirror.
12. Draw the image of object AB shown in the figure below :



13. Draw reflected rays and find the point of intersection of reflected rays.



14. Explain the cause behind lateral inversion.
15. Define real image and virtual images.

Answers Key

DPP NO. 3
TOPIC : LIGHT

1.	A	2.	B	3.	D	4.	B	5.	A	6.	D	7.	A
8.	C	9.	B	10.	D								

DPP NO. 4
TOPIC : LIGHT

1. The image is always erect in :
(A) Plane mirror (B) Concave mirror
(C) Convex mirror (D) Both (A) and (C) are correct
2. Light waves are similar in nature to :
(A) Gamma rays (B) x-rays (C) Cathode rays (D) Both (A) & (B)
3. An object of size 2.0 cm is placed perpendicular to the principal axis of a concave mirror. The distance of the object from the mirror equals the radius of curvature. The size of the image will be :
(A) 0.5 cm (B) 1.0 cm (C) 1.5 cm (D) 2.0 cm
4. An object is placed 20 cm from a convex mirror. Its image is formed 12 cm from the mirror. Find the focal length of the mirror :
(A) 25 cm (B) 30 cm (C) 15 cm (D) 60 cm
5. A dentist uses a small mirror that gives a magnification of 4 when it is held 0.60 cm from a tooth. The radius of curvature of the mirror is :
(A) 1.60 cm (convex) (B) 0.8 cm (concave)
(C) 1.60 cm (concave) (D) 0.8 cm (convex)
6. A 2.0 cm high object is placed perpendicular to the principal axis of a concave mirror. The distance of the object from the mirror is 30 cm and its image is formed 60 cm from the mirror, on the same side of the mirror as the object. Find the height of the image formed :
(A) 4 cm (B) 2 cm (C) 3 cm (D) 5 cm
7. When light travels from one medium to the other of which the refractive index is different, then the quantities which will change :
(A) Frequency, wavelength and velocity (B) Frequency and wavelength
(C) Frequency and velocity (D) Wavelength and velocity
8. Ray nature is confirmed by the phenomenon of :
(A) reflection (B) refraction (C) both A and B (D) none of these
9. Electromagnetic wave theory was proposed by :
(A) Maxwell (B) Hertz (C) Huygens (D) Newton
10. Direction of path of light changes at the interface of the two media. This phenomenon is known as :
(A) reflection (B) absorption (C) refraction (D) all of these
11. Name the mirror which can be used to obtain virtual and diminished image.
12. Draw a ray diagram for image formation in case of concave mirror when object is at ∞ and rays are not coming parallel to principal axis.
13. Name the mirror which can never form virtual and magnified image of an object.
14. **True or false :**
(i) A real image of a point object can be formed by a concave mirror.
(ii) The focal length of a spherical mirror has a smaller magnitude than that of its radius of curvature.
15. The image of an object placed 16 cm from a concave mirror is formed at a distance of 24 cm from the mirror. Calculate the possible focal lengths of the concave mirror from this information.

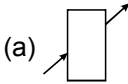
Answers Key

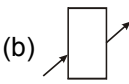
DPP NO. 4
TOPIC : LIGHT

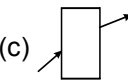
1.	D	2.	D	3.	D	4.	B	5.	B	6.	A	7.	D
8.	C	9.	A	10.	C	15.	-9.6 cm.						

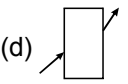
DPP NO. 5
TOPIC : LIGHT

1. Lateral shift varies inversely to :
(A) wavelength (B) refractive index (C) incident angle (D) none of these
2. The velocity of light in air and glass is 3×10^8 m/s and 2×10^8 m/s respectively. What is the R.I. of glass w.r.t. air:
(A) 1.3 (B) 1.4 (C) 1.5 (D) 6
3. Four students showed the following traces of the path of a ray light passing through a rectangular glass slab :

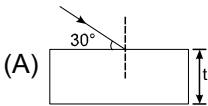
(a) 

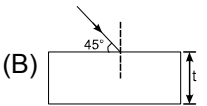
(b) 

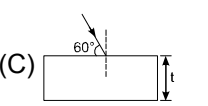
(c) 

(d) 

The trace most likely to be correct is that of student
(A) a (B) b (C) c (D) d
4. In which figure lateral displacement will be larger if a ray of light of same wavelength is incident on a plane glass slab :

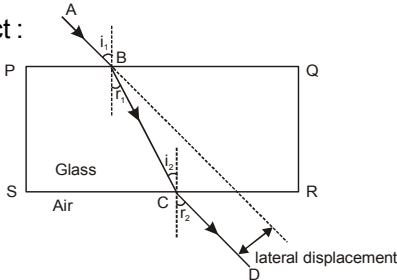
(A) 

(B) 

(C) 

(D) Same in all cases
5. The height through which an object appears to be raised in a denser medium is called :
(A) normal shift (B) lateral shift (C) red shift (D) blue shift
6. R.I. of air is :
(A) 2 (B) 1 (C) 1.13 (D) 1.5
7. The perpendicular distance between the incident and emergent rays, when light is incident obliquely on a refracting slab with parallel faces is called :
(A) normal shift (B) lateral shift (C) red shift (D) blue shift
8. For the figure given below which of the following statements is correct :

(A) $\angle i_1 = \angle r_2$
(B) $\angle i_1 \neq \angle r_2$
(C) Incident and emergent rays are parallel
(D) Both A and C are correct


9. According to the principle of reversibility of light.
(A) ${}_1\mu_2 = {}_2\mu_1$ (B) ${}_1\mu_2 = \frac{1}{{}_2\mu_1}$ (C) both A & B (D) none of these
10. Scattering is also a type of :
(A) Regular reflection (B) Refraction (C) Diffused reflection (D) Interference
11. What do you mean by lateral displacement ?
12. State the principle of reversibility of light.
13. Find the refractive index of a material if angle of incidence of ray of light is 45° and angle of refraction in the material is 30° .
14. With respect to air the refractive indices of water and benzene are 1.33 and 1.50 respectively. Calculate the refractive index of benzene with respect to water.
15. What is the major difference between a concave and a convex lens?

Answers Key

DPP NO. 5
TOPIC : LIGHT

1.	A	2.	C	3.	B	4.	A	5.	A	6.	B	7.	B
8.	D	9.	B	10.	C	13.	$\sqrt{2}$	14.	1.12				

DPP NO. 6
TOPIC : LIGHT

1. A ray of light passing through optical centre suffers :
(A) reflection (B) refraction
(C) total internal reflection (D) none of these
2. A lens is thin in the middle and thick at the edges. The lens is :
(A) concave (B) convex (C) plane (D) prism
3. A lens converges light rays. The lens is :
(A) plane (B) prism (C) concave (D) convex
4. Aperture is the diameter of :
(A) Entire lens
(B) Only that part of lens through which refraction is taking place
(C) Case of lens
(D) None of these
5. Which of the following terms is not related to spherical mirrors :
(A) Principal axis (B) Optical centre (C) Aperture (D) None of these
6. The sign of power of convex lens is :
(A) positive (B) negative (C) zero (D) infinite
7. If the magnification of a lens has negative value, the image is :
(A) virtual and erect (B) real and inverted (C) A or B any (D) neither A nor B
8. The _____ colour is at the top and _____ colour is at the bottom of the spectrum.
(A) red, violet (B) red, blue (C) violet, red (D) none of these
9. A lens of power 6 D is put in contact with a lens of power -4 D. The combination will behave like a :
(A) divergent lens of focal length 25 cm (B) convergent lens of focal length 50 cm
(C) divergent lens of focal length 20 cm (D) convergent lens of focal length 100 cm
10. If an object of size 5 cm is placed 20 cm from a lens and its image of same size is formed 20 cm from lens on other side, lens is :
(A) convex (B) concave (C) glass slab (D) prism
11. Is it necessary that a dense (thick) material will also be optically dense?
12. Draw shapes of different types of concave lens.
13. Is it necessary that optical centre always lie on principal axis ?
14. What do you mean by aperture of a spherical lens ?
15. With the help of a neat diagram explain different terms related to spherical lenses.

Answers Key

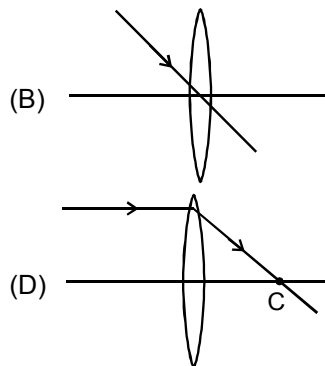
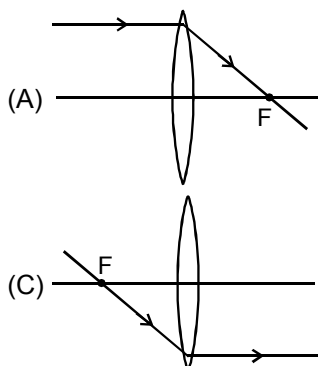
DPP NO. 6
TOPIC : LIGHT

1.	B	2.	A	3.	D	4.	B	5.	B	6.	A	7.	B
8.	A	9.	B	10.	A								

DPP NO. 7
TOPIC : LIGHT

1. A virtual image is smaller than the object can be formed by :
(A) convex lens (B) concave lens (C) concave mirror (D) plane mirror
2. We put glass piece on a printed page, image of prints on the page has same size when viewed from glass piece. The piece is :
(A) convex lens (B) glass slab (C) concave lens (D) prism
3. In above question if the print image is enlarged then the piece is a :
(A) glass slab (B) convex lens (C) concave lens (D) prism
4. If parallel rays are incident on a convex lens, after refraction these rays will meet at :
(A) focus (B) centre of curvature (C) focal plane (D) none of these
5. If image formed by a lens is always diminished and between F and O then the lens is :
(A) concave (B) convex (C) both A and B (D) none of these

6. Identify the wrong figure :



7. If optical density of a medium is high then the speed of light in that medium is :
(A) high (B) low (C) unchanged (D) none of these
8. In convex lens, if the object is at infinity then position of image is at :
(A) Infinity (B) Between F and 2F (C) At the Focus (D) None of these
9. A light is said to be convergent when :
(A) All the rays spread around from a point source of light
(B) It travels in an irregular pattern
(C) All the rays travel parallel to each other
(D) all the rays converge together to a single point
10. When the ray of light falls obliquely on the interface of two media and goes to the another medium. It is called:
(A) Reflection of light (B) Refraction of light (C) Dispersion of light (D) Both (A) and (B)
11. What is meant by a reading lens ? How is image formed by it ?
12. What are the main characteristics of a virtual image formed by a convex lens ?
13. Draw a table stating the position, size and nature for different positions of an object placed in front of a convex lens.
14. Explain with the help of a diagram, why a concave lens is called as diverging lens.
15. We wish to obtain a real, inverted image of the same size as that of the object by a thin convex lens of focal length 20 cm. Where should the object be placed ? Draw a ray diagram for the formation of the image in this case.

Answers Key

DPP NO. 7
TOPIC : LIGHT

1.	B	2.	B	3.	B	4.	C	5.	A	6.	D	7.	B
8.	C	9.	D	10.	B	15.	40 cm.						

DPP NO. 8
TOPIC : LIGHT

1. Convex lens is used in case of :
(A) myopia (B) hypermetropia (C) presbyopia (D) astigmatism
2. Short sightedness is also called as :
(A) myopia (B) hypermetropia (C) presbyopia (D) astigmatism
3. Cylindrical lens is used in case of :
(A) myopia (B) hypermetropia (C) presbyopia (D) astigmatism
4. Even in absolutely clear water, a diver cannot see very clearly :
(A) Because rays of light get diffused
(B) Because velocity of light is reduced in water
(C) Because a ray of light passing through the water makes it turbid
(D) Because the focal length of the eye lens in water gets changed and the image is no longer focused sharply on the retina
5. The persistence of vision of the eye is :
(A) $\frac{1}{16}$ second (B) $\frac{1}{5}$ second (C) $\frac{1}{26}$ second (D) $\frac{1}{100}$ second
6. In eye, the focusing is done by :
(A) to and fro movement of the eye lens (B) to and fro movement of retina
(C) change in the convexity of the lens (D) change in refractive index of the eye fluid
7. While looking at nearby objects, the muscle _____ so as to _____ the focal length of eye lens.
(A) Contracts, increase (B) Relax, increase (C) Contracts, decrease (D) Relax, decrease
8. Which of the following factors is responsible for the refraction :
(A) Optical density (B) Frequency of light
(C) Angle of incidence (D) Mass density
9. Refractive index of a medium does not depends on :
(A) Nature of the medium (B) Wavelength of the light used
(C) Temperature (D) Angle of incidence
10. A far sighted person cannot focus distinctly objects closer than 120 cm. The lens that will permit him to read from a distance of 40 cm will have a focal length :
(A) + 30 cm (B) – 30 cm (C) + 60 cm (D) – 60 cm
11. A person with a myopic eye cannot see objects beyond 1.2 m distinctly. What should be the nature of the corrective lens used to restore proper vision ?
12. The near point of a hypermetropic person is 50 cm. What will be the focal length of a convex lens used in his spectacles ?
13. The far point of a myopic person is 150 cm in front of the eye. Calculate the focal length and the power of a lens required to enable him to see distant objects clearly.
14. What is power of accommodation of eye?
15. A man cannot see objects closer than 1 metre from the eye clearly. What is the power of the corrective lens he should use ?

Answers Key

DPP NO. 8
TOPIC : LIGHT

1.	B	2.	A	3.	D	4.	D	5.	A	6.	C	7.	C
8.	A	9.	C	10.	C	12.	50 cm.	13.	0.67 D				

DPP NO. 9
TOPIC : ELECTRICITY

1. A body gets positively charged by losing :
(A) Neutrons (B) Electrons (C) Protons (D) α -particles
2. A sure test of electrification is :
(A) Attraction (B) Repulsion (C) Friction (D) Induction
3. What is not true for electric charge :
(A) Electric charge is scalar quantity
(B) Charge on a body may be + ve or – ve
(C) S.I. unit of charge is coulomb
(D) One coulomb is charge of one electron
4. All the following statements are correct except :
(A) A body is said to be negatively charged when it has got excess of electrons.
(B) When a body is charged positively, some electrons escape from it.
(C) The presence of moisture in the air reduces its conductivity
(D) None of the above
5. A neutral body has equal amount of :
(A) Both positive and negative charges (B) Only positive charge
(C) Only negative charge (D) No charge at all
6. Law which gives force between two charges is :
(A) Ohm's law (B) Faraday's Law (C) Coulomb's law (D) None of these
7. A charge Q_1 exerts some force on a second charge Q_2 . If a 3rd charge Q_3 is brought near then the force of Q_1 exerted on Q_2 .
(A) Will increase
(B) Will decrease
(C) Will remain unchanged
(D) Will increase if Q_3 is of the same sign as Q_1 and will decrease if Q_3 is of opposite sign.
8. 5 C/S is same as :
(A) 5 A (B) 5 mA (C) 5 joule (D) 5 volt
9. Electric current is :
(A) flow of charge per unit time (B) work done per unit time
(C) Resistance per unit time (D) All of these
10. The space around a charge in which some other charge experiences attraction or repulsion, is called its:
(A) Potential (B) Electric field
(C) Electric field intensity (D) Potential difference
11. Give properties of an electric charge.
12. Explain charging by friction.
13. Can charge be created ?
14. Define one Volt.
15. What is unit of electric work in relation to quantity of charge and potential difference ?

Answers Key

DPP NO. 9

TOPIC : ELECTRICITY

1.	B	2.	B	3.	D	4.	C	5.	A	6.	C	7.	C
8.	A	9.	A	10.	B								

DPP NO. 10**TOPIC : ELECTRICITY**

1. Work done in moving a unit positive test charge from one point to another inside an electric field, is called:
(A) Potential (B) Field
(C) Field intensity (D) Potential difference
2. Electricity constituted by moving electric charges, is called :
(A) positive electricity (B) negative electricity
(C) current electricity (D) static electricity
3. The condition for an electric charge to flow from one point to other is that the two points must have electric:
(A) Circuit (closed) (B) Current
(C) Potential difference (D) (A) & (C) both are correct
4. Unit of potential difference is :
(A) Joule/Coulomb (B) Volt (C) Coulomb (D) (A) and (B) are correct
5. Substances whose atoms have more free electrons are called :
(A) Conductors (B) Insulators (C) Electrolytes (D) Semi-conductors
6. Symbol of galvanometer is :
(A) $\textcircled{G}$ (B) $\textcircled{\uparrow}$ (C) Both (A) and (B) (D) Neither (A) nor (B)
7. Which of the following is symbol of a cell :
(A) $-|+$ (B) $\frac{+}{-}$
(C) Both (A) and (B) (D) None of these
8. Which of the following is symbol of battery :
(A) $-|+$ (B) $-|||+$ (C) $\frac{+}{-}$ (D) None of these
9. Electron volt is a measure of :
(A) charge (B) current (C) electric potential (D) energy
10. Read the following statements :
Y : The resistivity of a semiconductor decreases with rise in temperature.
Z : In a conducting solid, the rate of collisions between free electrons and ions increases with rise in temperature.
(A) Y is true but Z is false
(B) Y is false but Z is true
(C) Both Y and Z are true
(D) Y is true but Z is the correct reason for Y.
11. The work done in moving a charge of 3C between two points is 6J. What is the potential difference between the two points ?
12. An object is charged positively. What will be the effect on its mass ?
13. At what temperature mercury becomes super conductor ?
14. Why does a conducting wire offers resistance to the flow of electron?
15. Define ohmic and non - ohmic conductor.

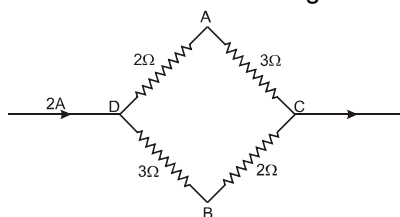
Answers Key

DPP NO. 10
TOPIC : ELECTRICITY

1.	D	2.	C	3.	D	4.	D	5.	A	6.	C	7.	C
8.	B	9.	D	10.	C	11.	2 V						

DPP NO. 11
TOPIC : ELECTRICITY

1. Two 1000 W heaters when connected in parallel across 220 V supply produced heat Q_p in time t . If they are connected in series across the same power supply the heat produced in the same time is Q_s . What is $\frac{Q_p}{Q_s}$?
(A) 4 (B) 2 (C) 0.5 (D) 0.25
2. The slope of voltage (V) versus current (I) curve is called :
(A) Resistance (B) Conductance (C) Resistivity (D) Conductivity
3. In parallel combination, the effective resistance of the circuit :
(A) Decreases (B) Increases
(C) May decrease or increase (D) No particular observation
4. A current of 2 A flows in system of conductors shown in figure. The potential difference $V_A - V_B$ will be :



- (A) +1V (B) -1V (C) +2V (D) -2V
5. Find equivalent resistance of the combination shown below :

(A) 2R (B) $\frac{R}{2}$ (C) Zero (D) Infinite
 6. Commercial unit of electrical energy is :
(A) Calorie (B) Joule (C) Kilowatt hour (D) All of these
 7. A 2 KW boiler used for 1 hour everyday consumes the following electrical energy in thirty days :
(A) 60 units (B) 120 units (C) 15 units (D) None of these
 8. Two heater wires of same length and material but of different thickness are connected in series across a power supply. The power dissipated :
(A) Will be same in both (B) Will be more in thinner wire
(C) Will be more in thicker wire (D) Cannot be predicted
 9. Watt hour is also called :
(A) volt-ampere hour (VAH) (B) Board of trade unit (C) Horse power (D) None of these
 10. Which is correct for electric power :
(A) $P = \frac{V}{I}$ (B) $P = I^2 R$ (C) $P = \frac{I^2}{R}$ (D) $P = V^2 R$
 11. In an electric circuit, it is found that, all its elements carry same current but have different potential difference. Is it a series or parallel circuit ?
 12. To get same potential difference across 3 resistances, connected to some cell, how will you combine them ?
 13. Draw a schematic diagram of a circuit consisting of a battery, 5Ω , 8Ω , 12Ω resistances and a plug key, all connected in series.
 14. Draw atleast five possible combinations with three resistances of value R_1 , R_2 and R_3 .
 15. 14 C charge flows between two points which have a potential difference of 15V, find the equivalent energy.

Answers Key

DPP NO. 11
TOPIC : ELECTRICITY

1.	A	2.	A	3.	A	4.	A	5.	C	6.	C	7.	A
8.	B	9.	A	10.	B	15.	210 J						

DPP NO. 12**TOPIC : MAGNETIC EFFECT OF CURRENT & EMI**

1. When a bar magnet is broken into two pieces :
(A) we will have single pole on each piece (B) each piece will have two like poles
(C) each piece will have two unlike poles (D) each piece will lose magnetism
2. Which one of the following is a non magnetic substance :
(A) Iron (B) Nickel (C) Cobalt (D) Silver
3. The mineral which can attract the pieces of iron towards it is :
(A) Fe_2O_3 (B) Fe_3O_4 (C) FeO (D) None of these
4. Needle of a magnetic compass always points in :
(A) East direction (B) North west direction
(C) North–South direction (D) Neither A nor B
5. Which of the following can lead to demagnetisation of a magnet :
(A) Hammering (B) Strong heating (C) Aging (D) All are correct
6. Attracting power of a horse shoe magnet can be increased by :
(A) Increasing its length (B) Decreasing the gap between its poles
(C) Keeping it at a cold place (D) None of these
7. Identify the odd one :
(A) Gold (B) Nickel (C) Iron (D) Cobalt
8. The south pole of a freely suspended magnet points to the :
(A) Geographical south (B) Geographical north
(C) Slightly left of geographical north (D) None of these
9. A magnetic compass is placed at a point near a bar magnet. Direction of magnetic field at that point will be:
(A) Tangential to compass needle (B) Normal to compass needle
(C) Towards the south pole of compass needle (D) None of these
10. Magnetic field is :
(A) Scalar (B) Vector
(C) Some times scalar sometimes vector (D) Nothing can be said
11. Give some examples of magnetic & non magnetic substances ?
12. What is directive property of a magnet ?
13. Repulsion is the surest test of magnetisation, comment.
14. What do you mean by magnetic field ?
15. Does a stationary charge produce magnetic field ?

Answers Key

DPP NO. 12

TOPIC : MAGNETIC EFFECT OF CURRENT & EMI

1.	C	2.	D	3.	B	4.	C	5.	D	6.	B	7.	A
8.	C	9.	A	10.	B								

DPP NO. 13**TOPIC : MAGNETIC EFFECT OF CURRENT & EMI**

1. Metal which can be used for construction of base of magnetic compass is :
(A) Iron (B) Nickel (C) Aluminium (D) Cobalt
2. Magnetic field lines of earth travels from to.....inside the earth :
(A) South pole, north pole (B) North pole, south pole
(C) North pole, infinity (D) Infinity, south pole
3. If a magnet is suspended freely at north pole then :
(A) It will become horizontal (B) It will start rotating
(C) It will become vertical (D) It will oscillate
4. If current flows from north to south in a conductor placed over magnetic compass then north pole of magnetic compass with point towards :
(A) South (B) North (C) East (D) West
5. Important property of soft iron which make it suitable for making the core of an electromagnet is :
(A) Strength
(B) It behaves as a magnet in presence of external magnetic field only
(C) Its melting point is high
(D) None of these
6. The magnetic field inside a solenoid is :
(A) Zero (B) Decreases along the axis
(C) Increases along the axis (D) Uniform
7. The polarity of an electromagnet depends on the :
(A) Number of the turns in a coil (B) Direction of flow of current
(C) Nature of material (D) All are correct
8. By increasing the number of turns in the coil, the strength of the magnetic field:
(A) decreases (B) increases
(C) first increases then decreases (D) remains unchanged
9. The emf produced in a wire by its motion across a magnetic field does not depend upon :
(A) The length of the wire (B) The composition of the wire
(C) The speed of the wire (D) The orientation of the wire
10. Direction of force acting on a current carrying conductor kept in a magnetic field is given by :
(A) Fleming's right hand rule (B) Fleming's left hand rule
(C) Lenz's rule (D) Faraday's rule
11. Draw the pattern of field lines due to a bar magnet.
12. What is SNOW rule ?
13. A straight conductor passes vertically downwards through a cardboard held in horizontal plane such that current moves in upward direction :
(i) Plot four magnetic lines of force.
(ii) Show clearly the direction of magnetic lines of force.
(iii) Also plot lines of force when direction of current is reversed.
14. What do you understand by the term 'induced current' ?
15. What is electromagnetic induction ? Who discovered it ?

Answers Key

DPP NO. 13

TOPIC : MAGNETIC EFFECT OF CURRENT & EMI

1.	C	2.	B	3.	C	4.	C	5.	B	6.	D	7.	B
8.	B	9.	D	10.	B								

DPP NO. 15**TOPIC : MAGNETIC EFFECT OF CURRENT & EMI**

1. The most common device for providing an emf is :
(A) Electric cell (B) Generator
(C) Fuel cell (D) All of these
2. Unit of a.c. is :
(A) ev (B) Ampere (C) Farad (D) Fleming
3. The various distribution circuits are connected in :
(A) Series (B) Parallel
(C) Series or parallel (D) Nothing can be said
4. We will receive an electric shock if we touch :
(A) Live wire (B) Neutral wire
(C) Earth wire (D) Any of the above
5. The touching of the live wire and neutral wire directly is known as :
(A) Power rating (B) Short circuit (C) Over loading (D) None of these
6. Electricians use rubber gloves while working because :
(A) Rubber is an insulator (B) Rubber is a good conductor
(C) It is easy to work while wearing gloves (D) None of these
7. Why copper wire cannot be used as a fuse wire :
(A) Copper wire will get warm
(B) Copper wire has melting point quite high and it will not melt easily
(C) Copper wire melts easily due to overloading
(D) None of these
8. Which of the following effects of current does not depend on direction of current :
(A) Lighting and chemical effect (B) Heating and lighting effect
(C) Heating and magnetic effect (D) Magnetic and chemical effect
9. Electric power is transmitted over long distance through conducting wires at very high voltage because :
(A) The power losses are reduced to minimum
(B) Signal of high voltage travel faster
(C) High voltage can be stepped down to desired levels easily
(D) None of these
10. Birds do not feel electric shock while sitting on a current carrying uninsulated wires because :
(A) The current does not pass through the body as the claws of birds are non-conducting
(B) The resistance offered by the body of birds is very high
(C) The feathers of birds act as an insulator and hence current does not pass through them
(D) The potential difference between the two claws of birds is very small
11. Define alternating current and direct current ?
12. What is the disadvantage of dc ?
13. In which wire is the ON/OFF switch connected ?
14. On which effect of electricity does a fuse work ?
15. Name the material used for making fuses.

Answers Key

DPP NO. 15

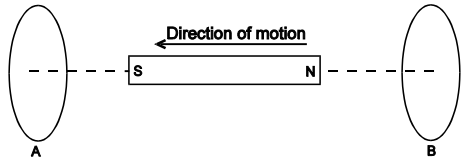
TOPIC : MAGNETIC EFFECT OF CURRENT & EMI

1.	A	2.	B	3.	B	4.	A	5.	B	6.	A	7.	B
8.	B	9.	A	10.	D								

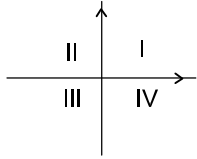
- Solenoid A : 20 turns ; 50 cm length
Solenoid B : 50 turns ; 50 cm length
Strong magnetic field will be produced by :

(A) Solenoid A (B) Solenoid B
(C) Nothing can be said (D) Both will produce magnetic field of same strength
- A bar magnet is moved between two coaxial coils A and B, as shown in figure. The end planes of two coils facing the magnet due to induction will behave :

(A) North pole in both the coils A and B
(B) South pole in both the coils A and B
(C) North pole in coil A and South pole in coil B
(D) South pole in coil A and North pole in coil B


- Choose correct directions of magnetic fields in I, II, III, and IV quadrants.

(A) I, II, inwards III and IV - can't say
(B) I, III inwards, IV outwards, II - can't say
(C) IV inwards, II outwards, III and I - cant say
(D) None of these

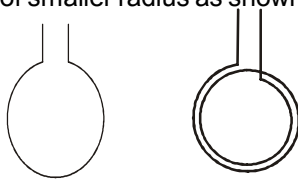

- The electric device which works on the phenomenon of force on a current carrying conductor in a magnetic field is :

(A) Generator (B) Accelerator (C) Transformer (D) Motor
- Fleming's right hand rule gives :

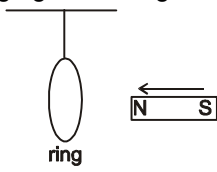
(A) The magnitude of induced emf (B) The magnitude of the magnetic field
(C) The direction of induced emf (D) Both magnitude and direction of the induced emf
- The unit of induced emf is :

(A) Ampere (B) Volt (C) Joule (D) Electron volt
- A certain length of wire carries a steady current. It is bent to form a circular coil of one turn. The same length is now bent more sharply to give a double loop of smaller radius as shown in figure. The magnetic field at the centre caused by the same current is :

(A) a quarter of its first value
(B) unaltered
(C) four times its first value
(D) one half its first value


- A copper wire ring is suspended vertically, on bringing a bar magnet towards ring, the ring will

(A) move towards magnet
(B) move away from magnet
(C) remains stationary
(D) rotate with respect to suspension fibre


- When we slide a bar magnet into a coil, the strength of induced current depends on -

(A) the number of turns in the coil (B) the speed with which the magnet moves
(C) strength of that bar magnet (D) all the above
- The difference in number of magnetic lines entering and leaving a bar magnet is always :

(A) zero (B) > 1 (C) ∞ (D) < 1
- State the use of electromagnets in hospitals.
- What are the factors on which magnetic field due to a solenoid depends ?
- State qualitatively the effect of inserting an iron core into a current carrying solenoid.
- A coil of copper wire is connected to a galvanometer. What would happen if a bar magnet is :

(a) pushed into the coil with its north pole entering first ?
(b) held at rest inside the coil ?
(c) pulled out again ?
- Explain what is short circuiting and over loading in an electric supply?

Answers Key

DPP NO. 14

TOPIC : MAGNETIC EFFECT OF CURRENT & EMI

1.	B	2.	B	3.	C	4.	D	5.	C	6.	B	7.	C
8.	B	9.	D	10.	A								

DPP NO. 16**TOPIC : SOURCE OF ENERGY**

1. Heat liberated per gram of a fuel is called :
(A) Calorific value (B) Mass value
(C) Heating value (D) both (A) and (C)
2. SI unit of calorific value is :
(A) J (B) J/kg (C) kg (D) none of these
3. Which of the following has least calorific value :
(A) alcohol (B) biogas (C) wood (D) coal
4. Which of the following fuel is different from others ?
(A) Water gas (B) Coal gas
(C) Producer gas (D) Coke
5. Most of the fuels are :
(A) Carbon compounds with sulphur (B) Nitrogen compounds with carbon
(C) Carbon compounds with hydrogen (D) None of these
6. Gobar gas is a
(A) solid fuel (B) liquid fuel (C) gas fuel (D) none of these
7. Which of the following is not a solid fuel :
(A) coke (B) coal (C) charcoal (D) kerosene
8. The wind energy map gives information about the :
(A) Cause of wind (B) Intensity of earth quake
(C) Amount of rainfall (D) None of these
9. Energy possessed by flowing water is :
(A) Kinetic energy (B) Potential energy
(C) Heat energy (D) None of these
10. The device used for generating electricity from wind energy is called :
(A) Wind turbine (B) Wind motor
(C) Wind generator (D) Wind mill
11. What is the major difference between renewable SOE and non renewable SOE ?
12. Give any three characteristics of fuel.
13. Sources producing inexhaustible energy are called sources.
14. Sources producing exhaustible energy are called sources.
15. Explain why coal and petroleum are classified as non renewable SOE.

Answers Key

DPP NO. 16

TOPIC : SOURCE OF ENERGY

1.	D	2.	B	3.	C	4.	D	5.	C	6.	C	7.	D
8.	A	9.	A	10.	C								

DPP NO. 17**TOPIC : SOURCE OF ENERGY**

1. The chief constituent of biogas is :
(A) carbon dioxide (B) ethane (C) methane (D) hydrogen
2. Biogas is produced from biomass by :
(A) anaerobic fermentation (B) fractional distillation
(C) destructive distillation (D) dry distillation
3. Ultimate source of heat on the surface of earth is :
(A) solar energy (B) oceanic energy
(C) wind energy (D) inner temperature of earth crust
4. Limitations of solar energy are :
(A) it is not available during night (B) it is not available uniformly throughout the year
(C) it is not available all the time (D) all of them
5. Indirectly solar energy is harnessed as :
(A) wind energy (B) geothermal energy
(C) hydro energy (D) Both A and C are correct
6. The device which harness solar energy directly is :
(A) coal gas plant (B) natural gas plant
(C) biogas plant (D) solar cell
7. The most common material for making solar cells is :
(A) silicon (B) germanium (C) selenium (D) none of these
8. Which energy is used in solar cells :
(A) electrical (B) chemical (C) solar (D) none
9. Which of the following is not a form of oceanic energy :
(A) Ocean wave energy (B) Tidal energy
(C) Ocean thermal energy (D) Solar energy
10. The energy available due to the difference in the temperature of water at the surface of the ocean and at deeper levels is called :
(A) tidal energy (B) wind energy (C) solar energy (D) none of these
11. Name a part of India where wind energy is commercially harnessed.
12. State two merits of hydroelectricity.
13. Give two examples of solid, liquid and gaseous fuel.
14. Name the best type of fuel out of solid, liquid and gas.
15. A setup having a large number of windmills is called

Answers key

DPP NO. 17

TOPIC : SOURCE OF ENERGY

1.	C	2.	A	3.	A	4.	D	5.	D	6.	D	7.	A
8.	C	9.	D	10.	D								

DPP NO. 18
TOPIC : SOURCE OF ENERGY

1. In a neutral atom n_e and n_p represent number of electrons & protons, then :
(A) $n_e < n_p$ (B) $n_e = n_p$ (C) $n_e > n_p$ (D) None of these
2. The mass of an α particle is :
(A) Less than sum of the masses of 2 protons & 2 neutrons
(B) Equal to mass of four protons
(C) Equal to mass of four neutrons
(D) Equal to sum of masses of two protons and two neutrons
3. Number of nucleons in the nucleus, is called :
(A) Mass number (B) Atomic number
(C) Neutron number (D) Electron number
4. Central core of the atom, is called :
(A) Ion (B) Orbit (C) Molecule (D) Nucleus
5. In nuclear reactions :
(A) Energy is conserved (B) Charge is conserved
(C) Momentum is conserved (D) All are correct
6. Neutron was discovered by :
(A) Rutherford (B) Anderson
(C) Chadwick (D) Millikan
7. A nucleus has 16 neutrons & its mass number is 31. The atomic number of this is :
(A) 47 (B) 31 (C) 15 (D) 16
8. The approximate temperature of the surface of the sun is
(A) 6000°C (B) $10,000^\circ\text{C}$
(C) 3000°C (D) $30,000^\circ\text{C}$
9. One MeV of energy is equivalent to
(A) $1.6 \times 10^{13}\text{J}$ (B) $1.6 \times 10^{19}\text{J}$
(C) $1.6 \times 10^{-13}\text{J}$ (D) $1.6 \times 10^{-19}\text{J}$
10. Which of the following is a better nuclear fuel ?
(A) Thorium 236 (B) Uranium 235
(C) Neptunium 239 (D) Plutonium 239
11. What is geothermal energy ?
12. What is ocean thermal energy ?
13. Define nuclear energy.
14. Name the particles contained in the nucleus of an atom.
15. Name the particle having same mass as that of electrons, but positively charged.

Answers key

DPP NO. 18

TOPIC : SOURCE OF ENERGY

1.	B	2.	A	3.	A	4.	D	5.	D	6.	C	7.	C
8.	A	9.	C	10.	B								

DPP NO. 19
TOPIC : SOURCE OF ENERGY

1. Choose the source of energy which is different from others :
(A) Tidal (B) Sea-wave (C) OTE (D) Wind energy
2. The oceans cover almost _____ percent of the surface of earth with water and act as a vast collector of _____ energy :
(A) 71, chemical (B) 97, solar (C) 71, hydro (D) 17, hydro
3. Fission is splitting of the nucleus into two nuclei. The fission products have :
(A) the same atomic number (B) the same atomic mass
(C) lower atomic number (D) higher atomic mass
4. The mass number of four different elements a, b, c and d are 2, 35, 125 & 235 respectively. Which of them would provide the most suitable nuclear fission reaction :
(A) c & d (B) a & d (C) a & b (D) Only d
5. Neutrons are more effective for producing nuclear reaction with nuclei compared to proton because :
(A) neutrons have greater P.E.
(B) neutrons emit β -particle
(C) neutrons do not experience electrostatic repulsion of nuclear charge or electron cloud
(D) neutrons are bit lighter than protons
6. The process by which non fissionable U-238 is converted into fissionable Pu-239 is called :
(A) fission (B) fusion (C) enrichment (D) chain reaction
7. The most abundant isotope of natural uranium is :
(A) ${}_{92}\text{U}^{238}$ (B) ${}_{92}\text{U}^{235}$ (C) ${}_{92}\text{U}^{234}$ (D) none of these
8. Thermal neutrons are :
(A) extremely slow neutrons (B) slow neutrons
(C) fast neutrons (D) extremely fast neutrons
9. In the nuclear reaction
$${}_{92}\text{U}^{235} + {}_0\text{n}^1 \longrightarrow {}_{56}\text{Ba}^{141} + {}_{36}\text{Kr}^{92} + 3\text{X} + 200 \text{ MeV}$$
X represents :
(A) proton (B) neutron (C) electron (D) alpha particle
10. Nuclear energy is :
(A) Renewable (B) Non-renewable
(C) Both renewable & non-renewable (D) None of these
11. Find the missing particle in following reaction :
$${}_{92}\text{U}^{235} + {}_0\text{n}^1 \longrightarrow {}_{56}\text{Ba}^{141} + ? + 3{}_0\text{n}^1 + \text{Energy}$$
12. Is there a product of nuclear fission which is utilized to produce further fission of U^{235} ? Give details.
13. What is the source of energy released in nuclear fission ?
14. Name the model which is used to explain the process of nuclear fission.
15. Name the particle which initiates chain reaction of U-235.

Answers Key

DPP NO. 19

TOPIC : SOURCE OF ENERGY

1.	D	2.	C	3.	C	4.	D	5.	C	6.	C	7.	A
8.	D	9.	B	10.	C								
