પુ•ના International School

Shree Swaminarayan Gurukul, Zundal

SUMMATIVE ASSIGNMENT -2 2021-22	
Grade – 8	**Subject- SCIENCE**
Syllabus – CH- 12, 13, 14, 16, 17	

❖ **Multiple choice questio s –**

1. Sound can travel through
   a) Gases only
   b) Solid only
   c) Liquid only
   d) Solids, liquids and gases

Ans - d) Solids, liquids and gases

2. Voice of which of the following is likely to have minimum frequency?
   a) Baby girl
   b) Baby boy
   c) A man
   d) A woman

Ans - a) Baby girl.

3. Distilled water is
   a) Poor conductor
   b) Good conductor
   c) Both a and b
   d) None

Ans - a) Poor conductor

4. An electric lamp glows due to

   a) Chemical effect
   b) Magnetic effect
   c) Heating effect
   d) None

Ans – c) Heating effect

5. Poor conductors are

   a. Plastics
   b. Clothes
   c. Wood
   d. All of these

Ans – d. All of these

6. Noise pollution is harmful for

   a. Human
   b. Cat
   c. Bird
   d. All

Ans – d. All

7. Voice box or larynx of human process

a. Sound
b. Wind
c. Loudness
d. None

Ans – a. Sound

8. Sound is kind of

a. Work
b. Energy
c. Force
d. None

Ans – b. Energy

9. Friction is a _____

a. Contact force
b. Non-contact force
c. Magnetic force
d. None of these

Ans – a. Contact Force

10. Friction is a /an_____

a. Friend
b. Foe
c. Both (a) and (b)
d. None

Ans – c. Both (a) and (b)

11. Rolling friction is smaller than?

a. Sliding friction
b. Static friction
c. Fluid friction
d. All of the above

Ans – d. All of the above

12. The shape of the airplane is like a

a. Bird
b. Car
c. Dog
d. All

Ans – a. Bird

13. Lubricants _____

a. Increase friction
b. Reduce friction
c. Both (a) and (b)
d. None

Ans – b. Reduce Friction

14. Copper wire is a

a. Good conductor
b. Poor conductor
c. Both a and b
d. None of this

Ans – a. Good Conductor

15. The voice box is called:

a. Stomach
b. Heart
c. Larynx
d. Mouth

Ans – c. Larynx

16. Eardrum is a part of

a. Sound producing organ
b. Skeletal system
c. Hearing organ
d. Reproductive organ

Ans – c. Hearing Organ

17. The pitch of sound depends on

a. frequency
b. amplitude
c. both of these
d. none of these

Ans - a. Frequency

18. Part of the eye which controls the light entering is called

(a) iris
(b) cornea
(c) lens
(d) retina

Ans – a. iris

19. **.** Which of the following is not a member of the solar system ?

(a) An asteroid
(b) A satellite
(c) A constellation
(d) A comet

Ans: (c) A constellation

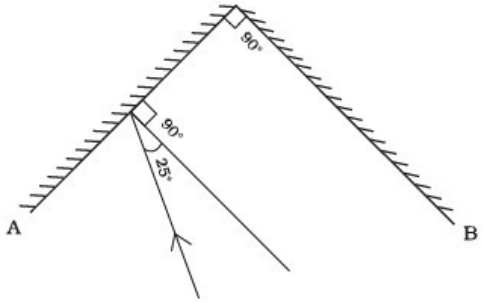
20. Which of the following is not a planet of the sun ?

(a) Sirius
(b) Mercury
(c) Saturn

(d) Earth
Ans: (a) Sirius

21. Phases of moon occur because :
(a) We can see only that part of the moon which reflects light towards us.
(b) Our distance from the moon keeps changing.
(c) The shadow of the Earth covers only a part of the moon's surface.
(d) The thickness of the moon's atmosphere is not constant.
Ans: (a) We can see only that part of the moon which reflects light towards us.

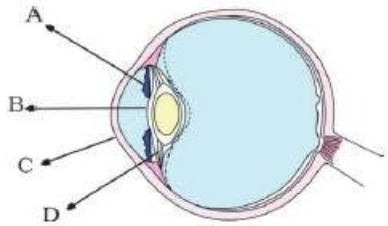
22. Two mirrors A and B are placed at right angles to each other as shown in the given figure.



A ray of light incident on mirror A at an angle of 25^0 falls on mirror B after reflection. The angle of reflection for the ray reflected from mirror B would be

(a) 25^0
(b) 50^0
(c) 65^0
(d) 115^0
Ans - (c) 65^0

23. In the figure of the human eye , the cornea is represented by the letter



(a) A
(b) B
(c) C
(d) D
Ans - (c) C

24. Which is the brightest planet in the universe?
a. Mercury
b. Venus
c. Earth
d. Saturn
Ans – b. Venus

25. Which is the nearest planet to the sun?
a. Neptune
b. Mars
c. Mercury
d. Earth
Ans – c. Mercury

26. On which planet the life exists?
a. Earth
b. Moon
c. Jupiter
d. None
Ans – a. Earth

27. Which planet appears to be yellowish?
a. Asteroids
b. Mars
c. Uranus
d. Saturn
Ans – d. Saturn

28. Which is the farthest planet of solar system?
a. Neptune
b. Jupiter
c. Mercury
d. Earth
Ans – a. Neptune

29. The first outside orbit of the earth planet is
a. Jupiter
b. Mars
c. Saturn
d. Uranus
Ans – b. Mars

30. Which is the largest planet in solar system?
a. Mercury
b. Mars
c. Jupiter
d. Saturn
Ans – c. Jupiter

31. What is the gap between the orbit of mars and Jupiter called?
a. Asteroids
b. Comets
c. Meteor
d. Meteorite
Ans – a. Asteroids

32. Stars appear to move from
a. West to east
b. East to west
c. North to south
d. South to west
Ans – b. East to west

33. The tilting of the earth is responsible for
a. Change of days
b. Change of the sun's rays
c. Change of the season

d. None

Ans – c. Change of the season

34. Fluid are_____

a. Gases
b. Liquids
c. Gases and liquids both
d. None of these

Ans – c. Gases and Liquids both

35. To make a Kaleidoscope we require

a. Three plane mirrors
b. Four plane mirrors
c. Three glass sheets
d. Four glass sheets

Ans – a. Three plane mirrors

36. Which of the following is not a luminous object ?

a. Sun
b. Candle
c. Moon
d. Tubelight

Ans – c. Moon

❖ **Fill in the blanks.**

1. The planet which is farthest from the Sun is **Neptune**.
2. The planet which appears reddish in colour is **Mars**.
3. A group of stars, which appear to form a pattern in the sky is known a **constellation**.
4. A celestial body that revolves around a planet is known as **satellite**.
5. Shooting stars are actually not **stars**.
6. Asteroids are found between the orbits of **Mars** and **Jupiter**.
7. A person 1 m in front of a plane mirror seems to be **2m** away from this image.
8. If you touch your **left** ear with right hand in front of a plane mirror it will be seen in the mirror that your right ear is touched with **left hand**.
9. The size of the pupil becomes l**arge** when you see in dim light.
10. Night birds have **less** cones than rods in their eyes.
11. Friction produces **heat**.
12. Sprinkling of powder on the carom board **reduces** friction.
13. Sliding friction is **less** than the static friction.
14. Time taken by an object to complete one oscillation is called **time period**.
15. Loudness is determined by the **amplitude.**
16. The unit of frequency is **hertz**.

17. Unwanted sound is called **noise.**

18. Shrillness of a sound is determined by the **pitch** of vibration.

19. Electron is responsible for flow of current.

20. A part of the bulb which glows is called **Filament.**

21. There are **two** wires attached to an LED.

22. Electrodes are **conductors .**

23. The deflection in **magnetic compass** shows that current is passing.

24. A cation has **positive** charge.

❖ **Indicate whether the following statements are True (T) or False (F).**

1. Sound cannot travel in vacuum. **[T]**

2. The number of oscillations per second of a vibrating object is called its time period. **[F]**

3. If the amplitude of vibration is large, sound is feeble. **[F]**

4. For human ears, the audible range is 20 Hz. To 20,000 Hz. **[T]**

5. The lower the frequency of vibration, the higher is the pitch. **[F]**

6. Unwanted or unpleasant sound is termed as music. **[F]**

7. Noise pollution may cause partial hearing impairment. **[T]**

8. Star is a member of the solar system. **[F]**

9. Mercury is the smallest planet of the solar system. **[T]**

10. Uranus is the farthest planet in the solar system. **[F]**

11. INSAT is the artificial satellite. **[T]**

12. There are nine planets in the solar system. **[F]**

13. Constellation Orion can be seen only with a telescope. **[F]**

14. Marble floor can be a good example of Regular reflection. **[T]**

15. Person is not able to see the objects in the room where there is light. **[F]**

16. The substances that conduct electricity through them are called good conductors. **[T]**

17. To check the electric current we do not use Tester. **[F]**

18. Chromium has a shiny appearance. [**T]**

19. Jewellery makers electroplate silver and gold on expensive metals. **[F]**

20. Electroplating wastes are useful to human health and environment. **[F]**

21. Some liquids are good conductors of electricity and some are poor conductors of electricity. **[T]**

❖ **Very short Answer Questions**

1. Does any part of our body vibrate when we speak? Name the part.
Ans: Yes**,** the part of our body that vibrates when we speak is the larynx (also known as vocal cords).

2. Name two musical instruments which produce sound by vibrating strings.
Ans: Sitar and Ektara are two musical instruments which produce sound by vibrating strings.

3. List three sources of noise pollution in your locality.
Ans: Vehicle noise, bursting of crackers, loudspeakers.

4. A pendulum oscillates 40 times in 4 seconds. Find its time period and frequency.
Ans: Time period $= \frac{\text{Time taken}}{\text{Number of oscillations}} = \frac{4}{40} = 0.1$ seconds
Frequency $= \frac{\text{Number of oscillations}}{\text{Time Taken}} = \frac{40}{4} = 10\ Hz$

5. The sound from a mosquito is produced when it vibrates its wings at an average rate of 500 vibrations per seconds. What is the time period of the vibration ?
Ans : Time period $= \frac{\text{Time taken}}{\text{Number of oscillations}} = \frac{1}{500} = 0.002\ seconds$

6. Identify the part which vibrates to produce sound in the following intruments.
(a) Dholak
(b) Sitar
(c) Flute
Ans: (a) Dholak - Stretched membrane.
(b) Sitar - Stretched string
(c) Flute - Air column.

7. What are conductors ?
Ans : Materials which allow electric current to flow through them are called conductors .

8. What are insulators ?
Ans - Materials which do not allow electric current to flow through them are called insulators.

9. Classify the following liquids into conductors and insulators : lemon juice, , distilled water, tap water, milk.
Ans – Conductors – Lemon juice, tap water
Insulators – Distilled water , milk

10. Why is a layer of zinc coated over iron?

Ans: A layer of zinc is coated over iron to protect iron from rusting and corrosion. This process is known as galvanization.

11. Will the solution of sugar in distilled water conduct electricity?

Ans: No, the solution of sugar in distilled water will not conduct any electricity.

12. . Name the effect of current responsible for the glow of bulb in an electric circuit.

Ans: Heating effect of electric current is responsible for the glow of bulb in an electric circuit.

13. What is LED ?

Ans – LED is Light Emitting Diode.

14. What is CFL ?

Ans – Compact Fluorescent Lamps

15. How many times is a ray of light reflected by two plane mirrors placed parallel and facing each other ?

Ans: Infinite number of times.

16. The angle between incident ray and reflected ray is 60°. What is the value of angle of incidence ?

Ans: According to the law of reflection, angle of incidence is always equal to the angle of reflection.

Let , incident ray = reflected ray = x.

The angle between incident ray and reflected ray is 60°

$2x = 60°$

$x = 60° \div 2 = 30°$

moon again ?

Ans: John will be able to see the next full moon in slightly longer than 29 days.

17. In the picture of rotating earth given as Fig. 17.3 mark the position of pole star.

Fig. 17.3

Ans: The pole star is situated in the direction of the earth's rotation axis.

18. Do stars emit light only during night ?

Ans: The stars are present in the sky even during the day-time. But they are not visible during daytime because of the bright sunlight.

❖ **Short Answer Questions:-**

1. Why is tin electroplated on iron to make cans used for storing food?

Ans: Tin is less reactive than iron. Tin coating on iron prevents food from coming in contact with iron can and thus prevents it from getting spoiled.

2. Observe Fig. 14.5.

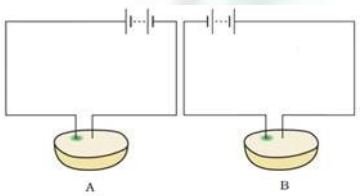


Fig. 14.5

Which of these two circuits A or B shows the correct observation?

Ans: Diagram A shows the correct observation.

Explanation: Circuit A shows the correct observation because in this circuit, wire connected to the positive terminal of the battery has a greenish blue spot.

3. Observe the following circuits carefully. In which circuit will the bulb glow. Write 'Yes' or 'No' in the blank space provided along each of the circuit given in Fig.

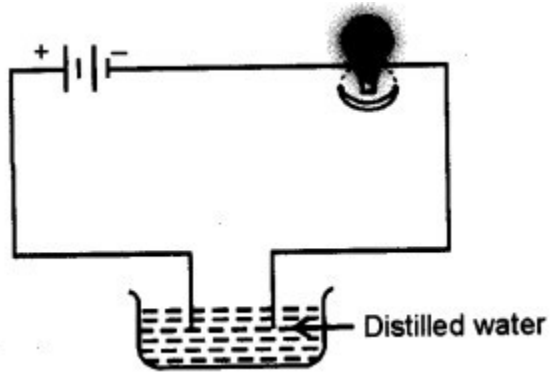
Ans: (a) No

(b) Yes. Iron is a metal and hence a good conductor of electricity.

(c) No. The material of an eraser is not a conductor of electricity.

(d) Yes. Steel is an alloy of metals and hence a good conductor of electricity.

4. Jaya sets up a circuit as given below. But the bulb does not glow. Why?

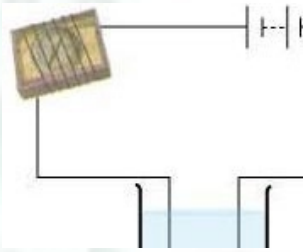


Ans – The bulb does not glow because distilled water is an insulator, since it does not have dissolved salts.

When the free ends of a tester are dipped into a solution, the magnetic needle shows deflection. Can you explain the reason?

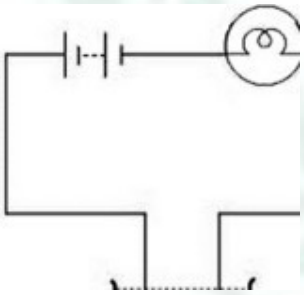
Ans. Yes, it is because the solution conducts electricity and solution plays the role of cell.

5. Name three liquids, which when tested in the manner shown in Fig.14.9 may cause the magnetic needle to deflect.



Ans. Tap water/Sodium chloride solution, copper sulphate solution and hydrochloric acid.

6. The bulb does not glow in the setup shown in fig. 14.1. List the possible reasons. Explain your answer.



Ans. The possible reasons are:

The solution may be conducting electricity but the current produced by it not sufficient to glow the bulb.

Bulb may be fused.

Cells may be used up.

7 . Define the terms -

1) Light: The natural agent that stimulates sight and makes things visible. Light is reflected from all surfaces. It is a form of energy.

2) Reflection of Light: Bouncing back of light after striking a shiny or polished surface, in the same medium, is called reflection.

3) Types of Reflection:

(i) Regular Reflection: When a beam of parallel light rays is incident on a smooth and plane surface, the reflected rays will also be parallel. This type of reflection is called Regular Reflection. The reflection from a plane mirror is an example of regular reflection.

(ii) Diffused or Irregular R flection: When light is incident upon a rough or uneven surface, it is reflected in many directions due to presence of irregularities on that surface.

4) Parts of Human Eye:

(i) Cornea: Transparent bulg on the front surface of the eyeball which protects the eye and helps in refraction of light.

(ii) Iris: Coloured diaphragm behind the cornea which controls the amount of light entering the eye.

(iii) Pupil: Dark hole in the middle of iris through which light enters the e e.

(iv) Eye lens: Transparent, crystalline structure behind pupil and iris.

(v) Ciliary muscles: Hole the eye lens in position and control the focal length of the eye lens.

(vi) Retina: Surface of the re r part of the eyeball where the light entering the eye is focused.

(vii) Rods and Cones: Rod cells respond to the brightness of light while cone cells respond to colours.

(viii) Blind spot: It is the least sensitive point where no rods and cones are present.

(ix) The space between the cornea and the eye lens is filled with **aqueous umour.**

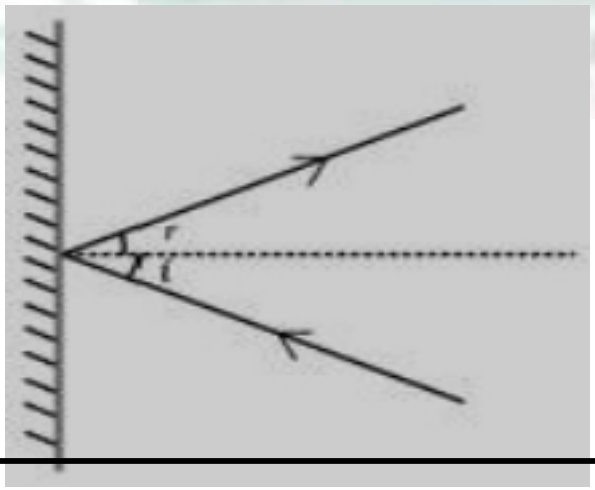
(x) The space between the eye lens and the retina is filled with **vitreous humour.**

8. What happens to light when it gets dispersed ? Give an example.

Ans: Light is split into its constituent colours. Rainbow is a natural pheno enon showing dispersion of light.

9. Draw figure showing the position of the plane mirror. Also, label t e angle of incidence and angle of reflection on it.

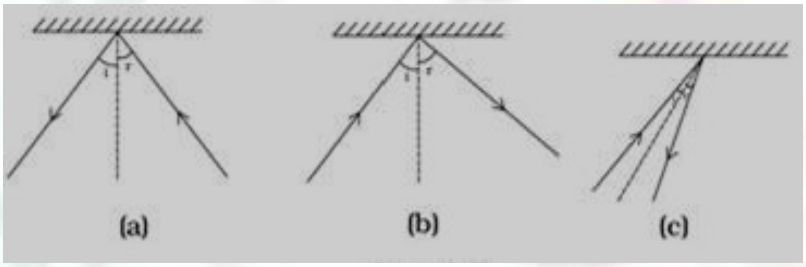
Ans:



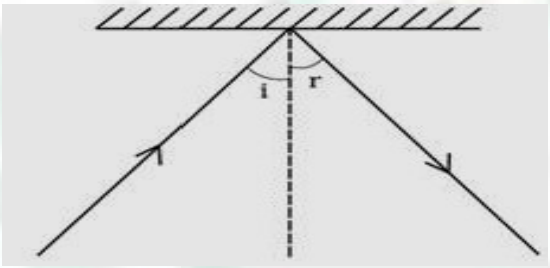
10. Look at Fig. given below . Can the image of the child in it be obtained on a screen ?

Ans: No, the image of the child cannot be obtained on a screen.

11. There is a mistake in each of the following ray diagrams given s Fig. a, b and c. Make the necessary correction (s).



Ans: According to the laws of reflection; angle of incidence is always equal to the angle of reflection. And the normal line is at 90° to the plane. In all of these cases t e figures should be as follows:



12. Explain the process which enables us to perceive motion in a carto n film.

Ans: The cartoon film we see is actually the projection of static pictures on the screen in a specific order. Usually the static pictures are shown in a sequence at the rate of 24 pictures per second one after the other giving us the perception of movement.

13. How is the phenomenon of reflection used in making a kaleidoscope ? What are the applications of a kaleidoscope ?

Ans: In a kaleidoscope, three plane mirrors inclined at an angle of 60° to each other are joined together, and fixed in a tube. This operates on the principle of multiple reflections and used to find colourful patterns.

Applications of a kaleidoscope are as follows :-

Designers and artists use kaleidoscope to get ideas for new patterns to design wallpapers, Jewellery and fabrics.

14. Match items in column A with one or more items in column B.

A	B
(i) Inner planets	(a) Saturn
(ii) Outer planets	(b) Great Bear
(iii) Constellation	(c) Moon
(iv) Satellite of the Earth	(d) Mars

Ans:

A	B
(i) Inner planets	(d) Mars
(ii) Outer planets	(a) Saturn
(iii) Constellation	(b) Great Bear
(iv) Satellite of the Earth	(c) Moon

15. Name two objects other than planets which are members of the solar system.

Ans: Satellites and Asteroids are the two objects other than planets which are members of the solar system.

16. Do all the stars in the sky move ? Explain.

Ans: No, no star moves in sky. They appear to move from east to west, because the Earth rotates from west to east about its axis.

17. In which part of the sky can you find Venus if it is visible as an evening star ?

Ans: Venus appears in the western sky just after sunset as a evening star.

18. Name the largest planet of the solar system.

Ans: Jupiter is the largest planet of the solar system.

19. What is a constellation ? Name any two constellations.

Ans: A group of stars which forms a recognizable pattern or shape is called a *constellation*.

Name of two constellations are - 1. Ursa Major (Great Bear) 2. Orion the hunter

❖ **Long Answer Questions:-**

1. Suggest three measures to limit noise pollution in your locality.

Ans: Measures to limit noise pollution could be as follows:-

i) Use of horns in the locality should be minimised. Persons of the locality can be sensitised to reduce noise.

ii) Double glazed glass can be used in windows to keep out noise.

iii) Trees should be planted along the roads and around the buildings.

iv) Silencers should be installed in transport vehicles and industrial machines.

2. What is the difference between noise and music ? Can music become noise sometimes ?

Ans: The unpleasant sound is called noise , Whereas pleasant sound is called music. Noise can produce so many health hazards, whereas music brings about soothing effect.

Yes, music can become a noise sometimes when the musical instruments produce very high volume sounds.

3. List sources of noise pollution in your surroundings.

Ans: The sources of noise pollution are :

(i) The sound produced by buses and trucks.

(ii) The sound produced at the construction site.

(iii) The sound produced by playing of T.V., radio and loudspeaker.

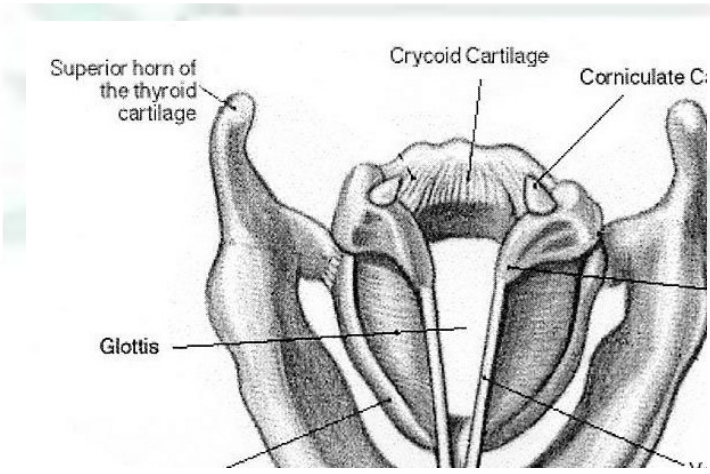
(iv) Bursting of crackers, and sound of big machines in the factories.

4. Explain in what way noise pollution is harmful to humans.

Ans: The noise pollution cause many health related problems. Lacks of sleep, hypertension, anxiety, etc. are some of the problems that may caused due to noise pollution. Moreover, a person who is exposed to a loud sound continuously may get temporary or permanent deafness.

5. Sketch larynx and explain its function in your own words.

Ans: The other name of larynx is voice box. It is present at the upper end of the windpipe. The function of larynx is to produce sound.

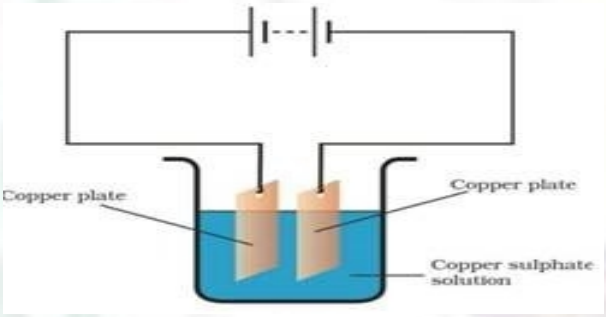


6. An electric current is passed through a conducting solution. List any three possible observations.

Ans: One of the following can be observed when an electric current is passed through a conducting solution:-

Formation of bubbles of a gas near the electrodes.
Deposit of a metal on an electrode.
Change in colour of the solution.
The solution may become warm. (Any three)

7. In the circuit given as Fig. Boojho observed that copper is deposited on the electrode connected to the negative terminal of the battery. Paheli tried to repeat the same experiment. But she could find only one copper plate. Therefore, she took a carbon rod as negative electrode. Will copper be still deposited on the carbon rod? Explain your answer.



Ans: Yes, a coating of copper will be formed on the carbon rod (electrode connected to the negative terminal of the battery).

When the circuit is complete and the current is flowing, copper sulphate solution will disassociate into copper ions and sulphate ions. Copper ions (positive ions) will get attracted towards the negative electrode and get deposited over the carbon rod. Copper ions from the copper plate connected to the positive terminal will get dissolved into the copper sulphate solution and will replenish the copper ions in the solution.

If required, another copper plate can be used as an anode after the copper plate connected to the positive terminal of the battery wears out. In this way, loss of copper from the copper solution can be restored and the process of electroplating can be continued for the desired time.

This process of depositing a layer of a desired metal (like copper) over another material (like carbon rod), by using the chemical effect of electric current, is known is electroplating.

8. Lightning and thunder take place in the sky at the same time and at the same distance from us. Lightening is seen earlier and thunder is heard later. Can you explain why ?
Ans: Because speed of light is more than the speed of sound. The light travels at the speed of 300,000,000 m/s which is very large in comparison to the speed of sound which travels at the rate of 330 m/s in air. That is why lightening is seen earlier and thunder is heard later.

9. A child staying in a coastal region tests the drinking water and also the seawater with his tester. He finds that the compass needle deflects more in the case of seawater. Can you explain the reason?

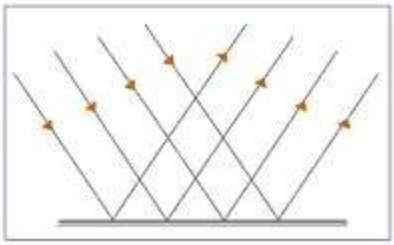
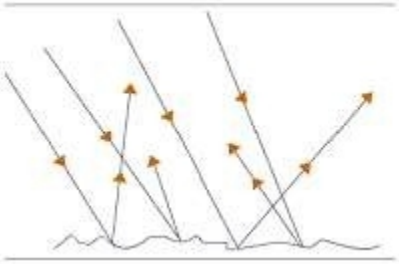
Ans. Seawater contains higher amount of salt in comparison to drinking water, hence sea water is a better conductor of heat. This is the reason that the compass needle deflects more in case of seawater.

10. Is it safe for the electrician to carry out electrical repairs outdoors during heavy rain pour? Explain.

Ans. It is not safe for the electrician to carry out electrical repairs outside during heavy rain. Because rain water dissolves many impurities from the atmosphere, which make it impure and very conductive of electricity. So electrician may get electric shock if he works outdoor during heavy downpour.

11.Differentiate between regular and diffused reflection. Does diffused reflection means the failure of the laws of reflection?

Ans.

Regular Reflection	Diffused Reflection
i. It occurs when parallel bea of incident rays remain parallel after reflection.	i. It occurs when parallel beam of incident rays doesn't remain parallel after reflection.
ii. Occurs from smooth surfaces like mirror, silver spoon etc.	ii. Occurs from rough surfaces like wood, table, door, book etc,
iii. 	iii. 

No, diffused reflection is not the failure of the laws of reflection.

12. Mention against each of the following whether regular or diffused reflection will take place when a beam of light strikes. Justify your answer in each case.

(a) Polished wooden table

(b) Chalk powder

(c) Cardboard surface

(d) Marble floor with water spread over it.

(e) Mirror

(f) Piece of paper.

Ans. (a) Regular reflection will take place because polished wooden table will have a smooth surface.

(b) Diffused reflection will take place because it is rough (not smooth) surface.

(c) Diffused reflection will take place because it is rough surface.

(d) Regular reflection as it will act like a plane mirror.

(e) Regular reflection will take place because plane mirror is a polished surface.

(f) Diffused reflection because suface of paper is rough.

13. State the laws of reflection.

Ans. The laws of reflection are -

(a) The angle of incident is always equal to angle of reflection.

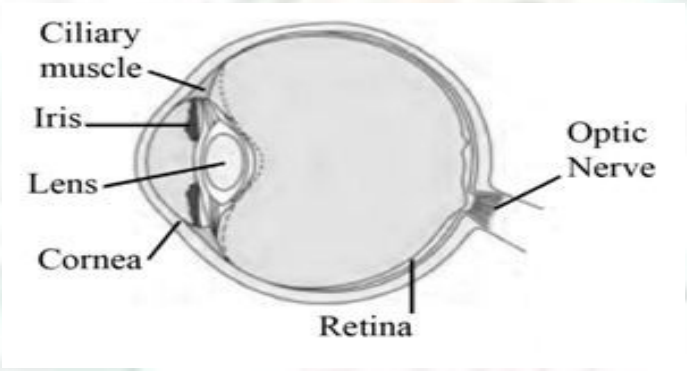
(b) The incidence ray, the reflected ray and the normal are lie in the same plane.

14. Describe the construction of a kaleidoscope.

Ans. Kaleidoscope is an optical instrument used to see a number of beautiful patterns. It is made up of a circular cardboard tube or tube of a thick chart paper in which rectangular mirror strips are joined together to form a prism. At one end of tube, touching these mirrors, a circular glass plate is fixed. Several small pieces of coloured glass are placed upon it. This end is closed by ground glass plate and beautiful patterns are seen through the other end of the kaleidoscope.

15. Draw a labelled sketch of the human eye.

Ans.



16.Explain how you can take care of your eyes.

Ans. The following care should be taken to keep our eyes healthy:

(a) We should not look at the sun or a powerful light source diretly.

(b) Too dim or more bright light is bad for the eyes.

(c) If advised, suitable spectacles should be used.

(d) We should always read from a normal distance for distinct vision.

(e) We should never rub our eyes if any small particle or dust goes into the eyes.

(f) Food containing Vitamin A should be used.

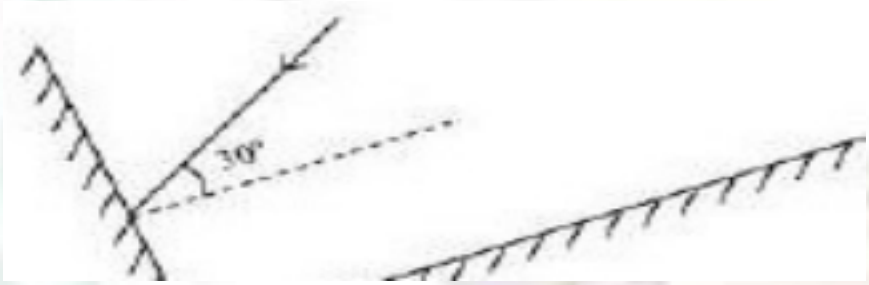
17. What is the angel of incidence of a ray if the reflected rays is at an angle of 90o to the incident ray?

Ans. The angle of incidence is 45°.

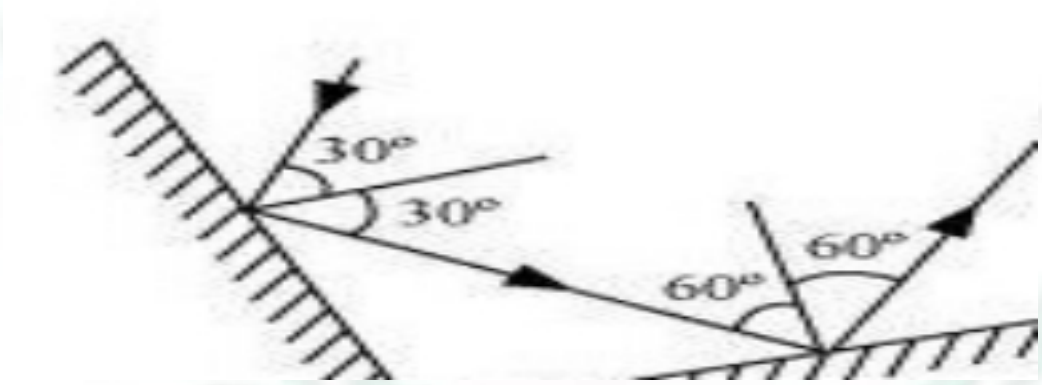
18. How many images of a candle will be formed if it is placed between two parallel plane mirrors separated by 40 cm?

Ans. Infinite number of images will be formed.

19. Two mirrors meet at right angles. A ray of light is incident on one at an angle of 30 degree as shown in fig. 16.19. Draw the reflected ray from the second mirror.

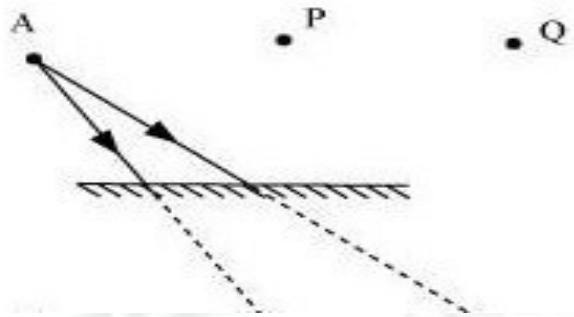


Ans.



20. Boojho stands at A just on the side of a plane mirror shown in fig. 16.20. can he see himself in the mirror? Also can he see the image of objects situated at P,Q and R?

Ans. Boojho will not be able see himself in the mirror. But he can see image of objects situated at P and Q.



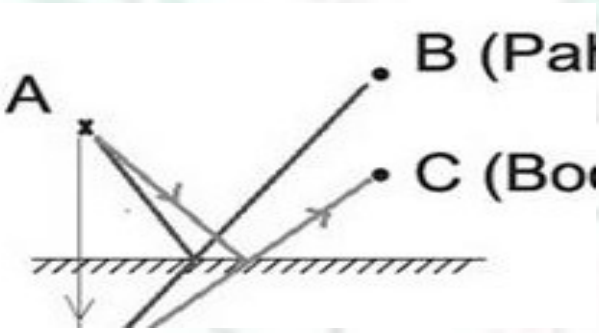
21. (a) Find out the position of the image of an object situated at A in the mirror.

(b) Can paheli at B see this image?

(c) Can Boojho at C see this image?

(d) When Paheli moves from B to C, where does the image of A move?

Ans. (a) A image will be formed at the same distance behind the mirror.



(b) Yes.

(c) Yes.

21. Meteors are not visible during the daytime. Explain the reason.

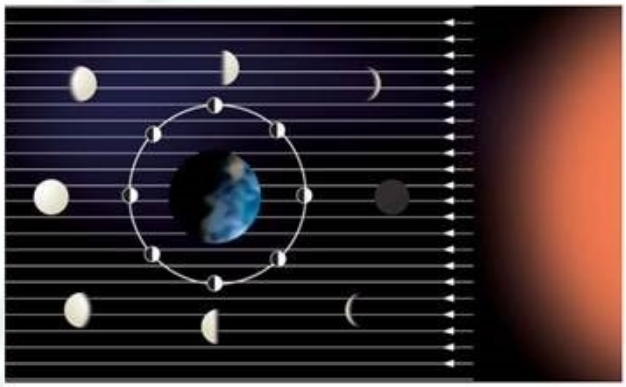
Ans: Meteors are very small, star-like objects that are revolving around the sun. They become visible only when, by some chance, they enter the earth's atmosphere. When a meteor enters the earth's atmosphere, it is travelling very fast . . . about 2 miles a second. At such high speeds, it gets heated due to friction with the molecules in the earth's atmosphere. The heat produced is

so high that the meteor begins to burn. It glows and evaporate quickly. But its brightness is extremely small compared to that of the sun due to which it is not visible during day time.

Look at Fig. carefully and answer the following question :

(a) In which part of the sky would you see the full moon in the evening ?

(b) In which part of the sky would you see the crescent moon in the evening ?



Ans: (a) We see the full moon in the evening in the eastern part of the sky.

(b) We see crescent moon in the evening in the western part of the sky.

22. Write the names of all planets in the given figure.

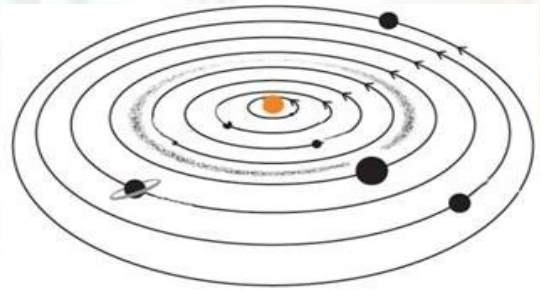
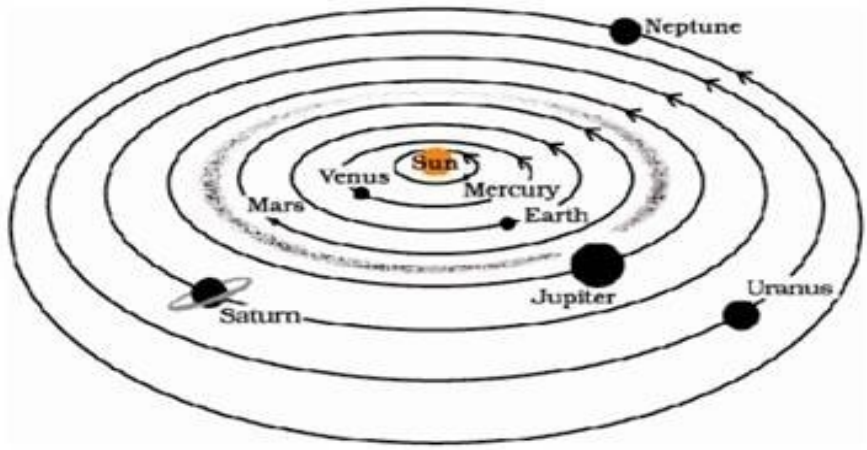


Fig. 17.8

Ans:



23. Suppose the distance between earth and sun becomes half of its present distance. What is likely to happen to life ?

Ans: The sun continuously emits huge amounts of heat and light and acts as the sources of almost all energy on the Earth. If the sun gets closer to earth the survival won't be possible due to excessive heat from sun. Life would no longer exist on earth.

24. Why is distance between stars expressed in light years ? What do you understand by the statement that a star is eight light years away from the earth ?

Ans: The distance of stars is so large that it cannot be expressed in terms of kilometers. That is why very large distances are expressed in another unit known as light year. One light year is the distance travelled by light in one year.

If the distance of a star is eight light years, it means that this distance is the distance travelled by light in one year.

25. The radius of Jupiter is 11 times the radius of Earth. Calculate the ratio of the volumes of Jupiter and the earth. How many earths can Jupiter accommodate ?

Ans: If the radius of the Earth is r.

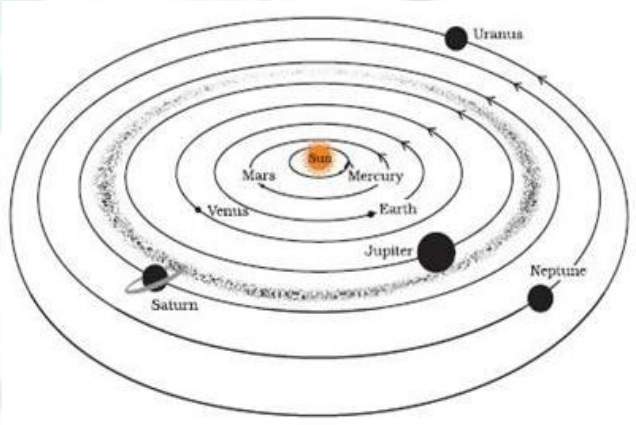
Radius of the Jupiter = 11 r.

$$\text{Volume of Jupiter} = \frac{4}{3}\pi(11\,r)^3 = 1331\left(\frac{4}{3}\pi r^3\right)$$

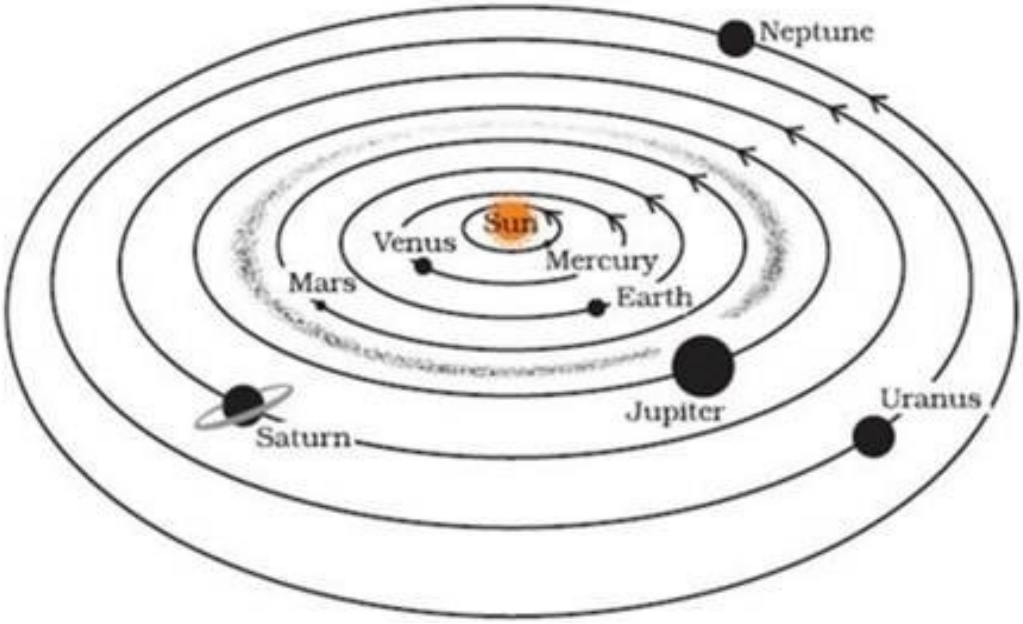
$$\frac{\text{Volume of Jupiter}}{\text{Volume of Earth}} = \frac{1331\left(\frac{4}{3}r^3\right)}{\left(\frac{4}{3}r^3\right)}$$

So, 1331 Earth can accommodate within the Jupiter.

26. Boojho made the following sketch (fig. 17.29) of the solar system. Is the sketch correct ? If not, correct it.



27. Ans: The positions of Mars and Venus have to be interchanged. Similarly positions of Neptune and Uranus also have to be interchanged.



28. Draw sketches to show the relative positions of prominent stars in

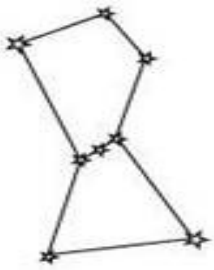
(a) Ursa Major (b) Orion.

Ans:

(a) Ursa Major appears like a big dipper.

Ursa Major

(b) Orion appears like a hunter.



Orion