

CBSE Sample Paper

Science Set – A Answer

Class 8

Section - A

1. When an ebonite rod is rubbed with wool, negative charges are transferred from the wool to an ebonite rod and the wool is left with the positive charges. Thus, an ebonite rod becomes negatively charged while wool becomes positively charged. So, there must be an attraction between the negatively charged ebonite rod and the positively charged glass rod as unlike charges attract each other.
2. The minimum temperature at which a substance catches fire and starts burning is called ignition temperature.
3. In a plane mirror, distance of image of an object from the mirror is same as the distance of object from mirror. The image of an object will be formed at a distance of 10 cm from the mirror.
4. Elongation of bones of legs and arms causes increase in height of the person during puberty.
5. During the age of adolescence, voice box increases in size due to which muscles of the voice box go out of control and thus voice becomes hoarse during the age of adolescence.
6. Transformation of a larva into an adult through drastic changes is called metamorphosis.
7. The various shapes of the bright part of the moon as seen during the month are called phases of the moon.
8. The stars, the planets, the moon and many other objects in the sky are called celestial bodies.
9. Ganga Action Plan.
10. Lead and Arsenic.
11. The nerve cell receives and transfers messages, so help to control and coordinate the working of different parts of the body.
12. (a) CNG –Compressed Natural Gas
(b) LPG – Liquefied Petroleum Gas
13. Those substances which have very low ignition temperature and can easily catch fire with a flame are known as inflammable substances e.g. petrol, LPG, etc.

- 14.** An object when placed in front of a plane mirror then the right side of the object appears to be on the left side of the image and the left side of the object appears to be on the right side of the image. This change of the side of an object and its mirror image is called lateral inversion. This phenomenon of lateral inversion occurs due to reflection of light.
- 15.** Cataract is an eye defect which usually occurs in old age. In this eye defect, eyesight becomes foggy because the eye lens become cloudy. There is a loss of vision. This defect can be treated when the opaque lens is removed and the new artificial lens is inserted.
- 16.** Formula for height = (Present height x 100)/(% of full height at this age)

$$= (135 \times 100) / 95$$

$$= 142 \text{ cm tall}$$
- 17.** Gametes are the haploid cells that help in sexual reproduction.

Sperms	Ova
These are the male gametes produced by testes.	These are the female gametes produced by ovaries.

- 18.** Pure water or distilled water is a bad conductor of electricity whereas acids and bases are good conductor of electricity. When an acid or ionic salts are dissolved in distilled water then the resulting solution conducts electricity.
- 19.** (i) Change in seasons on the earth occurs due to Earth's motion around the Sun and tilting of its axis of rotation.
(ii) The phases of moon are observed because the relative position of the Sun, Earth and the Moon changes. We can see only that part of the Moon which reflects the light of the Sun towards us.
- 20.** The gradual increase in the average temperature of the earth's atmosphere due to greenhouse gases like carbon dioxide is called global warming. It can cause flood by melting glaciers.
- 21.** During the development of thunderstorm, air currents move in the upward direction and the water droplets move in the downward direction. These movements causes the separation of charges. Usually, the negative charges accumulate at the lower part of the clouds and the positive charges are accumulated at its upper part. The positive charges are also accumulated at the ground also. When the accumulation of charges becomes large, a high potential difference is set up between lower part of clouds and earth, which is sufficient to break the insulation of air. As a result, negative and positive charges meet, producing streaks of bright light and sound. This process is called an electric discharge.

22. Mitochondria provide the energy to the cell for carrying out various activities.
Chromosomes transfer the characters from parents to the next generation.
Plastids are the largest cell organelle containing pigments. They give colour to flowers and fruits, which help in pollination.

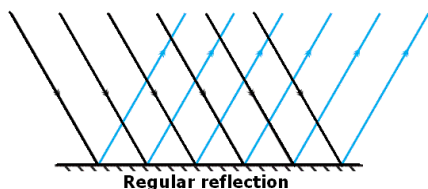
23. (i) 1. LPG (55000 kJ/kg) has higher calorific value than wood (17000-22000 kJ/kg).

2. LPG does not give smoke and any harmful gases but wood gives smoke and harmful gases like CO on burning.

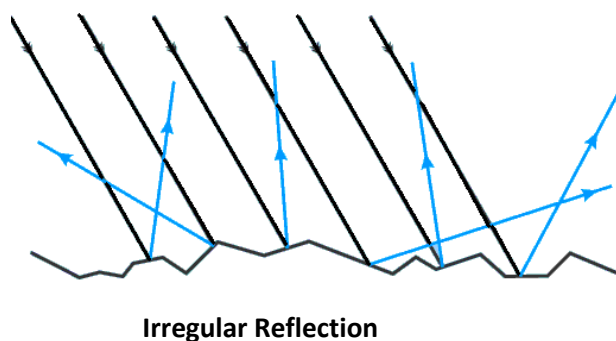
Hence, LPG is a better domestic fuel than wood.

(ii) Water is not used to control fires involving electrical equipment because water may conduct electricity and harm those trying to extinguish the fire.

24. Regular reflection: When all parallel incident rays remain parallel after reflection, then this type of reflection is called regular reflection. Regular reflection takes place from a smooth surface. Reflected rays do not intersect each other in case of regular reflection.



Irregular reflection: When all the parallel rays reflected from a plane surface are not parallel, the reflection is known as irregular or diffused reflection. Irregular reflection takes place from rough surface. Reflected rays can intersect each other in case of irregular reflection.

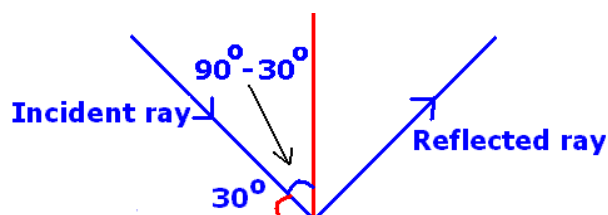


25. The laws of reflection are:

- (a) The incident ray, reflected ray and the normal ,at the point of incidence, all lie in the same plane.
- (b) The angle of incidence is always equal to the angle of reflection.

Angle of incidence = angle between incident ray and normal .

Now,



So angle of incidence = $90^{\circ} - 30^{\circ} = 60^{\circ}$

By second law of reflection,

Angle of incidence = angle of reflection

So angle of reflection = 60° .

26. Tap water contains dissolved impurities which makes it a good conductor of electricity.

So,when tap water is used as a conducting liquid in the a closed electric circuit, the bulb glows.

27. The rain, which is acidic in nature due to the presence of sulphuric acid and nitric acid, is called acid rain. Sulphur dioxide and nitrogen dioxide present in air react with the water vapour to form sulphuric acid and nitric acid. When these acids fall on the earth along with rain water, it is called acid rain.

28. Three harmful effects of polluted water are:

1. Polluted water causes many diseases in humans (e.g., Typhoid) and animals due to the presence of disease causing micro-organisms
2. The polluted water containing chemicals like lead, arsenic is toxic to plants and animals
3. Impure water causes change in pH of soil

29. Male reproductive organs are:

- A pair of testis: These organs help in production of male gametes.
- Sperm ducts: These are tube like structures that carry the male gametes from testes to

the penis.

- Penis: It helps in deposition of male gametes (sperms) into the body of the female.

30. Hormones from the pituitary stimulate testis and ovaries to release testosterone in male and estrogen in females.

Through blood stream, these hormones reach the target sites.

Then they stimulate the chemical and functional changes in the body for the onset of the puberty.

31. During the development of thunderstorm, air currents move in the upward direction and the water droplets move in the downward direction. These movements causes the separation of charges. Usually, the negative charges accumulate at the lower part of the clouds and the positive charges are accumulated at its upper part. The positive charges are also accumulated at the ground also. When the accumulation of charges becomes large, a high potential difference is set up between lower part of clouds and earth, which is sufficient to break the insulation of air. As a result, negative and positive charges meet, producing streaks of bright light and sound. These streaks of bright light is called lightning.

Or,

Causes of earthquake are as follows :-

1. Disturbances deep inside the earth's crust.
2. The movement of plates, whose boundaries are the weak zones called fault zones.
3. Nuclear explosion and volcanic activities

Earthquake can cause immense damage to buildings, bridges, dams and people. There can be a great loss to life and property. The earthquakes can cause floods, landslides, tremor and tsunamis.

Tsunami

Tsunami is a sea wave of local or distant origin that results from large-scale seafloor displacements associated with large earthquakes, major submarine slides, or exploding volcanic islands.

Tremor

Tremors are caused when an underground nuclear explosions is carried out, or a meteor strikes the earth, or a volcano erupts. The tremors produce waves on the surface of the earth. These are called seismic waves. An instrument called seismograph is used to record these waves.

32. Characteristics of the image formed by a plane mirror:

- (i) It is virtual.

- (ii) It is always erect.
- (iii) It is of the size of object.
- (iv) The image is formed as far behind the mirror as the object is in front of it.
- (v) The image is laterally inverted.
- (vi) Image is situated on the perpendicular drawn from the object to the mirror.

The position of the image is at the same distance behind the mirror as the object is in front of it. If the object is shifted by a distance 'd' towards the mirror, the image will also shift by the same distance 'd' towards the mirror, i.e., the separation between the object and image will decrease by 2d.

Or,

The process of depositing a thin layer of a desired metal over another metal object with the help of electric current is called electroplating. For electroplating a steel spoon with silver, a solution of silver, i.e. AgNO_3 is taken as the electrolyte. The spoon and a pure silver bar are dipped into the electrolyte and connected to the negative and positive terminals of a battery respectively. When electric current is passed through the silver nitrate solution, it dissociates due to chemical effect of electric current. The positively charged silver ions move to the negative electrode (spoon) and form a deposit of silver on it and thus the spoon is silver plated.

33. The characteristics of an ideal fuel are-

- i. It should be readily available and cheap.
- ii. It should produce a large amount of heat (high calorific value)
- iii. It should burn without giving any harmful gases.
- iv. It should burn easily in air at a moderate rate (proper ignition temperature).
- v. It should not leave behind any undesirable substances after burning.

Or,

CO_2 can be used as an extinguisher for fires involving electrical equipment and inflammable materials like petrol. It can be stored at high pressure as a liquid in cylinders. On releasing it from the cylinder, it expands enormously in volume and cools down. Thus, it not only forms a blanket around the fire but also brings down the temperature of the fuel. Hence, it is an excellent fire extinguisher.

34. Cytoplasm: It is the jelly-like substance present between the cell membrane and the nucleus. It is divided into two parts:

- 1) Cytosol
- 2) Cell organelles.

Cytosol is the soluble part of the cytoplasm.

Cytoplasm contains many specialised cell organelles (mitochondria, golgi bodies, ribosome, etc). Each of these organelles performs a specific function for the cell.

Nucleus: This is the most important part controlling the activities of living cells. In majority of the cells the nucleus lies in the centre, in few cells it may lie near the periphery as in plant cells. The main components of the nucleus are nucleoplasm, chromatin and nucleolus.

Nucleoplasm is the protoplasm of the nucleus enveloped by the nuclear membrane. Chromatin is the fibrous network of chromosomes containing the genes. Nucleolus is round and the denser part.

Or,

Differences are as follows:

Plant cell	Animal cell
<ul style="list-style-type: none"> • Larger in size • Plastids are present. • Cell wall is present. • Vacuoles are large in size and more in number. • They have fixed and regular shape. • Centrosomes are absent. 	<ul style="list-style-type: none"> • Smaller in size • Plastids are absent • Cell wall is absent. • Vacuoles are smaller or absent. • Shape is not fixed and is irregular • Centrosomes are present.

Section-B

35. 50 cm away from the mirror.
36. negative and positive charges, respectively.
37. plastid.
38. luminous zone.
39. LED
40. electrolysis.

41. metamorphosis.
42. uterine lining.
43. air pollution.
44. pale yellow zone.