

CBSE Sample Paper

Science Set – B Answer

Class 7

Section - A

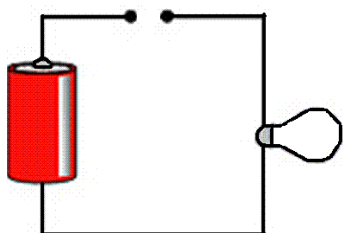
1. Photosynthesis is a chemical change.
2. When an object repeats its motion after a fixed interval of time, its motion is called periodic motion.
3. The speedometer of a vehicle measures the speed of the moving vehicle in km/h.
4. Miniature circuit breakers (MCBs) are the switches which automatically switch off when an electric current in a circuit exceeds the maximum limit. On turning them 'on', the circuit gets complete and thus, the current can flow through it.
5. Water table is the level below which ground is saturated with water.
6. The two diseases are:
 - (i) Dengue fever
 - (ii) Malaria.
7. Yes, a shiny surface can change the direction of the light.
8. Bisexual flower.
9. Heart is the pumping organ of a human body. It beats continuously to act as a pump for transporting blood to all body parts. Heart pumps carbon-dioxide rich blood to lungs and oxygen rich blood to rest of the body. Heart performs non-stop pumping action throughout the life of an individual.
10. Homeostasis encompasses the physiological processes that allows an organism to maintain its internal equilibrium.
11. Distance travelled = speed X time

Speed = 5 km/h

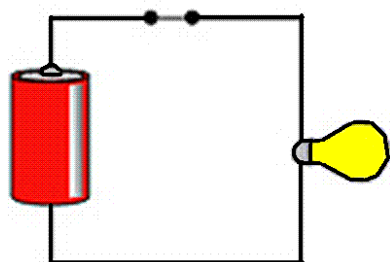
Time = 3 h

So, distance travelled by the car = (5 x 3) km = 15 km

- 12.** Underground water is present inside the earth. Water from rain and other sources of surface water moves inside the earth to fill the empty spaces and cracks. This water found below the water table is called underground water.
- 13.** An open circuit- When the switch is in 'Off' position, the circuit is called an open circuit. An open circuit is an incomplete circuit. No current flows in an open circuit and thus, the bulb in the circuit will not glow.

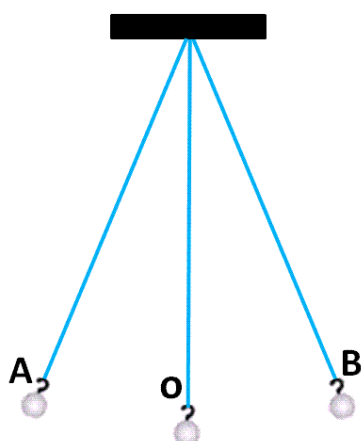


Closed circuit- When the switch is in 'On' position, the circuit is called a closed circuit. Closed circuit is a complete circuit. Current flows in a closed circuit and thus, the bulb in the circuit will glow.



- 14.** Untreated excreta pollute soil, air and water. The polluted water consists of disease causing bacteria which can spread epidemics such as meningitis, typhoid, etc. So, untreated excreta can cause a lot of health related problems.
- 15.** (i) Galvanisation is the process of coating iron objects with the layer of zinc metal.
(ii) Galvanised iron pipes are used for supplying water to prevent the rusting of iron when it comes in contact with water.
- 16.** When light falls on a shiny or a polished surface, then light changes its direction into the same medium. This is called reflection of light.
- 17.** The characteristics of the image formed by a concave lens are as follows:
- (a) It is erect.
 - (b) It is virtual.
 - (c) It is smaller in size.

- 18.** Advantages of plants produced by vegetative propagation are: (i) The plants take less time to grow.
(ii) The plants bear flowers and fruits earlier than those produced from seeds.
- 19.** Drip irrigation is a technique of watering plants by making use of narrow tubes, which deliver water directly at the base of the plant. This method uses water economically and hence, its wastage is minimised.
- 20.** We experience more sweating on a hot summer day than in winters because it helps us to cool our body and maintain the temperature of our body. Evaporation is the process which causes cooling.
- 21.** The three positions of the bob of the pendulum are as shown. Position 'O' is the mean position of the bob. The position 'A' and 'B' are extreme positions of the bob. The pendulum completes one oscillation when the bob moves from one extreme position to other by passing through mean position, i.e., one oscillation means when the bob moves from O to B to O to A and then back to O.



- 22.** A current carrying coil of an insulated wire wrapped around a piece of an iron is called an electromagnet. When the current is switched off, the coil loses its magnetism. Strong electromagnets can be made. Strong electromagnets are used at the end of the crane to lift very heavy loads. Magnetic materials can be separated from the junk with the help of electromagnets. Tiny electromagnets are used by the doctors so that tiny pieces of magnetic material can be taken out which have fallen in the eye accidentally.
- 23.** An electric fuse is a safety device which is used to prevent damages to the electric circuits. It contains a wire made up of a material having low melting point so that if large current passes through it, then the heat will be generated due to heating effect of an electric current, which melts the wire and breaks the circuit. Hence, the damage to the electrical appliances and possible wires can be prevented.
- 24.** The rainbow is seen as a large arc in the sky with many colours. It generally appears in the sky after the rain. When rain falls, then light from the sun is dispersed through rain

drops into different colours and rainbow appears. There are seven colours in a rainbow. They are Violet, Indigo, Blue, Green, Yellow, Orange, and Red (VIBGYOR).

25. The arrangement of veins in a leaf is called the leaf venation.

Reticulate Venation : In this the veins form a network like structure

Parallel venation : In this the veins run parallel to each other

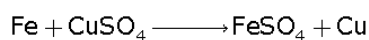
26. A heartbeat is a rhythmic wave of contraction and relaxation of cardiac muscles of heart. It pumps the blood to the various body parts.

27. (a) During summers, when the temperature is high, plants transpire more to keep themselves cool. So, more transpiration occurs and uptake of water increases. The transpiration pull exerts more pressure on the roots and it pull out water from the soil.
(b) Appearance of water on the surface of leaves during a cold night is called Dew. The process occurs due to condensation of water. As the exposed surface of leaves cools by radiating its heat, atmospheric moisture condenses at a rate greater than that at which it can evaporate, resulting in the formation of water droplets.

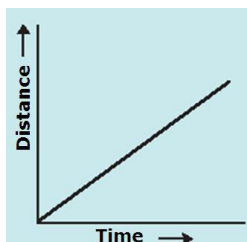
28. (i) Repair leaking taps immediately.
(ii) When washing the car, use water from a bucket and not from a hosepipe.
(iii) Do not throw away water that has been used for washing vegetables, rice etc.
(iv) Rain water harvesting.
(v) Do not leave the tap running while you are brushing your teeth or soaping your face.
(vi) Don't use shower too often for bathing.

29. Excess of fertilizers and pesticides are used by the farmers to increase the yield of crops and save the crops from pests, respectively. These pesticides and fertilizers contain a lot of chemicals and toxic substances that are washed into our lakes and pond. This increases the level of water pollution.

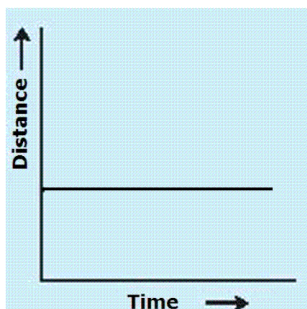
30. Iron being reactive in nature displaces copper from copper sulphate solution due to which colour of the copper sulphate solution changes from blue to green.



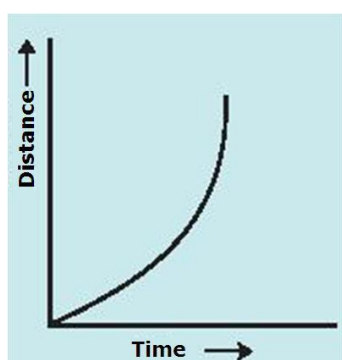
31. (i) A car moving with constant speed



(ii) A car parked on side road.



(iii) A car moving with non uniform speed.



32. This occurs due to the phenomenon of lateral inversion in which the right of an object appears to be the left of the image and vice-versa.

The image formed by a plane mirror is at the same distance behind the mirror as the object is in front of the mirror. When Rita moves her hand 5 cm backwards, the distance between her hand and the mirror will be 15 cm, i.e., the image is also 15 cm behind the mirror. It means the total distance between the object and image will be 30 cm.

Or,

Any polished or a shining surface acts as a mirror.

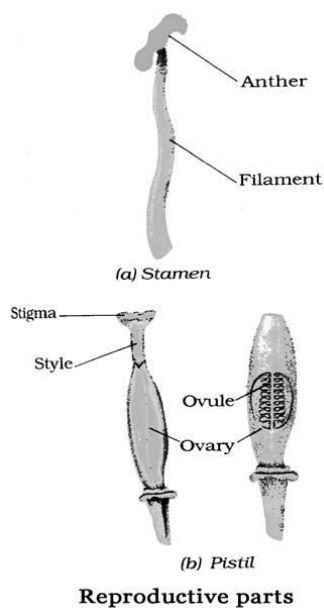
Characteristics of the image formed by plane mirror:

- (i) The image formed by a plane mirror is erect, laterally inverted and of the same size as that of the object.
- (ii) The left side of the object appears on the right side of the image.
- (iii) The distance of the image from the plane mirror is same as the distance between the plane mirror and the object.

The speed at which the image of the car appears to come close to the driver will be 8 ms^{-1} . The speed of the bus is 4 m/s which means the bus is approaching the car with a

speed of 4 m/s. The distance between the bus and the car will decrease at a double rate. This is because the image of the car will travel a distance twice the distance travelled by the bus in equal time. So, the image of the car will appear to approach the driver with the speed of $2 \times 4 \text{ m/s} = 8 \text{ m/s}$.

- 33.** lowers are the reproductive parts of a plant. The stamens are the male reproductive part and pistil is the female reproductive part. Stamen is formed of an anther and filament. Anther contains pollen grains which produces male gametes. A pistil consists of a stigma, style and ovary. The ovary contains one or more ovules. The female gamete or an egg is formed in an ovule.



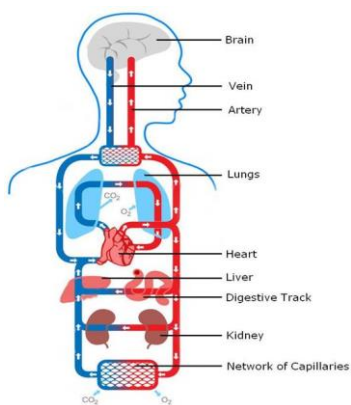
Or,

- a) Spirogyra (an alga) multiplies vegetatively by fragmentation. The algae grows rapidly in presence of water and nutrients. An algal filament breaks up into two or more fragments. These fragments or pieces grow into new individuals. This process continues and they cover a large area in a short period of time.

(b) Sporogenesis refers to the process of reproduction through spores. It occurs in reproductive structures known as sporangia which produce spores. Example: Moss and ferns.

(c) Hydra and yeast reproduce by the process of budding, where a new organism forms eventually and breaks away from the parent body.

34. Arteries and veins are joined by a network of capillaries which supply blood to every part of human body. Arteries carry oxygen rich blood towards body organs. On reaching the tissues, they divide again to form extremely thin tubes called capillaries, so that oxygen can be easily taken up by tissues. When these capillaries leave the tissues they take carbon dioxide rich blood of tissues and join to form veins. These veins take this blood to the heart. Thus, capillaries form a network to join arteries and veins.



Or,

(a) The two types of vascular tissues in plants are xylem and phloem.

- (b) Plants absorb water and mineral nutrients from soil by the help of roots. The roots have root hair which increases the surface area of absorption of the roots. Water is then translocated to upper parts of the plants through xylem which forms a continuous network of channels. They connect roots to the leaves through stems and branches. Thus, water and other nutrients move to all parts of a plant.
- (c) Stomata are tiny openings or pores present on the undersurface of the leaves used for exchange of gases. The pore is known as stoma which is surrounded by a pair of guard cells which are responsible for opening and closing of stomata. The stomata open when the guard cells are turgid, full of water and closes when there is excess loss of water through transpiration. The guard cells become flaccid resulting in closure of stomata.

Section - B

35. (b) chemical change.
36. (a) when the wires come in direct contact with each other.
37. (b) covers a distance of 45 kilometres in one hour.
38. (d) plasma.
39. (b) heating effect of electric current.
40. (b) wind.
41. (a) an optical toy.
42. (c) fertilisation.
43. (c) increase in population.
44. (b) Waste Water Treatment Plant