

Chapter 6: Changes Around Us

NCERT Exemplar · Class 6 · Science

Multiple Choice Questions

Question 1

Pick the change that can be reversed from the following

A.

Cutting of trees

B.

Melting of ghee

C.

Burning of candle

D.

Blooming of flower

Answer

Correct option: B

Solution

Ans: The correct option is (b) melting of ghee. Ghee can be refrozen after it has melted. As a result, it's a reversible procedure (in winters it gets frozen on its own, even in the container).

Question 2

Which of the following changes cannot be reversed?

A.

Hardening of cement

B.

Freezing of ice cream

C.

Opening a door

D.

Melting of chocolate

Answer

Correct option: A

Solution

Ans: The correct option is (a) Hardening of cement. Once cement is hardened, it cannot be changed into its original state. Therefore, it is an irreversible process.

Question 3

An iron ring is heated. Which of the following statements about it is incorrect?

A.

The ring expands

B.

The ring almost comes to the same size on cooling

C.

The change in this case is reversed

D.

The ring changes its shape and the change cannot be reversed

Answer

Correct option: D

Solution

Ans: The right answer is (d), the ring changes its shape and the change cannot be reversed. When iron is heated, it expands, and when it cools, it shrinks back to its original size. As a result, iron melting is a reversible process.

Question 4

While lighting a candle, Paheli observed the following changes

- (i) Wax was melting
- (ii) Candle was burning
- (iii) Size of the candle was reducing
- (iv) Melted wax was getting solidified

Of the above, the changes that can be reversed are

A.

(i) and (ii)

B.

(ii) and (iii)

C.

(iii) and (iv)

D.

(i) and (iv)

Answer

Correct option: D

Solution

Ans: The correct option is (d) (i) and (iv) Wax was melting and Melted wax was getting solidified because it is a reversible process.

Question 5

Salt can be separated from its solution (salt dissolved in water), because

A.

Mixing of salt in water is a change that can be reversed by heating and melting of salt.

B.

Mixing of salt in water is a change that cannot be reversed.

C.

Mixing of salt in water is a permanent change.

D.

Mixing of salt in water is a change that can be reversed by evaporation.

Answer

Correct option: D

Solution

Ans: The correct option is (d) Mixing of salt in water is a change that can be reversed by evaporation. The addition of salt to water is a reversible process.

Question 6

Rolling of chapati and baking of chapati are the changes that

A.

Can be reversed

B.

Cannot be reversed

C.

Can be reversed and cannot be reversed, respectively

D.

Cannot be reversed and can be reversed, respectively

Answer

Correct option: C

Solution

Ans: The correct option is (c) can be reversed and cannot be reversed, respectively. We can roll chapati into a ball of dough, however the chapatti cannot be uncooked once it has been cooked.

Question 7

Iron rim is made slightly smaller than the wooden wheel. The rim is usually heated before fixing into the wooden wheel, because on heating the iron rim

A.

Expands and fits onto the wooden wheel

B.

Contracts and fits onto the wooden wheel

C.

No change in the size takes place

D.

Expands first, then on cooling contracts and fits onto the wooden wheel

Answer

Correct option: D

Solution

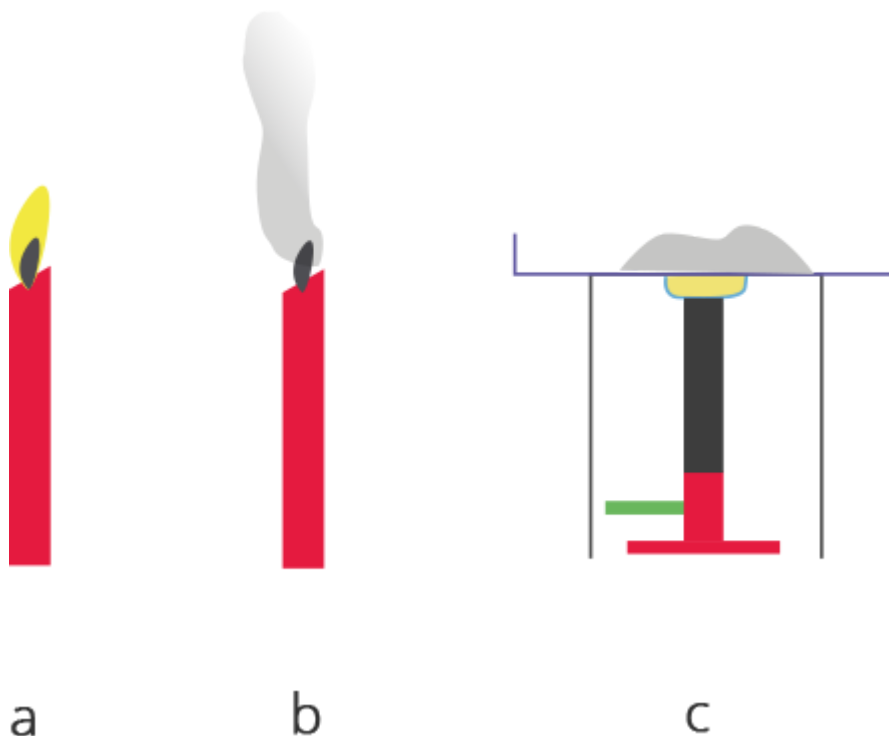
Ans: The correct option is (d) Expands first, then on cooling contracts and fits onto the wooden wheel. Iron expands when heated. So when the smaller rim of iron is heated it will fit the size of the wooden wheel, and once it is cooled down, it will go back to the size to fit the wooden wheel tightly.

Very Short Answer Questions

Question 8

Look at Fig. 6.1 which shows three situations

- (a) A burning candle
- (b) An extinguished candle
- (c) Melting wax.



Which of these shows a reversible change and why?

Solution

Ans: The correct answer is option (c) the melting wax. Melted wax can be changed into its solid or viscous state on cooling. Therefore, it is a reversible change.

Question 9

A piece of iron is heated till it becomes red-hot. It then becomes soft and is beaten to a desired shape. What kinds of changes are observed in this process– reversible or irreversible?

Solution

Ans: The temperature change in the iron piece is a reversible process. A piece of iron will expand when heated and can be changed into the desired shape. That desired thing/shape can then be heated and beaten again to restore its original shape.

Question 10

Paheli had bought a new bottle of pickle from the market. She tried to open the metal cap to taste it but could not do so. She then took a bowl of hot water and immersed the upper end of the bottle in it for five minutes. She could easily open the bottle now. Can you give the reason for this?

Solution

Ans: Almost all metals expand when exposed to heat. As a result, when the jar is submerged in hot water, the metal cap expands and opens effortlessly.

Short Answer Questions

Question 11

Can we reverse the following changes? If yes, suggest the name of the method.

- (a) Water into water vapour
- (b) Water vapor into water
- (c) Ice into water
- (d) Curd into milk.

Solution

Ans: Yes, the water can be turned into water vapour. Condensation can be used to make this reversible change. The water vapour will be condensed or cooled off to form water.

Ans: Water vapour into water is a reversible change. The process here is evaporation. When then water vapours are condensed to form water, it can be heated or evaporated to form water vapour again.

Ans: Ice into water is also a reversible change. Once the ice is melted into water, it can be gained back by freezing. The melted water will again form ice.

Ans: Changing of curd into milk is an irreversible change. The transformation of milk into curd is a chemical process that is difficult to reverse. So once the milk is converted into curd, it cannot be changed into its original state.

Question 12

Which of the following changes cannot be reversed?

- (a) Blowing of a balloon
- (b) Folding paper to make a toy aeroplane
- (c) Rolling a ball of dough to make roti
- (d) Baking cake in an oven
- (e) Drying a wet cloth
- (f) Making biogas from cow dung
- (g) Burning of a candle

Solution

Ans: The following changes are irreversible-

- (d) Baking cake in an oven,
- (f) Making biogas from cow dung.
- (g) Burning of a candle.

Question 13

Boojho's sister broke a white dove, a symbol of peace, made of Plaster of Paris (POP). Boojho tried to reconstruct the toy by making a powder of the broken pieces and then making a paste by mixing water. Will he be successful in his effort? Justify your answer.

Solution

Ans: No, Boojho will not be able to recreate the dove from the shattered Plaster of Paris parts because the process is irreversible. The POP loses its properties once mixed with water and converted into something and dried.

Question 14

Tearing of paper is said to be a change that cannot be reversed. What about paper recycling?

Solution

Ans: Recycling paper is the same as tearing paper. As on recycling properties of paper change, like the texture, colour, quality etc. therefore, it is an irreversible change.

Long Answer Questions

Question 15

Give one example in each case

- (a) Change which occurs on heating but can be reversed.
- (b) Change which occurs on heating but cannot be reversed.
- (c) Change which occurs on cooling but can be reversed.
- (d) Change occurs on mixing two substances, but can be reversed.

Solution

Ans: An iron rod's heating is a reversible process

Ans: Baking chapati is an irreversible change.

Ans: Formation of ice from water is reversible.

Ans: Formation of salt solution.

- (e) Change which occurs on mixing two substances, but cannot be reversed.

Ans: Mixing of cement and water is an irreversible change.

Question 16

A potter working on his wheel-shaped a lump of clay into a pot. He then baked the pot in an oven. Do these two acts lead to the same kind of changes or different? Give your opinion and justify your answer.

Solution

Ans: The two actions lead to different kinds of changes-

1. Since only the physical property of the lump of clay is modified when it is moulded into a pot, it is a reversible process.
2. When the pot is baked in the oven, its chemical properties are changed, thus, it is an irreversible process.

Question 17

Conversion of ice into water and water into ice is an example of change which can be reversed. Give four more examples where you can say that the changes can be reversed.

Solution

Ans: Examples of reversible change.

- i. Inflating a balloon.
- ii. Melting of wax.
- iii. Folding of a paper.
- iv. Blowing a balloon.

Question 18

Change of a bud into a flower is a change which cannot be reversed. Give four more such examples.

Solution

Ans: Examples of an irreversible change

- i. Bursting the blown balloon.
- ii. Grinding a vegetable or a fruit
- iii. Cooking a vegetable.

iv. Burning a candle.

Question 19

Paheli mixed flour and water and (i) made a dough, (ii) rolled the dough to make a chapati, (iii) baked the chapati on a pan, (iv) dried the chapati and ground it in a grinder to make powder. Identify the changes (i) to (iv) as the changes that can be reversed or that cannot be reversed.

Solution

Ans: Reversible changes-

(ii) Rolled the dough to make a chapati

Irreversible changes-

(i) made a dough,

(iii) baked the chapati on a pan,

(iv) dried the chapati and ground it in a grinder to make powder.

Question 20

It was Paheli's birthday, her brother Simba was helping her to decorate the house for the birthday party and their parents were also busy making other arrangements. Following were the activities going on at Paheli's home:

(i) Simba blew balloons and put them on the wall.

(ii) Some of the balloons got burst.

(iii) Paheli cut colourful strips of paper and put them on the wall with the help of tape.

(iv) She also made some flowers by origami (paper folding) to decorate the house.

(v) Her father made dough balls.

(vi) Mother rolled the dough balls to make puris.

(vii) Mother heated oil in a pan.

(viii) Father fried the puries in hot oil.

Identify the activities at Paheli's home as those that can be reversed and those which cannot be reversed.

Solution

Ans: Reversible changes-

- (i) Simba blew balloons and put them on the wall
- (iv) She also made some flowers by origami (paper folding) to decorate the house.
- (v) Her father made dough balls.
- (vi) Mother rolled the dough balls to make puris.
- (vii) Mother heated oil in a pan.

Irreversible changes-

- (ii) Some of the balloons got burst.
- (iii) Paheli cut colourful strips of paper and put them on the wall with the help of tape.
- (viii) Father fried the puries in hot oil. Identify the activities at Paheli's home as those that can be reversed and those which cannot be reversed.

Importance of Learning From NCERT Science Exemplar Problems

Science Exemplar Questions & Solutions were introduced to class 6th students to test their analytical thinking, comprehension, and problem-solving ability. This is also the section because of which different education platforms give priority to NCERT Science Exemplar books and solutions. If we talk of the science chapter of class 6th Changes Around Us then the exemplar problems are not only important for examinations but they improve the base for the students.

The exercises given on the NCERT Science Exemplar books provide students to take a self-assessment even when they are not at school. In addition to that, students also master the techniques of solving complex problems and situation-based problems where they use their mental skills, understanding skills to find answers to your question. So if you are a student in class 6th or a parent who is looking for the best assistance then class 6th Science exemplar book problems and solutions are your best available option.

