

IN TEXT QUESTIONS

Q.1. In the given table, check whether the given change can be reversed or not.

Change	Can be reversed
Raw egg to boiled egg	
Batter to idli	
Wet clothes to dry clothes	
Woollen yarn to knitted sweater	
Grain to its flour	
Cold milk to hot milk	
Straight string to a coiled string	
Bud to flower	
Milk to paneer	
Cow dung to biogas	
Stretched rubber band to its normal size	
Ice cream to molten ice cream	

Change	Can be reversed
Raw egg to boiled egg	No
Batter to idli	No
Wet clothes to dry clothes	Yes
Woollen yarn to knitted sweater	Yes
Grain to its flour	No
Cold milk to hot milk	Yes
Straight string to a coiled string	Yes
Bud to flower	No
Milk to paneer	No
Cow dung to biogas	No
Stretched rubber band to its normal size	Yes
Ice cream to molten ice cream	Yes

Page No. 49

Q.3. You have seen that construction workers heat a black material called coal tar, for repairing a road. State whether the change which has occurred in coal tar on being heated is reversible or irreversible?

Ans. When coal tar is heated, it melts to form a thick dark liquid and again it solidifies on cooling. Hence, the melting of coal tar is a reversible change.

Q.4. How does a blacksmith change a piece of iron into different tools and what change has taken place in iron, on being heated?

Ans. A blacksmith first heats a piece of iron till it becomes red hot. It then becomes soft and can be beaten into desired shape. Iron when heated and beaten it forms some shape and again heated it regain initial iron. Thus, this change is a reversible change.

Page No. 50

Q.5. When salt dissolved in water, what change is happening at the end?

Ans. Salt and water are two different objects, when they mix with each other, a new object forms after the chemical reaction. Hence, this change is called as 'chemical change'.



NCERT

Exercises

(Questions-Solutions)

EXERCISES

Page No. 51

Q.1. To walk through a waterlogged area, you usually shorten the length of your dress by folding it. Can this change be reversed?

Ans. Yes, we can reverse this change by unfolding the dress.

Q.2. You accidentally dropped your favourite toy and broke it. This is a change you did not want. Can this change be reversed?

Ans. No, this change cannot be reversed. Because breaking of a toy is an irreversible change, one cannot regain the same toy.

Q.3. Some changes are listed in the following table. For each change, write in the blank column whether the change can be reversed or not.

S. No.	Change	Can be reversed (Yes/No)
(i)	The sawing of a piece of wood	
(ii)	The melting of ice candy	
(iii)	Dissolving sugar in water	
(iv)	The cooking of food	
(v)	The ripening of a mango	
(vi)	Souring of milk	

Ans.

S. No.	Change	Can be reversed (Yes/No)
(i)	The sawing of a piece of wood	No
(ii)	The melting of ice candy	Yes
(iii)	Dissolving sugar in water	Yes
(iv)	The cooking of food	No
(v)	The ripening of a mango	No
(vi)	Souring of milk	No

Q.4. A drawing sheet changes when you draw a picture on it. Can you reverse this change?

Ans. We can reverse this change only if pencil is used for drawing by using eraser. If pen or paint is used for drawing, then we cannot reverse this change.

Q.5. Give examples to explain the difference between changes that can or cannot be reversed.

Ans. (a) **Changes that can be reversed** In such changes, we can go back to original state. These changes are also known as reversible changes.

Some examples are as follows:

- (i) Melting of ice
- (ii) Drying of clothes
- (iii) Knitting of sweater
- (iv) Heating of milk
- (v) Stretching the rubber band

(b) **Changes that cannot be reversed** In such changes, we cannot go back to original state. These changes are also known as irreversible changes.

Some examples are as follow:

- (i) Making curd from milk
- (ii) Making flour from grain
- (iii) Boiling of egg
- (iv) Growth of plants
- (v) Burning of paper or wood

Q.6. A thick coating of a paste of Plaster of Paris (POP) is applied over the bandage on a fractured bone. It becomes hard on drying to keep the fractured bone immobilised. Can the change in POP be reversed?

Ans. No, the change in POP cannot be reversed because it is a irreversible chemical change.

Q.7. A bag of cement lying in the open gets wet due to rain during the night. The next day, the sun shines brightly. Do you think the changes which have occurred in the cement, could be reversed?

Ans. No, the changes which have occurred in the cement cannot be reversed because it is a irreversible chemical change.



NCERT

Exemplar

(Problems-Solutions)

MULTIPLE CHOICE QUESTIONS

Q 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

Ans. (b) Melting of ghee is a reversible change because on melting ghee turns into liquid form and after cooling it returns back to its original form.

Q 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

Ans. (a) Hardening of cement is an irreversible change. Changes that cannot be reversed are called irreversible changes.

Q 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

Ans. (d) When iron ring is heated, the change in this case is reversed.

Q 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)

Ans. (d) Melting of wax and solidification of melted wax, both can be seen in case of lighting a candle.

Q 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

Ans. (d) Mixing of salt in water is a change that can be reversed by evaporation.

Q 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

Ans. (c) Rolling of chapati can be reversed and baking of chapati cannot be reversed.

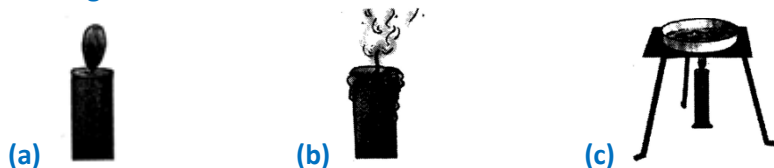
Q 7. Iron rim is made slightly smaller than the wooden wheel. The rim is usually heated before fixing into the wooden wheel because on heating the iron rim

- (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

Ans. (d) On heating the iron rim, it expands first, then on cooling contracts and fits onto the wooden wheel.

VERY SHORT ANSWER TYPE QUESTIONS

Q 8. Look at figures given below, which show three situations burning candle (b) an extinguished candle (c) melting wax.



Which of these shows a reversible change and why?

Ans. Melting of wax in (c), which on cooling, changes back to solid wax but burning candle and an extinguished candle show chemical irreversible change.

Q 9. A piece of iron is heated till it becomes red hot. It then becomes soft and is beaten to a desired shape. What kind of changes are observed in this process—reversible or irreversible?

Ans. In this process, the kind of changes is reversible because again we can warm it and get an iron in original form.

Q 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?

Ans. She can easily open the bottle because of expansion of metal cap due to heating.

SHORT ANSWER TYPE QUESTIONS

Q 11. Can we reverse the following changes? If yes, suggest the name of the method.

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

Ans. (a) Yes, and the name of method is condensation.
 (b) Yes, and the name of method is evaporation.
 (c) Yes, and the name of method is freezing.
 (d) Not possible.

Q 12. Which of the following changes cannot be reversed?

- (a) Blowing of a balloon
- (b) Folding a 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

Ans. Changes that cannot be reversed are as follows:

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

Q 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.

Ans. Boojho will not be successful because making of toy from Plaster of Paris (POP) is a change that cannot be reversed.

Q 14. Tearing of paper is said to be a change that cannot be reversed. What about paper recycling?

Ans. We can get the paper on paper recycling but it is not the same original paper that we get. The colour and texture of the paper change.

LONG ANSWER TYPE QUESTIONS

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

Ans. The example of each case is as follows:

- (a) Heating of an iron rod
- (b) Baking of chapati
- (c) Formation of ice from water
- (d) Formation of salt solution
- (e) Mixing of cement and water

Q 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.

Ans. These two acts are of different kinds. Making a lump of clay into a pot is a reversible change, while baking the pot in an oven is an irreversible change.

Q 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.

Ans. Changes that can be reversed are called reversible changes.
Some examples are as follows:

- (i) Melting of wax
- (ii) Folding of a paper
- (iii) Knitting of a sweater
- (iv) Inflating of a tyre

Q 18. Change of a bud into a flower is a change, which cannot be reversed. Give four more such example.

Ans. Changes that cannot be reversed are called irreversible change;

Some examples are as follows:

- (i) Milk into curd (ii) Burning of wood
- (iii) Ripening of fruits (iv) Digestion of food

Q 19. 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:

- (a) Simba blew balloons and put them on the wall.
- (b) Some of the balloons got burst.
- (c) Paheli cut colourful strips of paper and put them on the wall with the help of tape.
- (d) She also made some flowers by origami (paper folding) to decorate the house.
- (e) Her father made dough balls.
- (f) Mother rolled the dough balls to make puries.
- (g) Mother heated oil in a pan.
- (h) 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.

Ans. Reversed changes are as follows:

- (a) Simba blew balloons and put them on the wall.
- (d) Making of some flowers by origami (paper folding) to decorate the house.
- (e) Her father made dough balls.
- (f) Mother rolled the dough balls to make puries.
- (g) Mother heated oil in a pan.

Changes that cannot be reversed are as follows:

- (b) Some of the balloons got burst.
- (c) Paheli cut colourful strips of paper and put them on the wall with the help of tape.
- (h) Father fried the puries in hot oil.