

8.SLOW, FAST, REVERSIBLE & IRREVERSIBLE CHANGES SOLUTIONS

TEACHING TASK

JEE MAINS LEVEL QUESTIONS

1. When a paper is burnt it changes to ash and smoke it is a.

A) irreversible change B) reversible change C) desirable change D) none

Answer:A

Solution: Burning causes a chemical change, and the original paper cannot be recovered.

2. A candle on burning forms carbon dioxide gas and water vapour.

A) reversible change B) irreversible change C) periodic change D) desirable change

Answer:B

Solution: Burning of a candle is a chemical change and irreversible.

3. Falling of leaves from a tree is a .

A) slow change B) irreversible change C) nonperiodic change D) both b & c

Answer:D

Solution: Falling leaves cannot reattach to the tree (irreversible), and it does not follow a fixed time cycle (non-periodic).

4. The original substance can not be obtained in a

A) Physical change B) Irreversible change C) Slow change D) Fast Change

Answer:B

Solution: In irreversible changes, the original substance is permanently altered and cannot be recovered.

5. Melting of ice is a.

A) reversible change B) Periodic change C) chemical change D) both a & b

Answer:A

Solution: Ice can melt into water and freeze back into ice, making it a reversible physical change

6. Beating of metals into sheets or drawing metals into wires.

A) temporary change B) reversible change C) Physical change D) all

Answer:D

Solution: It is a temporary, reversible, and physical change.

7. Food turning bad in summer is a .

A) Reversible change B) Irreversible change C) periodic change D) physical change

Answer:B

Solution: Spoiled food cannot be made fresh again.

8. Melting of snow on the mountains in summer is a

A) desirable change B) Slow change C) periodic change D) none

Answer:B,C

Solution: Snow melts slowly due to the high latent heat of fusion of ice, which requires a significant amount of energy to transition from solid ice to liquid water. Additionally, factors like the large amount of snow on mountains and the colder temperatures at higher altitudes contribute to its slow melting process

9. Earth quakes are a

A) Slow change B) reversible change C) Fast change D) None

Answer:C

Solution: Earthquakes happen suddenly and are rapid changes.

10. Flooding of rivers in rainy seasons is an .

A) Slow change B) Fast change C) Reversible Change D) none

Answer:B

Solution: Flooding occurs quickly due to heavy rains.

JEE ADVANCED LEVEL QUESTIONS

Multi correct answer type:

11. Examples of irreversible change are

A) souring of curd B) cooking food C) ripening of oranges D) none

Answer:A,B,C

Solution: All three processes involve chemical changes where the original substances are permanently altered, and the change cannot be reversed to get back the original form.

Souring of curd → Milk turns into curd due to bacterial action; irreversible.

Cooking food → New substances are formed when food is cooked; irreversible.

Ripening of oranges → Involves chemical changes (starch to sugar, color change) irreversible.

Assertion and Reason Type:

A) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

B) Both Assertion and Reason are true, but Reason is NOT the correct explanation for Assertion.

C) Assertion is true, but Reason is false.

D) Assertion is false, but Reason is true.

12. Assertion : Souring of milk is a irreversible change

Reason : Souring of milk is a fast change

Answer:C

Solution: Assertion: True

Once milk has turned sour, it cannot be changed back to fresh milk. It's a chemical change and thus irreversible.

Reason: False

Souring of milk is not considered a fast change under normal conditions; it takes several hours, depending on temperature. It is a slow chemical change.

Comprehension Type:

A Change which can be reversed is called a reversible change. In this change, the products formed can be converted back into their original forms. A change which cannot be reversed is called an irreversible change. In this change, the products cannot be converted back into their original form.

13. Which of the following is reversible change

A) Growth of a plant B) Formation of flower from bud

C) Falling of leaves from a tree D) Melting of wax

Answer:D

Solution: Melting of wax is a reversible change because the melted wax can solidify again when cooled, returning to its original form.

Integer type:

14. Souring of milk, Movement of the continents, Ageing of man and animals, Boiling of water. How many irreversible changes?

Answer:3

Solution:

Souring of milk – Irreversible (Chemical change; cannot return to fresh milk).

Movement of the continents – Irreversible (Tectonic shifts occur over millions of years and cannot revert to previous positions).

Ageing of man and animals – Irreversible (Biological ageing cannot be reversed).

Boiling of water – Reversible (Water vapor can condense back into liquid water).

Matrix Matching Type:

15. Group-A

Group-B

A) Raw egg to boiled egg 1) Slow Change

b) Burning of fuels 2) Irreversible change

c) Cell division 3) Fast Change

d) Inflation of a ballon 4) Coal

A) a - 1, b - 3, c - 2, d - 1 B) a - 3, b - 2, c - 1, d - 3

C) a - 2, b - 4, c - 1, d - 3 D) a - 3, b - 1, c - 4, d - 2

Answer:C

Solution:

A) Raw egg to boiled egg 2) Irreversible change

b) Burning of fuels 4) Coal

c) Cell division 1) Slow Change

d) Inflation of a ballon 3) Fast Change

LEARNERS TASK

CONCEPTUAL UNDERSTANDING QUESTIONS

1. A change which cannot be reversed is called an

A) irreversible change B) reversible change C) Slow Change D) Fast Change

Answer:A

Solution:Irreversible changes cannot be undone, like burning or rusting.

2. In this change, the products formed can be converted back into their original forms.

A) irreversible change B) reversible change C) Slow Change D) Fast Change

Answer:B

Solution:Reversible changes can go back to their original state (e.g., melting and freezing water).

3. Burning of a match stick is a

A) slow change B)fast change C)reversible change D)none

Answer:B

Solution: It happens quickly, and it's irreversible.

4. A baby grows into an adult is a .

A) slow change B)fast change C)irreversible change D)none

Answer:A,C

Solution: Growth cannot be reversed.

5. Rusting of an iron is a.

A) slow change B)chemical change C)both a & b D)periodic change

Answer:C

Solution:Rusting is a slow oxidation process that alters the iron chemically

6. The change of seasons from summer to winter is a

A) slow change B)reversible change C)desirable change D)both a & C

Answer:D

Solution:A) Slow change,D) Desirable change – natural and expected

7. A change which can be reversed is called.

A) irreversible change B)reversible change C)desirable change D)none

Answer:B

Solution: The change can be undone (like melting wax).

8. A change which cannot be reversed is called.

A) slow change B)irreversible change C)nonperiodic change D)both b & c

Answer:B

Solution: A change which cannot be reversed is called Irreversible change

9. Curdling of a milk is a

A) irreversible change B)periodic change C)slow change D)both a & c

Answer:D

Solution:Curdling is permanent and occurs over time

10. Formation of flower from bud

A) irreversible change B) reversible change C)slow change D)both a & c

Answer:D

Solution:A bud cannot revert to its original state, and the process is gradual.

JEE MAIN LEVEL QUESTIONS

11. Burning of fuels (like LPG)

A) irreversible change B) fast change C)slow change D)both a & b

Answer:D

Solution:Irreversible because combustion cannot be undone (CO_2 and H_2O cannot turn back into fuel).

Fast because burning happens quickly.

12. Which of the following are the examples for fast changes

A) Volcano eruption B) Floods C) Landslides D) All

Answer:D

Solution:Volcano eruption, Floods, Landslides-All occur suddenly and rapidly.

13. Which of the following are the examples for irreversible fast changes

A) Bursting a balloon B) Volcano eruption C) Landslides D) All

Answer:D

Solution:Bursting a balloon: Fast and irreversible (cannot un-burst).

Volcano eruption/Landslides: Fast and permanently alter the landscape.

14. Which of the following are the examples for reversible slow changes

A) Ripening of fruits B) Volcano eruption C) Weathering D) Melting of Ice

Answer:D

Solution:Reversible: Ice can refreeze.

Slow: Melting occurs gradually (unlike boiling water, which is fast).

15. Which of the following cannot be felt or noticed by humans because they are

gradual and do not feel like much is happening

A) irreversible change B) fast change C) slow change D) both a & b

Answer:C

Solution: These changes (like rusting, aging, soil formation) happen so gradually that they often go unnoticed day to day.

JEE ADVANCED LEVEL QUESTIONS

Multi correct answer type:

16. Which of the following statement are correct?

A) Boiled egg is temporary change

B) Drying of clothes in the presence of sun light is a permanent change

C) Human growth is a periodic change.

D) Rusting of iron is a irreversible change.

Answer:D

Solution: Rusting is a chemical and irreversible change. The iron changes to iron oxide and cannot return to its original form by simple means.

Assertion and Reason Type:

A) Both Assertion and Reason are true, and Reason is the correct explanation for Assertion.

B) Both Assertion and Reason are true, but Reason is NOT the correct explanation for Assertion.

C) Assertion is true, but Reason is false.

D) Assertion is false, but Reason is true.

17. Assertion : Ripening of fruits is a slow change

Reason : Some changes take place very slowly

Answer:A

Solution: Assertion: "Ripening of fruits is a slow change" → True (It occurs gradually over days/weeks).

Reason: "Some changes take place very slowly" → True and directly explains why ripening is a slow change.

Comprehension Type:

A Change which can be reversed is called a reversible change. In this change, the products formed can be converted back into their original forms. A change which cannot be reversed is called an irreversible change. In this change, the products cannot be converted back into their original form.

18. Which of the following is Irreversible change

A) Stretching of a spring B) Boiling of water

C) Inflation of a balloon D) Death and decay of plants

Answer:D

Solution: Death and decay of plants: Irreversible (biological decomposition cannot be undone; dead plants cannot return to life).

Integer type:

19. How many phases an Ice converts on heating ?

Answer:2

Solution: Solid (Ice) → Liquid (Water) – Melting at 0°C

Liquid (Water) → Gas (Water Vapor) – Boiling at 100°C

Matrix Matching Type:

20. Group-A Group-B
 A) Irreversible change 1) Folding of paper
 b) Slow change 2) Floods
 c) Fast change 3) Milk in curd
 d) Reversible change 4) Rusting of iron

Answer:A-3,4,B-3,4,C-2,D-1

Solutions:

- Group-A Group-B
 A) Irreversible change 4) Rusting of iron,3) Milk in curd
 b) Slow change 4) Rusting of iron,3) Milk in curd
 c) Fast change 2) Floods
 d) Reversible change 1) Folding of paper

KEY

				TEACHING TASK					
				JEE MAINS LEVEL QUESTIONS					
1	2	3	4	5	6	7	8	9	10
A	B	D	B	A	D	B	B,C	C	B
				JEE ADVANCED LEVEL QUESTIONS					
11	12	13	14	15					
A,B,C	C	D	3 C						
				LEARNERS TASK					
				CUQ'S					
1	2	3	4	5	6	7	8	9	10
A	B	B	A,C	C	D	B	B	D	D
				JEE MAIN LEVEL QUESTIONS					
11	12	13	14	15					
D	D	D	D	C					
				JEE ADVANCED LEVEL QUESTIONS					
16	17	18	19	20					
D	A	D	2	A-3,4,B-3,4,C-2,D-1					