
14. CHANGES AROUND US - DESIRABLE & UNDESIRABLE CHANGES

SOLUTIONS

TEACHING TASK

JEE MAINS QUESTIONS

1. The spoilage of fruits during storage is an example of:
- | | |
|---------------------|-----------------------|
| A) Desirable change | B) Undesirable change |
| C) Periodic change | D) Reversible change |

Answer:B

Solution:Spoilage is unwanted → undesirable change.

2. Swinging of a simple pendulum is an example of:
- | | |
|-----------------------|------------------------|
| A) Periodic change | B) Non-periodic change |
| C) Undesirable change | D) Irreversible change |

Answer:A

Solution:Repeats at regular intervals → periodic change.

3. Rusting of iron is classified as: **(FA & SA- 3 Marks / 4 Marks)**
- | | |
|--------------------------------|-----------------------------|
| A) Desirable periodic change | B) Undesirable slow change |
| C) Desirable reversible change | D) Periodic physical change |

Answer:B

Solution:Rusting is slow, irreversible, and harmful.

4. The growth of a child is an example of:
- | |
|-------------------------------------|
| A) Desirable, irreversible change |
| B) Undesirable, reversible change |
| C) Periodic, reversible change |
| D) Non-periodic, undesirable change |

Answer:A

Solution:Growth is beneficial but cannot be reversed.

5. The eruption of a volcano is:
- | | |
|-------------------------------------|----------------------|
| A) Desirable change | B) Periodic change |
| C) Non-periodic, undesirable change | D) Reversible change |

Answer:C

Solution:It happens irregularly and causes damage.

6. The fermentation of sugar solution into alcohol is:
- | | |
|------------------------------|---------------------------------|
| A) Desirable chemical change | B) Undesirable change |
| C) Reversible change | D) Non-periodic physical change |

Answer:A

Solution: Desirable chemical change (in alcohol production).

7. Which of the following is a periodic natural change?
A) Change of seasons B) Earthquake C) Floods D) Rusting of iron

Answer: A

Solution: Seasons change periodically.

8. Flooding of rivers during heavy rainfall is: **(FA & SA- 5Marks / 8 Marks)**
A) Desirable change B) Non-periodic undesirable change
C) Periodic desirable change D) Reversible change

Answer: B

Solution: Not exactly periodic (depends on rain patterns), generally undesirable.

9. The ripening of fruits is:
A) Undesirable change B) Periodic change
C) Desirable slow change D) Reversible physical change

Answer: C

Solution: It's slow and useful (makes fruits edible)

10. Tides in the ocean are classified as: **(FA & SA- 2 Marks)**
A) Non-periodic changes B) Periodic changes
C) Irreversible undesirable changes D) Reversible slow changes

Answer: B

Solution: They occur at regular intervals due to the moon's gravitational pull.

JEE ADVANCED LEVEL QUESTIONS

Multi correct answer type:

11. Which of the following are examples of non-periodic irreversible changes?
A) Rusting of iron B) Earthquake
C) Melting of ice D) Souring of milk

Answer: A, B, D

Solution: Non-periodic → does not repeat at regular intervals

Irreversible → cannot be reversed back to original

A) Rusting of iron → Non-periodic + irreversible

B) Earthquake → Non-periodic + irreversible

C) Melting of ice → Reversible (can freeze back)

D) Souring of milk → Non-periodic + irreversible

12. In a hydroelectric power plant, water stored in a dam is converted into kinetic energy and then electrical energy. The changes involved are:
A) Desirable changes
B) Reversible changes
C) Periodic changes
D) Energy transformation without chemical change

Answer: A, D

Solution: A) Desirable changes → Yes, useful for electricity generation

- B) Reversible changes → No, energy transformation is one-directional
 C) Periodic changes → Not periodic, done as needed
 D) Energy transformation without chemical change → Yes, physical change only.

Assertion and Reason Type:

- A. Both A & R are true and R is the correct explanation of A
 B. Both A & R are true and R is not the correct explanation of A
 C. A is true, R is false.
 D. A is false, R is true.

13. **Assertion (A)** : The rising and setting of the Sun are periodic changes.
Reason (R) : Periodic changes are those which occur after irregular intervals of time.

Answer:C

Solution:Assertion (A): The rising and setting of the Sun are periodic changes.

True → Daily cycle, predictable.

Reason (R): Periodic changes are those which occur after irregular intervals of time.

False → Periodic changes occur at regular intervals, not irregular.

So A is true, R is false.

14. **Assertion (A)** : Breaking of a glass tumbler is an irreversible change.
Reason (R) : In an irreversible change, the original object cannot be restored back to its initial state.

Answer:A

Solution:Assertion (A): True → Once broken, can't go back to original glass perfectly without external repair (and even then, not exactly the same).

Reason (R): True → correct definition of irreversible change.

And R explains why breaking glass is irreversible.

Matrix Matching Type:

- | | |
|-------------------------------|-------------------------------|
| 15. Column-I (Process) | Column-II (Classification) |
| a) Rusting of iron | 1.Periodic change |
| b) Beating of heart | 2.Irreversible change |
| c) Souring of milk | 3.Reversible change |
| d) Freezing of water | 4. Undesirable change |
| A) a - 2, b - 1, c - 4, d - 3 | B) a - 4, b - 2, c - 3, d - 1 |
| C) a - 1, b - 2, c - 3, d - 4 | D) a - 3, b - 1, c - 4, d - 2 |

Answer:A

Solution:

- | | |
|----------------------|---|
| a) Rusting of iron | 2.Irreversible change,4. Undesirable change |
| b) Beating of heart | 1.Periodic change |
| c) Souring of milk | 4. Undesirable change,2.Irreversible change |
| d) Freezing of water | 3.Reversible change |

Comprehension Type:**DESIRABLE CHANGE:**

A change brought about by a person (or) the nature, which is useful, is called a desirable change.

Desirable change should be:

- a.Changes that are not harmful or toxic or any living organisms.
- b.Changes that are beneficial to all organisms are termed desirable changes.

UNDESIRABLE CHANGE:

A change brought about by a person (or) the nature, such that it has harmful effects is called an undesirable change.

16. A change that is useful and benefits living organisms is called:

- A) Undesirable change
- B) Desirable change
- C) Periodic change
- D) Reversible change

Answer:B

Solution:A useful and beneficial change is termed desirable.

17. Which of the following is a characteristic of a desirable change?

- A) Harmful to living organisms
- B) Toxic in nature
- C) Beneficial to all organisms
- D) Irreversible chemical change

Answer:C

Solution:Desirable changes are beneficial.

18. A change caused by nature or humans that has harmful effects is called:

- A) Desirable change
- B) Irreversible change
- C) Undesirable change
- D) Reversible change

Answer:C

Solution:Harmful effects → undesirable.

19. Which of the following is true about undesirable changes?

- A) They are useful and beneficial
- B) They have harmful effects
- C) They are periodic in nature
- D) They are always reversible

Answer:B

Solution:Undesirable changes have harmful effects.

20. Changes that are not harmful or toxic to living organisms are called:

- A) Irreversible changes
- B) Undesirable changes
- C) Desirable changes
- D) Non-periodic changes

Answer:C

Solution:Changes that are safe and beneficial are desirable changes

LEARNERS TASK

CONCEPTUAL UNDERSTANDING QUESTIONS(CUQ'S)

1. Respiration in living organisms is classified as:

- A) Desirable change
- B) Undesirable change
- C) Non-periodic change
- D) Periodic change

Answer:A

Solution:Respiration in living organisms is Essential for life → desirable change.

2. The rusting of iron is:

- | | |
|------------------------------|----------------------------------|
| A) Desirable slow change | B) Undesirable slow change |
| C) Desirable periodic change | D) Undesirable reversible change |

Answer:B

Solution:It damages iron objects and occurs slowly

3. The rotation of Earth causing day and night is:

- | | |
|---------------------|------------------------|
| A) Desirable change | B) Undesirable change |
| C) Periodic change | D) Non-periodic change |

Answer:C

Solution:Happens regularly every 24 hours.

4. The formation of alcohol from sugar by fermentation is:

- | | |
|--------------------------------|-----------------------------------|
| A) Undesirable chemical change | B) Desirable chemical change |
| C) Periodic physical change | D) Non-periodic reversible change |

Answer:B

Solution:In alcohol production → desirable chemical change.

5. The melting of wax on heating is:

- | | |
|-------------------------------|---------------------------------|
| A) Reversible physical change | B) Irreversible chemical change |
| C) Undesirable change | D) Periodic change |

Answer:A

Solution:Reversible physical change (solidifies on cooling).

6. Phases of the Moon occur:

- | | |
|---------------------------------------|---------------------------------|
| A) Irregular intervals → Non-periodic | B) Regular intervals → Periodic |
| C) Desirable change | D) Undesirable change |

Answer:B

Solution:Occur at regular intervals → periodic.

7. Freezing of water in a refrigerator is:

- | | |
|--------------------------------|------------------------------------|
| A) Desirable reversible change | B) Undesirable irreversible change |
| C) Periodic change | D) Non-periodic change |

Answer:A

Solution:Useful and reversible (ice can melt back to water).

8. Flooding of rivers due to heavy rain is:

- | | |
|------------------------------|------------------------------------|
| A) Desirable change | B) Non-periodic undesirable change |
| C) Periodic desirable change | D) Reversible physical change |

Answer:B

Solution:Happens irregularly and causes harm

9. Beating of the human heart is:

- A) Non-periodic change
C) Undesirable change

- B) Periodic desirable change
D) Reversible slow change

Answer:B

Solution: Happens regularly and is necessary for life.

10. Souring of milk during summer is:

- A) Desirable change
C) Periodic change

- B) Undesirable irreversible change
D) Reversible change

Answer:B

Solution: It cannot be reversed and spoils the milk.

JEE MAINS LEVEL QUESTIONS

11. Respiration in living organisms is an example of:

- A) Desirable irreversible change
C) Undesirable change

- B) Periodic reversible change
D) Non-periodic physical change

Answer:A

Solution: Necessary for life → Desirable; chemical reaction → Irreversible.

12. Which of the following is a desirable but irreversible change?

- A) Melting of ice
C) Freezing of water

- B) Digestion of food
D) Evaporation of alcohol

Answer:B

Solution: Digestion of food → desirable, irreversible chemical change.

13. An earthquake is best classified as:

(FA & SA- 2Marks)

- A) Periodic desirable change
C) Periodic physical change

- B) Non-periodic undesirable change
D) Desirable slow change

Answer:B

Solution: An earthquake is best classified as Not regular (non-periodic), harmful → Undesirable.

14. The formation of clouds by condensation of water vapor is:

(FA & SA- 3 Marks / 4 Marks)

- A) Periodic undesirable change
C) Non-periodic irreversible change

- B) Desirable reversible change
D) Undesirable chemical change

Answer:B

Solution: Part of water cycle → periodic (regular), reversible (evaporation reverses), desirable (for weather cycle).

15. The beating of the human heart is:

- A) Periodic desirable change
C) Undesirable chemical change

- B) Non-periodic change
D) Reversible slow change

Answer:A

Solution: Regular rhythm → periodic; necessary for life → desirable.

16. The rancidity of oil is:

- A) Desirable slow change B) Undesirable chemical change
C) Periodic change D) Desirable reversible change

Answer:B

Solution:The rancidity of oil is Undesirable spoilage; chemical change.

17. The burning of a candle is:
A) Periodic physical change B) Desirable irreversible change
C) Non-periodic chemical change D) Reversible change

Answer:B,C

Solution:A) Periodic physical change → Not periodic; it doesn't occur at regular intervals.

B) Desirable irreversible change → Burning is useful for light/heat, irreversible.

C) Non-periodic chemical change → It's a chemical change (combustion) and non-periodic.

D) Reversible change → Cannot revert wax + O₂ back to original candle easily.

18. The photosynthesis process in plants is:
A) Desirable chemical change B) Undesirable reversible change
C) Periodic undesirable change D) Non-periodic physical change

Answer:A

Solution:Photosynthesis in plants is a Chemical change, beneficial, produces food for plants and animals

19. The growth of hair and nails is:
A) Periodic undesirable change B) Desirable irreversible change
C) Non-periodic undesirable change D) Reversible periodic change

Answer:B

Solution:Growth of hair and nails is Continuous process, beneficial, irreversible

20. The corrosion of metals in moist air is: **(FA & SA- 5 Marks / 8 Marks)**
A) Desirable periodic change B) Undesirable slow change
C) Reversible chemical change D) Desirable reversible change

Answer:B

Solution:Slow chemical change, undesirable, damages metals.

JEE ADVANCED LEVEL QUESTIONS

Multi correct answer type:

21. The environmental changes caused by human activities that have harmful effects include:
A) Deforestation B) Use of renewable energy
C) Smoke from chimneys D) Exhaust from automobiles

Answer:A,C,D

Solution:A) Deforestation → harmful

B) Use of renewable energy → not harmful, beneficial

C) Smoke from chimneys → harmful (air pollution)

D) Exhaust from automobiles → harmful (air pollution)

22. Which of the following are desirable changes?

- A) Formation of curd from milk B) Photosynthesis in plants
C) Souring of milk D) Growth of crop

Answer:A,B,D

Solution:A) Formation of curd from milk → desirable (used as food)

B) Photosynthesis in plants → desirable (produces oxygen, food)

C) Souring of milk → undesirable (spoilage)

D) Growth of crop → desirable

Assertion and Reason Type:

A. Both A & R are true and R is the correct explanation of A

B. Both A & R are true and R is not the correct explanation of A

C. A is true, R is false.

D. A is false, R is true.

23. **Assertion (A)** : Digestion of food in the human body is a desirable change.

Reason (R) : Desirable changes are those which are useful or beneficial to living organisms.

Answer:A

Solution:Assertion (A): True, because it is useful for survival.

Reason (R):True, this correctly defines desirable changes.

R explains A? Yes, the reason correctly explains why digestion is desirable

24. **Assertion (A)** : Earthquakes are non-periodic changes.

Reason (R) : Non-periodic changes are those which repeat after regular interval

Answer:C

Solution:Assertion (A): True, they occur irregularly.

Reason (R): False, non-periodic changes do not repeat regularly

Matrix Matching Type:

25. **Column-I (Process)**

- a) Photosynthesis in plants
b) Floods in rainy season
c) Melting of ice
d) Rusting of iron

A) a - 1, b - 2, c - 3, d - 4

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

Column-II (Classification)

- 1.Desirable change
2.Non-periodic change
3.Reversible change
4.Undesirable change

B) a - 3, b - 4, c - 1, d - 2

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

Answer:A

Solution:

- a) Photosynthesis in plants
b) Floods in rainy season
c) Melting of ice
d) Rusting of iron

- 1.Desirable change
2.Non-periodic change
3.Reversible change
4.Undesirable change

26. **Column-I**

- a) Lunar eclipse
- b) Earthquake
- c) Tides at sea
- d) Volcanic eruption
- A) a - 1, b - 2, c - 3, d - 4
- C) a - 2, b - 3, c - 4, d - 1

Column-II

- 1. Periodic change
- 2. Non-periodic change
- 3. Desirable change
- 4. Undesirable change
- B) a - 3, b - 4, c - 1, d - 2
- D) a - 3, b - 1, c - 4, d - 2

Answer:A

Solution:

- a) Lunar eclipse
- b) Earthquake
- c) Tides at sea
- d) Volcanic eruption

- 1. Periodic change
- 2. Non-periodic change
- 3. Desirable change
- 4. Undesirable change

Comprehension Type:**Periodic Changes:**

The changes which occur again and again, after fixed intervals of time, are called periodic changes.

27. Changes that occur again and again at fixed intervals of time are called:

- A) Non-periodic changes
- B) Periodic changes
- C) Desirable changes
- D) Undesirable changes

Answer:B

Solution: Changes that repeat at fixed intervals → Periodic changes

28. Which of the following is an example of a periodic change?

- A) Earthquake
- B) Lunar phases
- C) Flooding of rivers
- D) Rusting of iron

Answer:B

Solution: Earthquake → non-periodic

Lunar phases → periodic

Flooding of rivers → not strictly periodic (varies)

Rusting of iron → not periodic

KEY

TEACHING TASK									
JEE MAINS QUESTIONS									
1	2	3	4	5	6	7	8	9	10
B	A	B	A	C	A	A	B	C	B
JEE ADVANCED LEVEL QUESTIONS									
11	12	13	14	15	16	17	18	19	20
A,B,D	A,D	C	A	A	B	C	C	B	C
LEARNERS TASK									
CONCEPTUAL UNDERSTANDING QUESTIONS(CUQ'S)									
1	2	3	4	5	6	7	8	9	10
A	B	C	B	A	B	A	B	B	B
JEE MAINS LEVEL QUESTIONS									
11	12	13	14	15	16	17	18	19	20
A	B	B	B	A	B	B,C	A	B	B
JEE ADVANCED LEVEL QUESTIONS									
21	22	23	24	25	26	27	28		
A,C,D	A,B,D	A	C	A	A	B	B		

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