

## 9.CHANGES AROUND US - DESIRABLE & UNDESIRABLE CHANGES SOLUTIONS

### TEACHING TASK

1. Food turning bad in summer is a . (FA & SA- 2 Marks)

A)undesirable change      B)desirable change  
C)periodic change      D)physical change

**Answer:A**

Solution:Food turning bad in summer is an undesirable change because:

It makes the food unsafe for consumption due to the growth of harmful microorganisms.

It leads to wastage of food, loss of money, and possible health risks.

Such changes are not useful and are considered undesirable.

2. Rusting of iron is a .

A)slow change      B)undesirable change      C)chemical change      D)all

**Answer:D**

Solution:It is a slow change (takes time), undesirable change (damages iron), and chemical change (new substance – rust – is formed).

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

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

**Answer:C**

Solution:Melting snow is a natural process that occurs regularly each summer as temperatures rise, making it a periodic change, meaning it happens at regular intervals.

4. The heat produced by the burning of petrol in the engines of cause is a .

A)desirable change      B)undesirable change      C)both a & b      D)physical change

**Answer:C**

Solution:The heat produced by the burning of petrol in the engines of cars or scooters is a desirable change. It is because it helps us to drive the cars and scooters. However, at the same time, the poisonous gases like carbon monoxide and nitric oxide are produced which are very harmful to health. This is an undesirable change.

5. Beating of heart is a .

A)periodic change      B)physical change  
C)undesirable change      D)desirable change

**Answer:A**

Solution:It occurs regularly and at fixed intervals, hence periodic.

6. Earth quakes are a .

A)non periodic change      B)irreversible change

**C)periodic change****D)physical change****Answer:A**

Solution:They do not occur at regular intervals; they are sudden and unpredictable.

**7. Changes that are not harmful or toxic or any living organisms are called**  
**(FA & SA- 3 Marks / 4 Marks)**

**A)periodic change****B)physical change****C)undesirable change****D)desirable change****Answer:D**

Solution:Definition:

Desirable changes are those that are beneficial, useful, or not harmful to living organisms or the environment.

Examples:

Ripening of fruits (provides nutritious food)

Photosynthesis in plants (produces oxygen)

Digestion of food (provides energy)

Contrast with undesirable changes:

Undesirable changes are harmful — e.g., rusting, spoilage of food, pollution — which cause damage or health risks.

Conclusion:

Since the question specifies changes that are not harmful or toxic to any living organisms, such changes are classified as desirable changes.

**8. Flooding of rivers in rainy seasons is an .**

**A)undesirable change B)physical change C)chemical change D)none****Answer:A**

Solution:Flooding of rivers in rainy seasons is an undesirable change because:

It causes destruction of crops, property, and infrastructure.

It leads to loss of human and animal lives.

It results in the spread of water-borne diseases.

It disrupts normal life and causes economic losses.

Although it is a natural event, its harmful effects make it undesirable.

**9. High and low tides at sea is a . (FA & SA- 5 Marks / 8 Marks)**

**A)periodic change****B)physical change****C)chemical change****D)nonperiodic change****Answer:A**

Solution:Definition of Periodic Change:

A periodic change is one that repeats itself at regular intervals of time.

High and Low Tides:

High and low tides occur in the sea due to the gravitational pull of the moon and the sun on the earth's oceans.



useful, is called a desirable change

**Statement-II: Rusting of articles of iron is a desirable change**

**Answer:C**

Solution:Statement I: True — A desirable change is one that is useful, whether caused by humans or nature.

Statement II: False — Rusting of iron is not desirable; it causes damage and is considered undesirable.

### Matrix Matching Type

13. a) Rusting of articles 1) Desirable change  
 b) Plants making their food in sunshine 2) Periodic Change  
 c) Falling of leaves from a tree 3) Undesirable change  
 d) Pendulum clock 4) Nonperiodic change  
 A) a - 3, b - 2, c - 4, d - 1 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:D**

Solution:

- |   |                       |
|---|-----------------------|
| a) Rusting of articles                  | 3) Undesirable change |
| b) Plants making their food in sunshine | 1) Desirable change   |
| c) Falling of leaves from a tree        | 4) Nonperiodic change |
| d) Pendulum clock                       | 2) Periodic Change    |

### Comprehension type:

The changes which occur again and again, after fixed intervals of time, are called periodic change. The changes which do not repeat themselves at regular intervals of time, are called non periodic changes.

14. Which of the following is a periodic change  
 A) Phases of moon B) High and low tides at sea C) Both A & B D) None

**Answer:C**

Solution:Phases of the moon and high and low tides occur regularly, so both are periodic change

15. Which of the following statements is true  
 A) Food turning bad in summer is an undesirable change.  
 B) Breaking of glass ware/glass article is an undesirable change.  
 C) Rusting of articles of iron is an undesirable change.  
 D) All the above

**Answer:D**

Solution:Food turning bad → undesirable (spoilage, health risk)

Breaking of glass → undesirable (loss of property)

Rusting of iron → undesirable (damage to articles)

All are undesirable changes.

**LEARNERS TASK****JEE MAINS LEVEL QUESTIONS**

1. A change brought about by a person (or) the nature, which is useful, is called a
- A)undesirable change                      B)desirable change  
C)periodic change                          D)physical change

**Answer:B**

Solution:A useful change is called a desirable change.

2. A change brought about by a person (or) the nature, such that it has harmful effects is called
- A)undesirable change                      B)desirable change  
C)periodic change                          D)physical change

**Answer:A**

Solution:A change with harmful effects is called an undesirable change.

3. The changes which occur again and again, after fixed intervals of time, are called (FA & SA- 3 Marks / 4 Marks)
- A)undesirable change                      B)desirable change  
C)periodic change                          D) non periodic change

**Answer:C**

Solution:Periodic changes are those that repeat at regular or fixed time intervals.

Examples:

Rotation of the Earth (causing day and night)

Revolution of the Earth around the Sun (causing seasons)

Motion of a pendulum in a clock

Since the question describes changes that occur again and again after fixed intervals of time, it matches the definition of a periodic change.

4. The changes which do not repeat themselves at regular intervals of time, are called
- A) Periodic Change                          B) Undesirable change  
C) Non periodic Change                      D) Desirable change

**Answer:C**

Solution:Changes that do not repeat at regular intervals are called Non periodic Change

5. Formation of curd from milk is a desirable change. It is because
- A) Curd is more easily digestible as compared to milk  
B) Curd is less digestible as compared to milk

**C) Milk is more digestible**

**D) None**

**Answer:A**

Solution: Formation of curd from milk is desirable because Curd is more easily digestible as compared to milk

**6. Which of the following statement is true**

**A) Phases of moon is a periodic changes**

**B) Land slides during rainy season are non-periodic changes**

**C) Earth quakes are non periodic changes**

**D) All the above**

**Answer:D**

Solution: Phases of moon → periodic (true)

Landslides during rainy season → non-periodic (true — not exactly regular)

Earthquakes → non-periodic (true — unpredictable)

**7. Changes that are beneficial to all organisms are termed as (FA & SA- 2 Marks)**

**A) Periodic Change**

**B) Undesirable change**

**C) Non periodic Change**

**D) Desirable change**

**Answer:D**

Solution: Desirable changes are those that are useful or beneficial to living organisms.

Examples:

Ripening of fruits (provides food)

Photosynthesis (produces oxygen and food)

Digestion (provides energy)

**8. Falling of leaves from a tree**

**A) undesirable change**

**B) desirable change**

**C) periodic change**

**D) Non periodic change**

**Answer:D**

Solution: Falling leaves from a tree is a non-periodic change because it doesn't happen at regular intervals. While trees shed leaves seasonally, the exact timing can vary depending on factors like weather conditions and the specific tree species. There's no set pattern that can be predicted with precision.

**9. Swinging of a clock pendulum is a**

**(FA & SA- 5 Marks / 8 Marks)**

**A) Periodic Change**

**B) Undesirable change**

**C) Non periodic Change**

**D) Desirable change**

**Answer:A**

Solution: Definition of Periodic Change:

A periodic change is one that repeats itself at fixed intervals of time.

Motion of a Pendulum in a Clock:

The swinging of a pendulum is carefully designed to repeat its motion at equal time intervals (e.g., each swing takes the same amount of time).

This regular motion is used in pendulum clocks to measure time accurately.

Reason for Periodicity:

The pendulum swings back and forth under the influence of gravity, and its time period is constant for small oscillations, making it a perfect example of a periodic change.

Not Undesirable/Non-periodic/Desirable:

It is not undesirable — it is useful for timekeeping.

It is not non-periodic — it is highly regular.

While it is useful, the term "desirable" is less specific; the key scientific classification here is periodic.

Conclusion:

The swinging of a clock pendulum is a periodic change because it repeats at regular time intervals

**10. Land slides during rainy season are**

**A) Periodic Change**

**B) Undesirable change**

**C) Non periodic Change**

**D) both B & C**

**Answer:D**

Solution:Undesirable change (B):

Landslides cause destruction of property, loss of life, and damage to the environment, making them harmful and undesirable.

Non-periodic change (C):

Landslides do not occur at fixed or regular intervals. They happen due to specific conditions like heavy rain, soil erosion, or earthquakes, but their occurrence is irregular and unpredictable.

Thus, landslides are both undesirable and non-periodic.

## **JEE ADVANCED LEVEL QUESTIONS**

**MCQS with more than one answer is correct :**

**11. Exhaust released from automobiles are**

**A) Non periodic change**

**B) Periodic Change**

**C) Undesirable change**

**D) Periodic Change**

**Answer:A,C**

Solution:Undesirable change:



Exhaust from automobiles releases harmful pollutants (CO, NO<sub>x</sub>, particulates) causing air pollution and health hazards.

Non periodic change:

The release of exhaust is not regular or fixed in timing — it depends on when vehicles are operated, so it is non-periodic.

It is not periodic because it does not occur at fixed intervals.

### **Statement Type Questions**

- 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.

- 12. Statement-I: Food turning bad in summer is an undesirable change**  
**Statement-II: A change brought about by a person (or) the nature, such that it has harmful effects is called an undesirable change**

**Answer:A**

Solution: Statement I: True — Food turning bad in summer is undesirable because it becomes unsafe to eat and causes wastage.

Statement II: True — It defines an undesirable change as one with harmful effects.

Explanation link: Statement II correctly explains why food spoilage is an undesirable change — because it has harmful effects (health risks, waste).

### **Match the following:**

- |   |                                      |
|---|--------------------------------------|
| <b>13. a) Change of seasons</b>                 | <b>1) Desirable change</b>           |
| <b>b) Food turning bad in summer</b>            | <b>2) Non periodic change</b>        |
| <b>c) Formation of manure</b>                   | <b>3) Periodic change</b>            |
| <b>d) Burning of sparkle (or) fire-crackers</b> | <b>4) Undesirable change</b>         |
| <b>A) a - 2, b - 1, c - 4, d - 3</b>            | <b>B) a - 3, b - 4, c - 1, d - 2</b> |
| <b>C) a - 2, b - 3, c - 4, d - 1</b>            | <b>D) a - 3, b - 1, c - 4, d - 2</b> |

**Answer:B**

Solution:

- |  |                        |
|--|------------------------|
| a) Change of seasons                     | 3) Periodic change     |
| b) Food turning bad in summer            | 4) Undesirable change  |
| c) Formation of manure                   | 1) Desirable change    |
| d) Burning of sparkle (or) fire-crackers | 2) Non periodic change |

### **Comprehension type:**

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

- 14. Which of the following is correct statement**



- A) Formation of curd from milk is desirable change  
 B) Food turning bad in summer is an undesirable change  
 C) Both A & B  
 D) None

**Answer:C**

Solution:A) Formation of curd from milk → Desirable change (useful, digestible)  
 B) Food turning bad in summer → Undesirable change (harmful)

**15. Which of the following leads to harmful effects**

- A) Food turning bad in summer      B) Exhaust from vehicles  
 C) Smoke from factories                D) All the above

**Answer:D**

Solution:

All listed cause harmful effects:

Spoiled food → health risks

Vehicle exhaust → air pollution

Factory smoke → pollution and health issues

**KEY**

**TEACHING TASK**  
**JEE MAIN & ADVANCED**

1	2	3	4	5	6	7	8	9	10
A	D	C	C	A	A	D	A	A	D
11	12	13	14	15					
B,D	C	D	C	D					

**LEARNERS TASK**  
**CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)**

1	2	3	4	5	6	7	8	9	10
B	A	C	C	A	D	D	D	A	D
11	12	13	14	15					
A,C	A	B	C	D					

