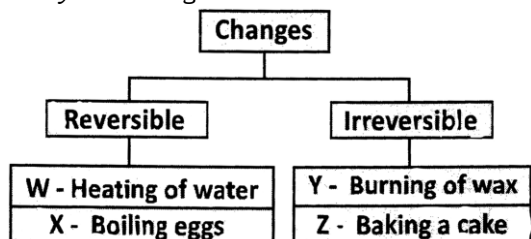


Changes around us

1. Study the table given below.



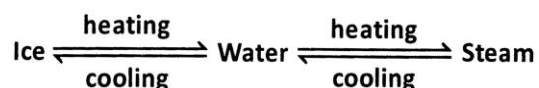
Which of the above changes is wrongly classified?

- (a) W (b) X
(c) Y (d) Z
2. Why is the rusting of iron termed as a chemical change?
- (a) It is a temporary change.
(b) It can be cleaned and the original substance can be recovered.
(c) It is a slow reaction.
(d) A new substance is formed.
3. Pasteurisation of milk is a



- (a) physical and reversible change.
(b) chemical and reversible change.
(c) chemical and irreversible change.
(d) neither physical nor chemical change.
4. Which of the following are desirable changes?
- | |
|---|
| (i) Drying of clothes
(ii) Growth of weeds
(iii) Cement getting hard when exposed to moisture
(iv) Desalination of sea water |
|---|
- (a) Only (i) and (ii) (b) Only (ii) and (iii)
(c) Only (i) and (iv) (d) Only (i), (ii) and (iv)

5. What is the change taking place in the following processes?

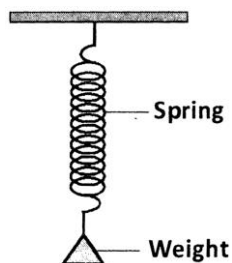


- (a) Irreversible, physical change
(b) Chemical change
(c) Reversible, physical change
(d) Reversible, chemical change

6. A Sheela cooked rice in a rice cooker. What kind of change took place?

(i) Irreversible change
(ii) Endothermic change
(iii) Natural change

- (a) Only (i) and (ii)
(b) Only (ii) and (iii)
(c) Only (i) and (iii)
(d) (i), (ii) and (iii)
7. Nitrogen reacts with hydrogen under high temperature and pressure and forms ammonia. Which type of change is undergone in the given example?
(a) A chemical change
(b) A physical change
(c) An exothermic reaction
(d) A natural change
8. Which of the following is NOT a feature of a physical change?
(a) It is reversible.
(b) It is temporary.
(c) No new substance is formed.
(d) The composition of the substance changes.
9. Choose the incorrect statement.
(a) The heating of sugar is a permanent change.
(b) Sugar decomposes to form charcoal.
(c) The crystallisation of sugar is a chemical change.
(d) The powdering of sugar is a physical change.
10. What kind of change do the batteries used in a wrist watch undergo?
(a) A physical change
(b) A periodic change
(c) A chemical change
(d) An endothermic change
11. If we suspend a weight using a spring, it stretches.



What type of a change is this?

- (a) Man-made
(b) Reversible
(c) Irreversible
(d) Both (A) and (B)

12. Which of these changes does a burning match stick undergo?

- | |
|---|
| (i) Endothermic reaction
(ii) Exothermic reaction
(iii) Chemical change |
|---|

- (a) Only (i) and (ii)
(b) Only (ii) and (iii)
(c) Only (i) and (iii)
(d) (i), (ii) and (iii)

13. What is the process by which a substance changes from solid to liquid state called?

- (a) Boiling (b) Condensation
(c) Freezing (d) Melting

14. On lowering the temperature, a liquid turns into a solid. What is this process called?

- (a) Condensation (b) Melting
(c) Freezing (d) Sublimation

15. Which of the following does NOT take place during the tearing of a paper?

- (a) Change of shape
(b) Change of size
(c) Change of substance
(d) All of the above

16. Why do we keep food in a refrigerator?

- (a) To save money
(b) To make food tastier
(c) To prevent food from getting spoiled
(d) It is fashionable to keep food in the refrigerator

17. What is a chemical reaction in which heat energy is liberated called?

- (a) An exothermic reaction
(b) A physical change
(c) An endothermic reaction
(d) A photochemical reaction

18. Which of the following is a natural, non-periodic change?

- (a) The heart beat of a human being
(b) The low and high tides
(c) The eruption of volcanoes
(d) The sunrise and sunset

19. In a physical change, which of the following takes place?

- | |
|--|
| (i) No new substance is formed.
(ii) The change is reversible.
(iii) The change is temporary |
|--|

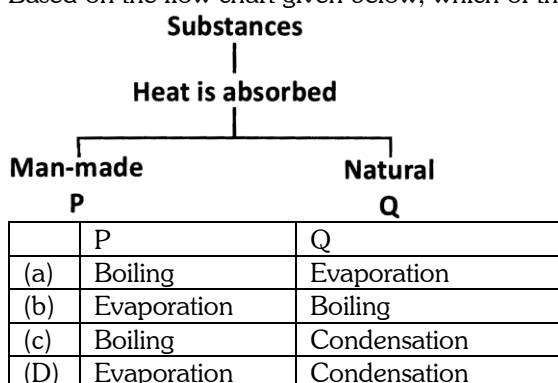
- (a) Only (i) and (ii)
(b) Only (ii) and (iii)
(c) Only (i) and (iii)
(d) (i), (ii) and (iii)

- 20.** The burning of coal in air is a
(a) physical change. (b) chemical change.
(c) reversible change. (d) periodic change.
- 21.** When you burn petrol, flames appear. What type of a reaction is this?
(a) An endothermic reaction
(b) An exothermic reaction
(c) A physical change
(d) A reversible reaction
- 22.** What is the process of heating a liquid to a high temperature and rapidly cooling it so that the bacteria is killed called?
(a) Pasteurization (b) Chlorination
(c) Bacterial disinfection (d) Sublimation
- 23.** Which of the following is a natural, periodic change?
(a) The occurrence of days and nights.
(b) The explosion of a bomb.
(c) The occurrence of an earthquake,
(d) Formation of snow.
- 24.** Identify the chemical change from the following.
(a) The melting of ice
(b) The heating of sugar crystals
(c) The freezing of water
(d) The dissolution of salt in water
- 25.** The magnetic properties of iron disappear when it is heated strongly. Which of these changes does this illustrate?
(a) A chemical change
(b) An irreversible change
(c) A physical change
(d) A periodic change
- 26.** What kind of change is the dissolving of sugar in water?
(a) Periodic change (b) Reversible change
(c) Irreversible change (d) Chemical change
- 27.** On heating, the colour of zinc oxide changes from white to yellow. What type of change is this?
(a) A physical change
(b) A chemical change
(c) A photochemical change
(d) An irreversible change
- 28.** Which of the following is a chemical change?
(a) The burning of magnesium wire
(b) The heating of an iron rod
(c) The heating of water
(d) The dissolving of salt in water
- 29.** What kind of change is the making of a ring from pure gold?
(a) An irreversible, chemical change
(b) An irreversible, physical change
(c) A reversible, chemical change
(d) A reversible, physical change

30. When water with sugar is stirred with a spoon, sugar is dissolved faster. Why does this happen?
- The spoon acts as a catalyst.
 - On stirring, the temperature increases.
 - Stirring increases the rate of interaction.
 - The attraction between the molecules of sugar increases.

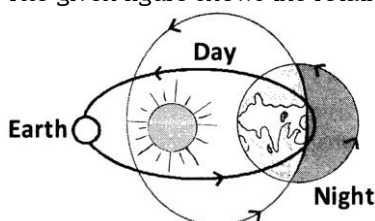
31. The germination of a seed is
- a physical, reversible change in which energy is produced.
 - a fast, desirable chemical reaction in which energy is released.
 - a slow, irreversible and desirable, chemical change.
 - A fast, irreversible and undesirable chemical change.

32. Based on the flow chart given below, which of the following is correctly represented by P and Q?



33. Identify the fast reaction from the following.
- The burning of a match stick
 - The seed changing into a big tree
 - The biodegradation of paper
 - The change of milk into curd

34. The given figure shows the rotation and revolution of the earth on its axis and around the sun respectively.

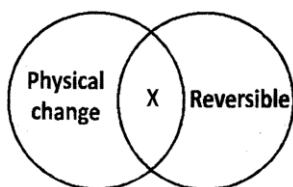


What kind of change does the earth undergo?

- Physical change
 - Chemical change
 - Periodic change
 - Undesirable change
35. Identify the periodic change from the following.
- The growth of plants
 - The occurrence of storms
 - The occurrence of floods
 - The revolution of the earth

36. Which one of the following is NOT an undesirable change?
- The spoiling of food
 - The growth of weeds
 - Over ripening of fruits
 - The curdling of milk

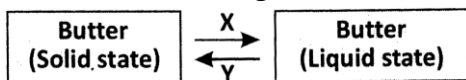
- 37.** Which of the following is NOT a physical change?
(a) The tearing of paper
(b) A magnet losing its magnetic property
(c) The rusting of iron
(d) An inflated balloon
- 38.** If you pour a few drops of petrol on your palm, you will feel cool as it evaporates. What type of reaction is this?
(a) Endothermic reaction
(b) Exothermic reaction
(c) Chemical reaction
(d) Slow reaction
- 39.** Which of the following statements is true of the changes when a mixture of iron powder and sulphur powder are heated?
(a) Iron and sulphur are called the reactants.
(b) Iron and sulphur form a solution.
(c) Iron and sulphur can be easily separated after the reaction.
(d) A new product is formed which has all the properties of iron and sulphur.
- 40.** Karuna wrapped some green gram pulses in a wet cotton cloth. She opened it after a couple of days and found small, white thread like structures on the seeds. What change did the pulses undergo?
(a) They have undergone a physical change.
(b) They became fresh as usual by washing and drying.
(c) They have undergone a chemical change.
(d) They have undergone a reversible, physical change.
- 41.** Identify a change that is NOT man-made and is irreversible.
(a) The burning of paper
(b) The stretching of a spring by a suspended weight
(c) Soil erosion due to floods
(d) The boiling of an egg
- 42.** Which of these is NOT a physical change?
(a) Sulphur dissolved in carbon disulphide
(b) Resin dissolved in alcohol
(c) The fermentation of cane juice
(d) The glowing of an electric bulb
- 43.** Observe the venn diagram given below.



Which of the following processes could 'X' be?

- (a) The rusting of iron
(b) The burning of wood
(c) The melting of wax
(d) Milk changing to curd

44. Given below is a change that occurs in butter.



Identify X and Y that cause change in the state of butter.

- (a) X - Heat lost, Y - Heat gained
 - (b) X-Heat gained, Y-Heat lost
 - (c) X - Release of energy,
Y - Absorption of energy
 - (d) X - Decrease in temperature,
Y - Increase in temperature
45. Which of the following changes is slow and periodic?
- (a) The rotation of the earth
 - (b) The rusting of iron
 - (c) The curdling of milk
 - (d) The evaporation of petrol
46. Which of the following changes results in the formation of a new substance?
- (a) Physical
 - (b) Chemical
 - (c) Reversible
 - (d) Periodic
47. Which of the following is an endothermic reaction?
- (a) The formation of curd from milk
 - (b) The production of gas when quicklime is added to water
 - (c) The opening of a soda bottle with production of gas
 - (d) The freezing of water
48. In the given figure, a boy is kicking a football.



What type of change is this?

- (a) Exothermic
 - (b) Endothermic
 - (c) Physical
 - (d) Chemical
49. If two substances interact to produce a change, they will do
- (a) so under any condition.
 - (b) only if they are not in close contact with each other.
 - (c) under any temperature.
 - (d) under the right conditions.
50. Which of the following is NOT true about a chemical change?
- (a) It involves reactants and products.
 - (b) It is an irreversible change.
 - (c) Energy changes take place in it.
 - (d) The reactants can be retrieved by physical methods.

Answers and Solutions

1. (b) On boiling, the composition of eggs changes.
2. (d) Iron reacts chemically with the oxygen and water vapour present in the air and forms a new product.
3. (d) Pasteurisation of milk does not involve any considerable physical or chemical change.
During this process, harmful bacteria are killed and a negligible % of constituents of milk undergo change.
4. (c) Changes that are useful to us are desirable changes. The drying of clothes and desalination of sea water are desirable changes.
5. (c) The change of ice into water and then into steam is a reversible and physical change.
6. (a) The cooking of rice requires heat. Once rice is cooked, we cannot get back the original raw rice. So, it is an irreversible, endothermic change.
7. (a) It has undergone a chemical change. A new substance (ammonia gas) having different properties is formed. It is an endothermic change requiring high temperature and pressure.
8. (d) The composition of a substance changes to form a new substance. Hence, it is not a feature of physical change.
9. (c) The crystallisation of sugar is a physical change.
10. (c) Batteries draw energy from the chemical changes taking place in it.
11. (d) When weight is removed, the spring comes to its original shape. It is man-made and a reversible change.
12. (b) Heat is evolved when a match stick is burnt as it has undergone a chemical change.
13. (d) The process in which the state of substance changes from solid to liquid is called melting.
14. (c) On decreasing the temperature, a liquid turns into a solid. This is called freezing.

- 15.** (c) The tearing of a paper shows a change in its shape and size but there is no change in the substance. Hence, it is a physical change.
- 16.** (c) The low temperature in a refrigerator prevents food from getting spoiled.
- 17.** (a) A chemical reaction in which heat energy is liberated is called an exothermic reaction.
- 18.** (c) The eruption of volcanoes is a natural, non- periodic change.
- 19.** (d) All the given changes occur in a physical change,
- 20.** (b) A change in composition occurs when coal is burnt in air. So, it is a chemical change.
- 21.** (b) Heat is released when you burn petrol. So, it is an exothermic reaction.
- 22.** (a) The process of heating a liquid to high temperature and rapidly cooling it in order to kill bacteria is called pasteurization.
- 23.** (a) The occurrence of days and nights is a natural, periodic change.
- 24.** (b) Sugar crystals on heating form new substance caramel and water vapour.
Hence, it is a chemical change.
- 25.** (c) The losing of magnetic property is only a physical change as there is no change in the chemical composition of the substance.
- 26.** (b) We can get back both sugar and water by simple distillation. So, it is a reversible change.
- 27.** (a) Change of colour is a physical change.
- 28.** (a) The burning of magnesium wire is a chemical change.
- 29.** (d) The making of a gold ring is only a change in the shape of gold. i.e. a physical change.
The ring can once again be melted to form pure gold.

- 30.** (c) Stirring helps to increase the interaction between sugar molecules and water molecules which causes sugar molecule in the solid to break from each other.
- 31.** (c) The germination of seed is a slow, irreversible and desirable, chemical change.
- 32.** (a) When a substance absorbs heat or heated continuously, it starts boiling. It is a fast, man-made process. When a substance absorbs heat from the sun or surroundings of its own and changes from liquid to gaseous state, it is called evaporation. Evaporation of water is a slow, natural process.
- 33.** (a) The burning of a match stick is a fast reaction.
- 34.** (c) The consequences of rotation and revolution are repeated at finite intervals of time. It is a periodic change.
- 35.** (d) The revolution of the earth is a periodic change.
- 36.** (d) The curdling of milk is a desirable change.
- 37.** (c) A new substance is formed when iron rusts. It is a chemical change.
- 38.** (a) When petrol it comes into contact with our skin, it absorbs our body heat and evaporates. It is an endothermic reaction.
- 39.** (a) The substances iron and sulphur which react to produce a new product are called reactants.
- 40.** (c) In the presence of moisture and air, pulses germinate. Germination is a chemical change.
- 41.** (c) Soil erosion due to floods is not man-made.
It is a natural and an irreversible change.
- 42.** (c) Fermentation of cane juice is a chemical change.
- 43.** (c) The melting of wax is a physical and reversible change.
- 44.** (b) Butter changes its state when it gains or loses heat.
- 45.** (a) The rotation of the earth takes 24 hrs. It is a slow and periodic change.

- 46.** (b) A chemical change results in the formation of a new substance.
- 47.** (a) The formation of curd from milk becomes faster if we use hot milk. It means that heat energy is absorbed by milk in the formation of curd. It is an endothermic reaction.
- 48.** (c) It is a physical change. There is change only in the position of the ball. Neither composition nor properties undergo any change.
- 49.** (d) Changes generally occur when two or more things interact with each other under the right conditions.
- 50.** (d) In a chemical change, the reactants cannot be retrieved by physical methods.