



CHEMISTRY

BOOKS - HT Olympiad Previous Year Paper

CHANGES AROUND US

Multiple Choice Question

1. Which of the following features are related to evaporation of water?

(i) Occurs at 100°C only (ii) Bubbles are formed
(iii) Slow process (iv) Increases with increase in
surface area

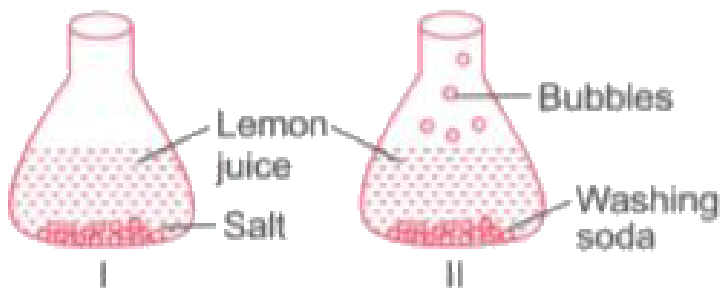
- A. (i) and (iv) only
- B. (i), (ii) and (iii) only
- C. (ii), (iii) and (iv) only
- D. (iii) and (iv) only

Answer: D



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2. Sudha took lemon juice in two flasks. She put salt in flask 1 and washing soda in flask II. She observed lots of bubbles in flask II but nothing in flask I. What could be the reason for this?



A. In flask I, a chemical change takes place.

B. In flask II, a chemical change takes place

and bubbles of carbon dioxide are seen.

C. In flask II, a physical change takes place producing lots of bubbles.

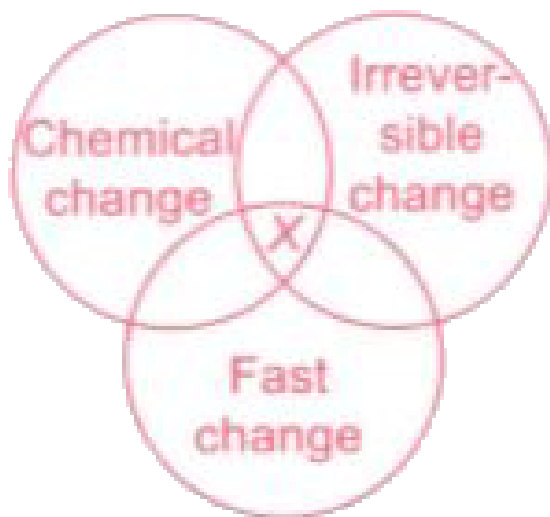
D. In flask I, salt reacts with lemon juice and forms a new compound.

Answer: B



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3. Study the given Venn diagram carefully



The centre point X represents

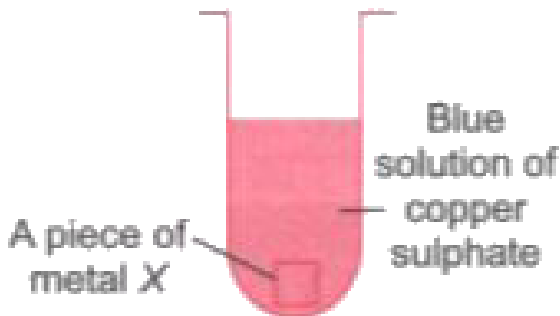
- A. Rusting
- B. Dissolving salt in water
- C. Boiling of an egg

D. Bursting of crackers.

Answer: D

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4. A metallic piece (X) is dropped into copper sulphate solution. After some time, the blue colour of the solution changes to green.



Metal X and the change which has occurred are respectively

A. Aluminium and physical, reversible change

B. Magnesium and physical, irreversible change

C. Iron and chemical, reversible change

D. Iron and chemical, irreversible change.

Answer: D



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5. Read the given passage and fill in the blanks by selecting an appropriate option. Iron nails when new are grey and bright, When exposed to __ (i). they get covered with a ___ (ii) coating. This process is called ___ (iii) and it is a ___ (iv) change.

	(i)	(ii)	(iii)	(iv)
(A)	Moist air	Grey	Corrosion	Chemical, reversible
(B)	Air and water	Reddish brown	Rusting	Chemical, irreversible
(C)	Oxygen in air	Green	Rancidity	Physical, irreversible
(D)	Nitrogen in air	Reddish brown	Galvanisation	Chemical, irreversible



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6. Mark the incorrect statement

A. Melting of wax is a physical change while burning of wax in a candle is a chemical change.

B. Metals expand on heating while contract on cooling. Both are physical changes.

C. Composition of matter changes during a chemical change while it remains same

during a physical change

D. High and low tides in sea are the examples of non-periodic changes while growth of a tree is a periodic change.

Answer: D



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7. Few changes are given below. Mark the correct option from the given codes.

(i) Milk is set to form curd. (ii) Batter is

steamed to form idlis. (iii) Water is boiled to form steam. (iv) Salt is dissolved in water to form solution.

	(i)	(ii)	(iii)	(iv)
(A)	Physical	Physical	Chemical	Chemical
(B)	Physical	Chemical	Physical	Chemical
(C)	Chemical	Chemical	Physical	Physical
(D)	Physical	Chemical	Chemical	Physical



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8. Nitu mixed some iron filings with sulphur powder in a China dish. She heated the contents of China dish. What did she observe during the experiment?

A. There was no difference in the contents of China dish before and after heating.

B. Before heating, iron filings and sulphur powder could be seen separately but after heating the contents became black.

C. Before heating, the iron filings and sulphur powder could not be seen separately.

D. Before heating, the contents were black and after heating, iron filings and

sulphur could be seen separately.

Answer: B



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9. What is common among the following phenomena?

1. Change of seasons 2. Blooming of flowers 3. Growth of nails and hair 4. Growth of a plant from seed

A. All are physical changes.

B. All are slow changes.

C. All are undesirable changes.

D. All are reversible changes.

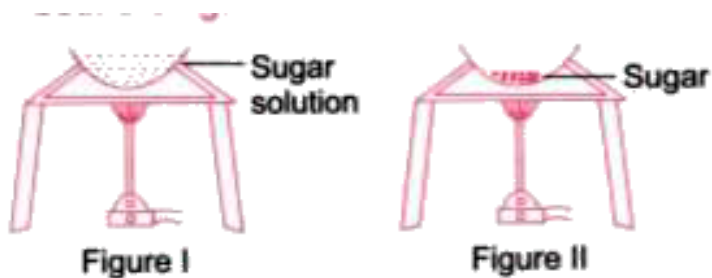
Answer: B



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10. Observe the two figures given below. In figure I a solution of sugar in water is heated and in figure II, only sugar is being heated. What changes are taking place in both the

figures I and II?



A. In figure I, physical change is taking place while in figure II a chemical change is taking place.

B. In figure I, a chemical change is taking place while in figure II a physical change is taking place.

C. In both figures, physical changes are taking place.

D. In both figures, chemical changes are taking place.

Answer: A



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11. Identify the reversible and irreversible changes among the following:

(i) Heating of the coil of an electric heater (ii)

Magnetisation of a needle Soil erosion (iv)

Expansion of a metallic rim (v) Dissolving

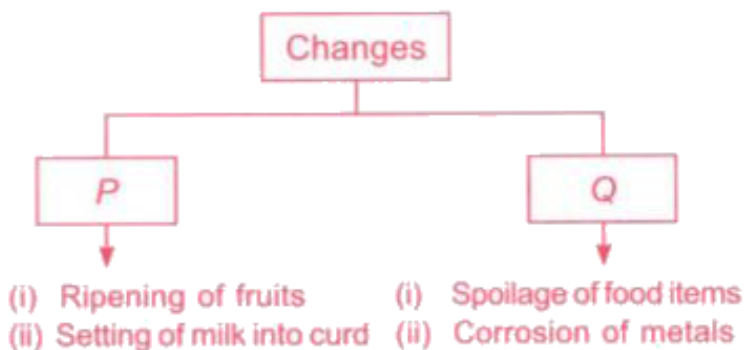
baking soda in water

	Reversible	Irreversible
(A)	(ii), (iii)	(i), (iv), (v)
(B)	(i), (iii), (v)	(ii), (iv)
(C)	(i), (ii), (iv)	(iii), (v)
(D)	(iv), (v)	(i), (ii), (iii)



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12. Study the given flow chart carefully,



Which of the following is correct?

- | P | Q |
|--------------------------|----------------------|
| (A) Periodic changes | Non-periodic changes |
| (B) Irreversible changes | Reversible changes |
| (C) Fast changes | Slow changes |
| (D) Desirable changes | Undesirable changes |



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13. A potter shapes pots out of clay (Process 1).

He then bakes the pots in an oven (Process 2).

Which of the following statements is correct?

A. Process 1 is a reversible, physical change

while process 2 is an irreversible,

physical change.

B. Process 1 is an irreversible, physical

change while process 2 is an irreversible,

chemical change.

C. Process 1 is a reversible, physical change while process 2 is an irreversible, chemical change.

D. None of these

Answer: C



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14. Match column with column II and select the correct option from the given codes.

	Column I		Column II
P.	Digestion of food in our body	(i)	Fast change
Q.	Earthquake	(ii)	Natural, desirable change
R.	Bursting of balloon	(iii)	Natural, undesirable change
S.	Change of seasons	(iv)	Slow change

A. P-(iv), Q-(ii), R-(iii), S-(i)

B. P-(iii), Q-(iv), R-(ii), S-(i)

C. P-(ii), Q-(i), R-(iv), S-(iii)

D. P-(iv), Q-(iii), R-(i), S-(ii)

Answer: D



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15. Consider the following phenomena :

(i) Forest fire (ii) Growth of plants (iii) Low and high tides (iv) Occurrence of a rainbow (v) Earthquakes (vi) Opening of a morning glory flower

Which of the above phenomena can be classified as periodic changes?

A. (i), (ii) and (iii) only

B. (i), (ii) and (v) only

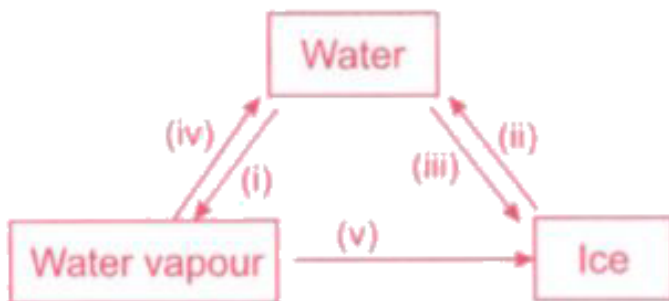
C. (iv), (v) and (vi) only

D. (iii) and (vi) only

Answer: D

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16. Observe the given figure carefully and select the correct statement.



A. Processes (iii) and (iv) involve absorption of heat energy.

B. Process (v) involves condensation and freezing.

C. Processes (i) and (iii) evolve heat energy

D. Process (v) absorbs a lot of heat energy

Answer: B



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17. Swati classified a few changes occurring around us as shown in the table.

S.No.	Changes	Type
1.	Sharpening of pencil	Physical, reversible
2.	Evaporation of water	Physical, irreversible
3.	Photosynthesis	Chemical, irreversible
4.	Rusting of iron	Chemical, reversible

Which of the changes is/are classified correctly?

A. 2 and 3 only

B. 3 and 4 only

C. 1 and 4 only

D. 3 only

Answer: D



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18. Read the given statements and mark the correct option

Statement 1: While fixing a metal rim on a wooden wheel of a cart, the size of the metal rim is kept slightly smaller than that of the

wooden wheel.

Statement 2: On heating, the rim expands and fits onto the wheel.

A. Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.

B. Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.

C. Statement 1 is true and statement 2 is false.

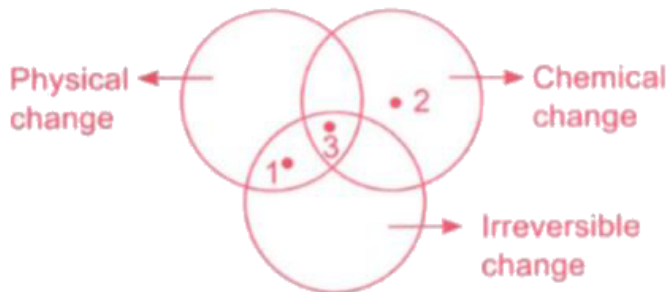
D. Both statements 1 and 2 are false.

Answer: A



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19. Study the given Venn diagram and identify points 1, 2 and 3.

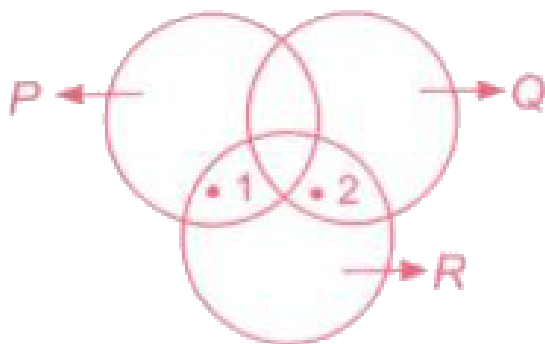


	1	2	3
(A)	Melting of ice	Boiling of rice	Burning of a candle
(B)	Burning of paper	Rusting of iron	Cutting of fruits
(C)	Breaking of a glass	Baking a cake	Burning of LPG in kitchen
(D)	Tearing of paper	Evaporation of water	Making lemonade



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20. Study the given Venn diagram.



If 1 represents slaking of lime and 2 represents decomposition of calcium carbonate then P, Q and R could be respectively

A. Reversible change, irreversible change and physical change

B. Periodic change, non-periodic change
and physical change

C. Exothermic change, endothermic change
and chemical change

D. Endothermic change, exothermic change
and chemical change.

Answer: C



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