

DR. HOMI BHABHA BALVAIDNYANIK COMPETITION

HINTS & SOLUTIONS

1. (A)
(P) Gas - Molecules can move freely
(Q) Solid- Tightly packed
(R) Liquid – Loosely packed.

2. (D)
We should conserve water .

3. (A)
Evaporation is the process by which water evaporates from lakes rivers ponds etc.
Condensation is the process in which evaporated water converts into liquid form (rain drops)

5. (C)
Rusting of iron - Chemical change and irreversible change
In this change iron gets converted into brown powdery substances, due to effect of moistured air and oxygen which can not be converted back to iron

8. (C)
Absorption tendency of dark cloured clothes are more than lighter clothes. Hence they keeps us warm in winter.

10. (B)
By boiling

11. (D)
Plastic bags can not be decompose easily, hence these causes soil and water pollution.

13. (D)
TRANSPARENT – Light can pass easily
TRANSLUCENT – Light can pass partially
OPAQUE - Light can not pass

15. (C)
When the storm clears, the nirtrogen oxides are still left in the air after the lighting strikes. So when the nitrogen oxides are in the sunlight with other atoms they create chemical reacting and oxides turns into ozone.

19. (A)
Separating funnel is used in the separation of two immiscible liquids having the difference in density.
23. (A)
Matter occupies space.
26. (A)
Both statements are correct and statement 2 is correct explanation of statement 1
37. (D)
During cooking Chemical energy converts into heat energy
39. (A)
Malleability is a property of metal due to which they can be beaten with hammer into very thin sheets without breaking
40. (D)
Rayon is made by the modification of cellulose with the help of chemicals, so rayon (x) is man made.
(y) silk is natural thread which comes under the category of animal fibres
50. (C)
To increase its shelf life (life time)
51. (A)
The chemical name of marble is Calcium Carbonate (CaCO_3)
54. (D)
Given picture shows different types of energies (like hydropower energy, wind energy, nuclear energy etc.), production of energy and conversion of energy.
56. (B)
When the bottle was opened, pressure in bottle gets released and excess CO_2 starts escaping from the water molecules.
61. (B)
The transparent , thick and invisible envelope of air in our surroundings , called atmosphere.
All the water on the earth surface included ocean, seas , lakes,ponds etc. constitute hydrosphere
The rigid outer part of the earth consisting of the crust is lithosphere, so the order is
Lithosphere < Hydrosphere < Atmosphere

62. (C)
Coal mainly consists of carbon so on burning coal large amount of CO_2 is released.
68. (D)
Allotropes of carbon are :
Diamond, Graphite & coal
73. (A)
Molecules of liquid absorbs latent energy and converts into gaseous state without changing the temperature .
78. (C)
Nitrogen displaces the oxygen in our food packaging which prevent the oxidation of foods due to inavailability of oxygen.
82. (D)
Recycling of plastic involves collecting, sorting and processing plastic waste with an aims to reuse the material in manufacturing of other products
88. (C)
Food can is made up of Tin because Tin is less reactive metal
91. (D)
Rags is used more proportional in paper pulp to strengthen the currency notes.
94. (B)
NaCl solution is transparent or colourless.
Iodine solution is violet in colour.
Copper sulphate solution is blue in colour.
100. (D)
Metal detector present in spherical frame is used to detect metallic things for security purposes.