

Our Environment

1. Manisha took some vinegar in a test tube and added some baking powder to it. Then she lit a matchstick and brought it near the mouth of the test tube. The flame of matchstick got extinguished.

Which of the following is correct conclusion regarding the given experiment?

- (a) Carbon dioxide gas does not support burning.
(b) Air contains carbon dioxide.
(c) Oxygen gas present in the air is necessary for burning.
(d) Oxygen gas can extinguish fire.

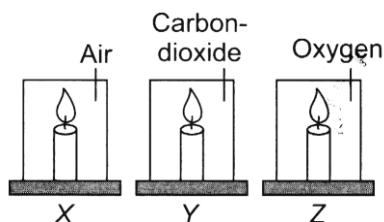
2. Read the following statements.

- (i) Air dissolved in water cannot be removed from it.
(ii) Density of air decreases with increasing altitude.
(iii) Air is an element that surrounds the Earth and makes it hospitable for living organisms.
(iv) Air helps in pollination of several flowers and in the dispersal of seeds.

Which of the above statements are correct?

- (a) (i) and (ii) only (b) (ii) and (iv) only
(c) (i) and (iii) only (d) (iii) and (iv) only

3. Three burning candles are covered with glass jars as shown in figures. Equal amount of air, CO_2 and O_2 are present in jars X, Y and Z, respectively. Arrange the candles in decreasing order of the time for which they will continue to burn.



- (a) Z, X, Y (b) X, Y, Z
(c) X, Z, Y (d) Z, Y, X

4. Which of the following actions will help in reducing pollution?

- (i) Using induction cooker instead of LPG stove for cooking food.
(ii) Using unleaded petrol in cars
(iii) Spraying pesticides on plants to kill pests
(iv) Carrying cotton or jute bags for shopping instead of polybags

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

5. Read the given statements and select the correct option.

Statement 1: The level of groundwater below the surface of Earth at a given place is known as the water table.

Statement 2: Extensive use of groundwater in cities for domestic and industrial purposes is resulting in lowering of water table.

- (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 but statement 2 is false.
(d) Both statements 1 and 2 are false.

6. Match column I with column II and select the correct option from the codes given below.

Column I	Column II
(A) Floods	(i) Aquifers
(B) Groundwater	(ii) Salt water
(C) Ocean	(iii) Rain
(D) Precipitation	(iv) Dirt and water vapour
(E) Clouds	(v) Excess rain

- (a) (A)-(i), (B)-(ii), (C)-(iii), (D)-(iv), (E)-(v)
(b) (A)-(v), (B)-(i), (C)-(ii), (D)-(iii), (E)-(iv)
(c) (A)-(i), (B)-(v), (C)-(iii), (D)-(ii), (E)-(iv)
(d) (A)-(v), (B)-(i), (C)-(iii), (D)-(ii), (E)-(iv)

7. Which of the following statements are true about acid rain?

(i) Acid rain has harmful effects on the living beings.

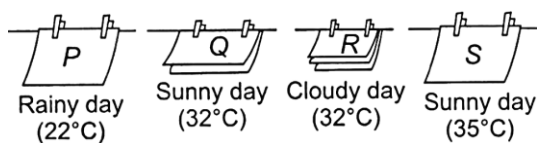
(ii) Acid rain mainly comprises of H_2SO_4 and HNO_3 .

(iii) Greenhouse gases are mainly responsible for causing acid rain.

(iv) Acid rain causes damage to buildings.

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

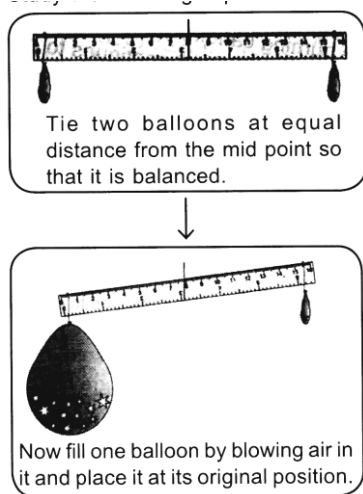
8. Four identical wet towels were hung out on clothesline in different manner to dry under different conditions.



Arrange them in order, beginning with the towel that would take the shortest time to dry.

- (a) P, Q, R, S (b) P, R, Q, S
(c) R, P, Q, S (d) S, Q, R, P

9. Study the following experiment.



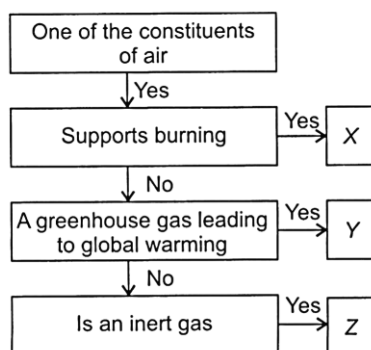
What could be inferred from the above experiment?

- (a) Air contains dust particles.
(b) Air does not have fixed volume.
(c) Air has mass.
(d) Air is colourless.

10. The gas X is only about 20 parts out of 100 parts of air in the atmosphere. It is needed for decomposition of organic matter. The gas X is

- (a) Carbon dioxide (b) Water vapour
(c) Oxygen (d) Nitrogen.

11. Refer to the given flow chart and identify X, Y and Z.

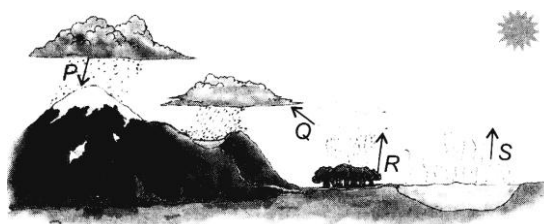


	X	Y	Z
(a)	O_2	CO_2	He
(b)	CO_2	O_2	N_2
(c)	N_2	CO_2	O_2
(d)	O_2	He	CO_2

12. Which of the following is a correct match?

- (a) Waste from farmyards and food courts - Domestic waste
(b) Pesticides, pharmaceuticals and heavy metal sludge - Biodegradable waste
(c) Peels of fruits and vegetables, tea leaves - Organic waste
(d) Mineral wastes from mining and rubber waste - Kitchen waste

13. Refer to the diagrammatic representation of water cycle and identify P, Q, R and S.



- (a) P - Condensation; Q - Precipitation; R - Transpiration; S - Evaporation
(b) P - Precipitation; Q - Condensation; R - Transpiration; S - Evaporation
(c) P - Precipitation; Q - Condensation; R - Evaporation; S - Transpiration
(d) P - Precipitation; Q - Evaporation; R - Condensation; S - Transpiration

14. Kanika noticed that her potted plant was not growing healthily. She put few earthworms into the pot. After a few weeks, she noticed that her plants looked healthier. What could be the possible reason for this?

- (a) The earthworms ate up the pests in the soil.
(b) The earthworms helped the plant to take in water,
(c) The earthworms allowed the plant to make food faster,
(d) The earthworms increased the air and nutrient content of the soil.

15. Match column I with column II and select the correct option from codes given below.

Column I	Column II
(A) Tea leaves	(i) Farmer's friend

(B) Earthworm gas	(ii) Greenhouse
(C) Microorganisms compost	(iii) Changes into
(D) Polythene bags	(iv) Cannot be changed into compost
(E) Methane	(v) Bacteria

- (a) (A)-(iii); (B)-(i); (C)-(v); (D)-(iv); (E)-(ii)
 (b) (A)-(iii); (B)-(v); (C)-(i); (D)-(iv); (E)-(ii)
 (c) (A)-(ii); (B)-(v); (C)-(i); (D)-(iii); (E)-(iv)
 (d) (A)-(ii); (B)-(i); (C)-(iv); (D)-(v); (E)-(iii)

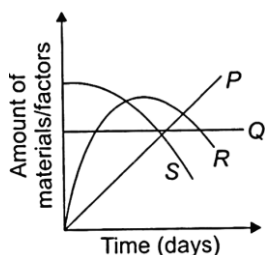
Achievers Section (HOTS)

16. The different steps of vermicomposting are given below randomly.
 (i) Spread sand on the floor of the pit
 (ii) Place red worms in the pit
 (iii) Cover with a grass
 (iv) Sprinkle water to keep it moist
 (v) Dig a pit in a suitable place
 (vi) Add vegetable peels and fruit waste in the pit

Which of the following represents the correct sequence of steps?

- (a) (v) → (vi) → (i) → (iii) → (ii) → (iv)
 (b) (v) → (i) → (vi) → (iii) → (iv) → (ii)
 (c) (v) → (i) → (iii) → (vi) → (ii) → (iv)
 (d) (v) → (ii) → (iii) → (iv) → (i) → (iii)

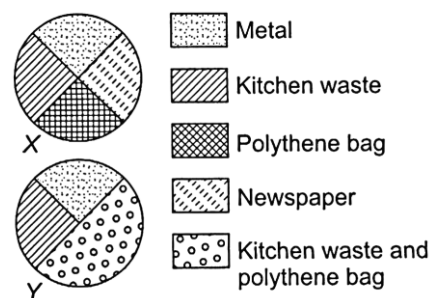
17. Dustbin containing dis-carded material was left uncovered for some- time. Amount of different materials and factors related to them changed during these days which were plotted in the given graph.



Select the correct option regarding this.

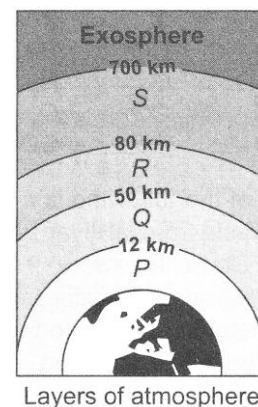
- (a) Q could be tin can.
 (b) P could be decomposer microbes and R could be fruits and vegetables peel.
 (c) P could be organic waste whereas S could be discarded syringe.
 (d) All of these

18. Refer to the given pie charts based on waste segregation methods X and Y and



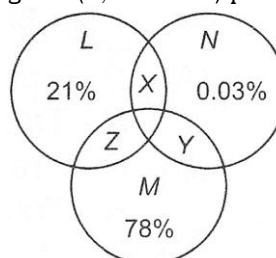
- (a) Method Y is more environment conscious because polythene bags are disposed with kitchen waste.
 (b) Method X is more environment conscious because polythene bags are disposed off separately.
 (c) Method Y is more environment conscious because newspapers are not generated.
 (d) None of these

19. Refer to the given figure representing different layers of Earth's atmosphere and I select the incorrect statement regarding it.



- (a) Wind, storm and snow are formed in P layer of atmosphere.
 (b) Q is the atmospheric layer where most clouds are formed as 99% of the water vapours are present in this layer.
 (c) In atmospheric layer R meteors burn up.
 (d) Atmospheric layer S reflects radio waves.

20. Study the given Venn diagram and identify the gases (L, M and N) present in our atmosphere.



Select the incorrect option regarding characteristics X, Y and Z of these gases.

(a) X- Support life on Earth

(b) Y- Inhibit combustion

(c) Z - Form compounds that are components of acid rain

(d) None of these

Answer key

1. A	2. B	3. A	4. D	5. B
6. B	7. D	8. D	9. C	10. C
11. A	12. C	13. B	14. D	15. A
16. B	17. A	18. B	19. B	20. D

HINTS & EXPLANATIONS

1. (a): In the given experiment, vinegar reacts with baking powder and produces carbon dioxide gas which extinguishes fire.
2. (b): Air dissolved in water can be removed from it by boiling. Air is a mixture of gases that surrounds the Earth and makes it hospitable for living organisms.
3. (a): Oxygen is necessary for burning. Air also supports burning as it contains oxygen. It is a mixture of gases i.e. nitrogen, oxygen, noble gases, carbon dioxide and water vapour. Hence amount of oxygen present in jar Z is higher as compared to that present in jar X. Jar Z will therefore support burning of candle for a longer time than jar X. Carbon dioxide does not support burning and extinguishes fire.
4. (d): Spraying of pesticides on plants to kill pests may cause water pollution. The runoff from pesticide laden crop fields enters adjacent water bodies and causes water pollution.
5. (b) Not Available
6. (b) Not Available
7. (d): When gases like sulphur dioxide and nitrogen dioxide mix with the water vapour in the air, they form H_2SO_4 and HNO_3 . These acids mix with rain and fall on the ground as acid rain. Acid rain is very harmful as it can damage plants, buildings, aquatic life, soil and human health.
8. (d) Not Available
9. (c): Air has mass which makes the balloon heavier and bends the scale to the side on which the heavier balloon is hung.
10. (c): Air is a mixture of gases, mainly containing nitrogen (about 78% by volume) and oxygen (about 21 %). Oxygen is needed for decomposition of organic matter.
11. (a) Not Available
12. (c) Not Available
13. (b) Not Available
14. (d): Earthworms mix upper layers of the soil with the lower layers while making -burrows. Their movement also aerates the soil. They also breakdown the organic waste present in soil, thus releasing the nutrients into the soil. Earthworm excreta is also rich in nutrients.
15. (a) Not Available
16. (b) Not Available
17. (a) Not Available
18. (b): Polythene bag is non-biodegradable material i.e. cannot be broken down by decomposers while kitchen waste is biodegradable material i.e. can be broken down to simpler, harmless substances.
In the given pie chart, method X is more environment conscious because non-biodegradable materials are disposed off separately.
19. (b): In the given figure, labelled parts P, Q R and S refer to troposphere, stratosphere, mesosphere and thermosphere, respectively.
Water vapour and dust constitute clouds in troposphere layer.
20. (d): L, M and N are oxygen (21%), nitrogen (78%), and carbon dioxide (0.03%), respectively. Oxygen and carbon dioxide gases support life on Earth (X). Oxygen is required by all living organisms for breathing. CO_2 is used by green plants for manufacture of food that is directly or indirectly used by different animals to stay alive. CO_2 is also a green- house gas that prevents heat from escaping Earth's surface and keeps the temperature of Earth hospitable.
Both nitrogen and carbon dioxide gases do not support combustion (V). Oxides of nitrogen react with water vapour present in air to form nitric acid which fall down with rain on Earth's surface as acid rain (Z).