

1. In the decomposition of lead (II) nitrate to give lead (II) oxide, nitrogen dioxide and oxygen gas, the coefficient of nitrogen dioxide (in the balanced equation) is
(a) 1 (b) 2 (c) 3 (d) 4

2. Which element is used in the synthesis of proteins?
(a) Hydrogen (b) Oxygen (c) Nitrogen (d) Carbon dioxide

Following questions consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

- (a) Both 'A' and 'R' are true and 'R' is correct explanation of the Assertion.
(b) Both 'A' and 'R' are true but 'R' is not correct explanation of the Assertion.
(c) 'A' is true but 'R' is false.
(d) 'A' is false but 'R' is true.

3. Assertion: Polythene bags and plastic containers are non-biodegradable substances.
Reason: They can be broken down by microorganisms in natural simple harmless substances.
4. Assertion: The concentration of harmful chemicals is least in human beings.
Reason: Man is at the apex of the food chain.
5. A shiny brown-coloured element 'X' on heating in the air becomes black. Name the element 'X' & the black-coloured compound formed.
6. (a) What is peristaltic movement?
(b) 'Stomata remain closed in desert plants during daytime'. How do they do photosynthesis?
7. What help can we offer to reduce the problem of waste disposal? Give any two methods.
8. Zinc liberates hydrogen gas when reacted with dilute hydrochloric acid, whereas copper does not. Explain why?
9. (a) Why is there a difference in the rate of breathing between aquatic organisms and terrestrial organisms? Explain
(b) Draw a diagram of human respiratory system and label – pharynx, trachea, lungs, diaphragm and alveolar sac on it.
10. **CASE STUDY**
Corrosion is the deterioration process of a material due to reactions with its surroundings. Corrosion is a natural process. Just like water flows to the lowest

level, all the natural processes tend toward the lowest possible energy states. Corrosion can be defined in many ways. Some definitions are very narrow and deal with a specific form of corrosion while others are quite broad and cover many forms of deterioration. Corrosion's effects in our daily lives are both direct in that corrosion affects the usable service life of our properties, and indirect in that corrosion costs are borne by manufacturers and suppliers of products and services, which they pass on to customers.

1. Which of the following methods is not used for the prevention of corrosion?

(a) greasing (b) painting (c) plating (d) Heating

2. Copper gets corroded in presence of:

(a) nitrogen gas (b) Carbon dioxide gas (c) Hydrogen sulphide gas (d) Hydrogen gas

3. The colour of layer that deposits on silver ornaments:

(a) green (b) Blue (c) black (d) yellow

4. Corrosion can be prevented by

(a) alloying (b) tinning (c) galvanizing (d) all of the above

5. Rust is chemically

(a) $\text{Fe}_2\text{O}_3 \cdot x\text{H}_2\text{O}$ (b) Fe_2O_3 (c) Fe_3O_4 (d) $\text{Fe}_3\text{O}_4 \cdot x\text{H}_2\text{O}$