Question-16
A shiny brown coloured element 'X' on heating in air becomes black in colour. Name the element 'X' and the black coloured compound formed.
Solution:
The shiny brown coloured element X is copper metal (Cu).When copper metal is heated in air, it forms a black coloured compound copper oxide. So, the black coloured compound is copper oxide or copper (II) oxide, CuO.

Question-17
Why do we apply paint on iron articles?
Solution:
Rust is a soft and porous substance, which gradually falls from the surface of an iron object, and then the iron below starts rusting. Thus, rusting of iron (or corrosion of iron) is a continuous process which, if not prevented in time, eats up the whole iron object. So, when we apply paint on iron articles it reduces the rusting of iron.

Question-18
Oil and fat containing food items are flushed with nitrogen. Why?
Solution:
Packaging fat and oil containing foods in nitrogen gas can prevent rancidity. When the fat and oil present in food materials gets oxidised (in air), their oxidation products have an unpleasant smell and taste. When it is surrounded by unreactive gas, nitrogen, there is no oxygen (of air) to cause its oxidation and make it rancid.

Question-19
Explain the following terms with one example each.
a. Corrosion
b. Rancidity
Solution:
a. Corrosion is the process in which metals are eaten up gradually by the action of air, moisture or a chemical on their surface. Corrosion is caused mainly by the oxidation of metals by the oxygen of air.
Example: Rusting of iron is the most common form of corrosion. When an iron object is left in damp air for a considerable period of time, it gets covered with a red-brown flaky substance called 'rust'. This is called rusting of iron.

b. The condition produced by aerial oxidation of fat and oil in food which is marked by an unpleasant smell and taste is called rancidity.
Example: Rancidity can be retarded by keeping food in a refrigerator.
The refrigerator has a low temperature inside it. When the food is kept in a refrigerator, the oxidation of fat and oil in it is slowed down due to low temperature. So, the development of rancidity due to oxidation is retarded.

Question-20
Why should a magnesium ribbon be cleaned before burning in air?
Solution:
To remove the oxide layer and facilitates rapid burning.

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