

Value Based Questions

Q. 1. Nishant is a lazy boy. He doesn't like to brush his teeth instead he rinses his mouth with water. His mother makes sure that he brushes his teeth twice a day.

Answer the following questions based on the above situation:

- (i) Why does Nishant's mother insist on brushing teeth twice a day?**
- (i) How is a toothpaste better than just water, for cleaning teeth?**
- (ii) What values are promoted by Nishant's mother?**

Ans. (i) We should brush our teeth twice a day as bacteria present in the mouth, produce acids by degradation of sugar and food particles remaining in the mouth after eating.

(ii) The best way to prevent this is to clean the mouth using toothpastes which are generally basic.

These can neutralise the excess acid and prevent tooth decay.

(iii) Awareness, caring, health consciousness.

Q. 2. Farmers are using a large number of pesticides and fertilisers in their fields to increase crop production and to enhance their profits. But by doing so, they are causing damage to the soil as well as to the environment.

Answer the following questions based on the above situation:

- (i) Do you agree with this statement?**
- (ii) Why should we avoid eating fruits and vegetables without washing them properly?**
- (iii) What values are neglected by the farmers?**

Ans. (i) Plants require a specific pH range for their healthy growth. By using a large number of pesticides and fertilisers, pH of the soil changes, which makes it more acidic or basic. So in the long run, the soil becomes infertile. This leads to soil erosion, damaging the environment also. So, use of these pesticides and fertilisers should be restricted.

(ii) The chemical pesticides sprayed by the farmers in their fields, stick to the fruits and vegetables. So, they should be removed by washing properly, before eating.

(iii) Care towards society, unselfishness.

Q. 3. A student accidentally spilled concentrated H_2SO_4 on his hand. Before the teacher got to know, his friend washed his hands with water and also with soap but the burning sensation on hand still continued. His friend then rubbed solid sodium bicarbonate on his hand and then washed with water, finally the burning sensation is relieved.

Answer the following questions based on the above situation

(i) Mention the values shown by student's friend.

(ii) Can you recommend any other substance available in the laboratory which can be used instead of sodium bicarbonate?

(iii) Write the chemical reaction involved in the treatment of acid burn with sodium bicarbonate.

Ans. (i) Presence of mind, critical thinking and dignity of individual.

(ii) Pouring dilute sodium hydroxide on the burning hand and keeping in water for 10 minutes can also be done.

(iii) $2\text{NaHCO}_3 + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + 2\text{H}_2\text{O} + 2\text{CO}_2$