

J. Assertion-Reason Questions

In the questions given below two statements are given – one labelled **Assertion (A)** and the other labelled **Reason (R)**. Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

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

1. **Assertion:** A vaccine contains killed or weakened bacteria of a disease which cannot cause a disease.

Reason: A vaccine stimulates the production of antibodies which protect the body from the disease.

2. **Assertion:** Milk is converted to curd by adding a very small amount of *Lactobacillus* bacteria.

Reason: *Lactobacillus* bacteria grow at an enormous rate when added to milk and convert milk into curd.

3. **Assertion:** Malaria spreads by the bite of male *Anopheles* mosquito.

Reason: *Anopheles* mosquito carries the malarial parasite in its salivary glands.

4. **Assertion:** Leguminous plants have *Rhizobium* bacteria in their root nodules.

Reason: *Rhizobium* bacteria can fix nitrogen into nitrogen compounds.

5. **Assertion:** Pickles can be preserved by immersing the pickles completely in oil and vinegar.

Reason: Both oil and vinegar prevent the growth of bacteria and fungi.

K. Case Study

1. Sneha observed that when her mother prepared mango pickle, she put lots of salt, oil and vinegar in it. While preparing apple jam, she boiled the fruits and put lots of sugar. Sneha also observed that her mother stored the dry fruits and snacks in airtight containers, to keep them fresh for a long time. When Sneha inquired her mother explained that excess salt prevents the growth of microbes. Also if the pickles are to be preserved for a long time, they should be immersed in oil and vinegar to stop the growth of microbes. In jams, excess sugar helps to reduce water content and prevents the growth of bacteria and fungi.

- (i) Which of the following prevents the growth of microbes in pickles?
(a) air and salt (b) oil and salt (c) both a and b (d) air and oil
- (ii) A large amount of sugar is added in the preparation of jams to
(a) enhance the taste (b) neutralise the flavour
(c) prevent the growth of microbes (d) enhance the colour
- (iii) The following method helps to keep the dry fruits fresh for a long time.
(a) storing in salt (b) by adding oil
(c) storing in vinegar (d) storing in air-tight containers
- (iv) What is added to the pickles so that they can be stored for a long time?
(a) salt (b) oil (c) vinegar (d) all of these