

Chapter 16

Chemistry in Everyday Life

(Assertion and Reason Questions)

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

- (a)** Both Assertion (A) and Reason (R) are correct statements, and Reason (R) is the correct explanation of the Assertion (A).
- (b)** Both Assertion (A) and Reason (R) are correct statements, but Reason (R) is not the correct explanation of the Assertion (A).
- (c)** Assertion (A) is correct, but Reason (R) is incorrect statement.
- (d)** Assertion (A) is incorrect, but Reason (R) is correct statement.

Q.1. Assertion (A): Enzymes have active sites that hold substrate molecule for a chemical reaction.

Reason (R): Drugs compete with natural substrate by attaching covalently to the active site, of enzyme.

Q.2. Assertion (A): Competitive inhibitors compete with natural substrate for their attachment on the active sites of enzymes.

Reason (R): In competitive inhibition, inhibitor binds to the allosteric site of the enzyme.

Q.3. Assertion (A): Non-competitive inhibitor inhibits the catalytic activity of enzyme by binding with its active site.

Reason (R): Non-competitive inhibitor changes the shape of the active site in such a way that substrate can't recognise it.

Q.4. Assertion (A): Receptors are crucial to body's communication process.

Reason (R): Receptors are proteins

Q.5. Assertion (A): Chemical messenger gives message to the cell without entering the cell.

Reason (R): Chemical messenger is received at the binding site of receptor proteins.

Q.6. Assertion (A): Chemical messengers are chemicals that enable communication of message between two neurons or between neurons and muscles.

Reason (R): Chemicals enter the cell through receptor.

Q.7. Assertion (A): Metal hydroxides are better antacids than metal hydrogencarbonates.

Reason (R): Metal hydroxides being insoluble do not increase the pH of the stomach above neutrality.

Q.8. Assertion (A): Terfenadine, an antihistamine does not affect the secretion of acid in stomach.

Reason (R): Antiallergic and antacid drugs work on different receptors.

Q.9. Assertion (A): Sulpha drug contain sulphonamide group.

Reason (R): Salvarsan is a sulpha drug.

Q.10. Assertion (A): Penicillin (G) is an antibiotic.

Reason (R): Penicillin (G) is effective against gram positive as well as gram negative bacteria.

Q.11. Assertion (A): Sodium chloride is added to precipitate soap after saponification.

Reason (R): Hydrolysis of esters of long chain fatty acids by alkali produces soaps in colloidal form.

Q.12. Assertion (A): Transparent soaps are made by dissolving soaps in ethanol.

Reason (R): Ethanol makes things invisible.

Q.13. Assertion (A): Receptor proteins show selectivity for one chemical messenger over the other.

Reason (R): Chemical messenger binds to the receptor site and inhibits its natural function.

Q.14. Assertion (A): All chemicals added to food items are called food preservatives.

Reason (R): All these chemicals increase the shelf life of stored food.

Q.15. Assertion (A): Preservative are added to food items.

Reason (R): Preservatives inhibit the growth of microorganisms.

-X-X-X-

ANSWER KEY

Q.1 : (c)

Q.2 : (c)

Q.3 : (d)

Q.4 : (b)

Q.5 : (a)

Q.6 : (c)

Q.7 : (a)

Q.8 : (a)

Q.9 : (c)

Q.10 : (c)

Q.11 : (a)

Q.12 : (c)

Q.13 : (c)

Q.14 : (d)

Q.15 : (a)