

CBSE Test Paper-02

Class - 12 Chemistry (Chemistry in Everyday Life)

1. The disadvantage of using Penicillin is
 - a. Causes allergic reactions
 - b. Not easily metabolized by the body
 - c. Not easily available
 - d. Can't effectively kill the microbes
2. Paul Ehrlich was awarded Nobel Prize in medicine in 1908 for discovering the medicine to treat
 - a. Syphilis
 - b. Viral infections
 - c. Diabetes
 - d. Typhoid
3. The drug which can act both as an analgesic and antipyretic is
 - a. Aspirin
 - b. Zantac
 - c. Valium
 - d. Equanil
4. Narcotic drugs are used in medicinal doses and not in huge amounts because
 - a. They cause kidney damage
 - b. They kill both the normal and diseased cells
 - c. They can be fatal
 - d. They cause acidity
5. The purpose of adding bithional to medicated soaps is
 - a. To impart antiseptic properties
 - b. To make it look attractive
 - c. To give a good smell
 - d. To prevent soap from drying
6. How are synthetic detergents better than soaps?
7. Why are detergents called soapless soaps?

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8. Where are receptors located?
 9. Describe the following with examples: (a) Preservatives (b) Biodegradable detergents.
 10. Give three examples of sulpha drugs and write their main uses.
 11. Describe the following with examples: (i) Antipyretic (ii) Analgesic
 12. If water contains dissolved calcium hydrogen carbonate, out of soaps and synthetic detergents which one will you use for cleaning clothes?
 13. Mention one use of each of the following drugs:
 - i. Ranitidine
 - ii. Paracetamol
 - iii. Tincture of iodine
 14. While antacids and antiallergic drugs interfere with the function of histamines, why do these not interfere with the function of each other?
 15.
 - a. What are the functions performed by histamine in body?
 - b. Why are certain drugs called enzyme inhibitors?

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Solutions

1. (a) Causes allergic reactions

Explanation: Pencillin causes allergic reactions. So, it is absolutely essential to test the patients for sensitivity (allergy) to penicillin before it is administered.

2. (a) Syphilis

Explanation: Paul Ehrlich got Nobel prize for Medicine in 1908 for the discovery of salvarsan, the first effective treatment for syphilis. Although salvarsan is toxic to human beings, its effect on the bacteria, spirochete, which causes syphilis is much greater than on human beings.

3. (a) Aspirin

Explanation: Analgesics reduce or abolish pain without causing impairment of consciousness, mental confusion, incoordination or paralysis or some other disturbances of nervous system. Non-narcotic analgesics like aspirin have many other effects such as reducing fever (antipyretic). So aspirin can act as both analgesic and antipyretic.

4. (c) They can be fatal

Explanation: Narcotic analgesics like morphine and many of its homologues, when administered in medicinal doses (and not in huge amounts), relieve pain and produce sleep. In poisonous doses, these produce stupor, coma, convulsions and ultimately death.

5. (a) To impart antiseptic properties

Explanation: Biithionol (also called bithional) is added to soaps to impart antiseptic properties.

6. Soaps work in soft water. However, they are not effective in hard water. In contrast, synthetic detergents work both in soft water and hard water. Therefore, synthetic detergents are better than soaps.

7. The synthetic detergents have structures and all the properties similar to soaps but do not contain the usual soaps like sodium salts of fatty acids. Therefore, these are called soapless soaps.

8. Receptors are embedded in cell membrane.

9. a. **Preservatives:** Those chemicals which are used to prevent food from spoilage are

called preservatives. For example, sodium benzoate.

- b. **Biodegradable detergents:** Those detergents which are decomposed by micro organism are called biodegradable detergent. For example, detergents having linear alkyl chains.

10. (i) Sulphadiazine (ii) Sulphaguanidine (iii) Sulphanilamide.

They are used in place of antibiotics to prevent the growth of micro-organisms.

11. i. **Antipyretics:** The medicines taken to lower the body temperature in fever is called antipyretics. Example - Crocin, Aspirin, Paracetamol etc.

- ii. **Analgesic:** The medicines which are used to relieve body pains are known as analgesics. Examples - Novalgin, Butazolidine etc.

12. Synthetic detergents are preferred for cleaning clothes. When soaps are dissolved in water containing calcium ions, these ions form insoluble salts that are of no further use. However, when synthetic detergents are dissolved in water containing calcium ions, these ions form soluble salts that act as cleansing agents.

13. i. As antacid

- ii. As antipyretics, which lower the body temperature during high fever

- iii. As antiseptic

14. Specific drugs affect particular receptors. Antacids and anti-allergic drugs work on different receptors. This is the reason why antacids and anti-allergic drugs do not interfere with each other's functions but interfere with the functions of histamines.

15. a. Histamine is a potent vasodilator. It contracts muscles in the gut and bronchi. It relaxes some other muscles, e.g., in the walls of blood vessels. Histamine is also responsible for congestion in the nose associated with common cold and allergies. Also, histamine stimulates the release of pepsin and hydrochloric acid in the stomach.

- b. Enzymes have active sites that bind the substrate for effective and quick chemical reaction. The functional groups present at the active site of enzyme interact with functional groups of substrate via ionic bonding, hydrogen bonding, van der Waals interaction etc. Some drugs interfere with this interaction by blocking the binding site of enzyme and prevent the binding of actual substrate with enzyme. This inhibits the catalytic activity of the enzyme, therefore, these are called inhibitors.