

NCERT Solutions for Class 12 Chemistry Chapter 16: NCERT Solutions for Class 12 Chemistry Chapter 16, Chemistry in Everyday Life explain how chemistry is a part of our daily activities. This chapter talks about the role of medicines, cleaning products, food additives and other useful items.

Students will learn about different types of drugs, how they work, artificial sweeteners, food preservatives, and how soaps and detergents clean. The solutions provide easy-to-understand answers to all the questions in the textbook helping students prepare well for exams and understand the concepts clearly.

NCERT Solutions for Class 12 Chemistry Chapter 16 Overview

The chapter **Chemistry in Everyday Life** focuses on how chemical substances and processes influence our daily routines. It explains the importance of chemistry in the development of medicines, detergents, food preservatives, and other commonly used products. Key topics include:

1. **Medicines:** Understanding different types of drugs such as analgesics, antacids, and antibiotics, and their mechanisms of action.
2. **Cleansing Agents:** The structure and function of soaps and detergents and how they help in cleaning.
3. **Food Additives:** The role of artificial sweeteners, food preservatives, and antioxidants in improving the quality and shelf life of food.
4. **Chemicals in Cosmetics:** The use of chemicals in items like shampoos, perfumes, and skincare products.

NCERT Solutions for Class 12 Chemistry Chapter 16 PDF

The NCERT Solutions for Class 12 Chemistry Chapter 16 Chemistry in Everyday Life provide a detailed explanation of key concepts and answers to textbook questions. These solutions help students understand topics like medicines, cleansing agents, food additives, and the role of chemicals in cosmetics.

The solutions are presented in a simple and easy-to-understand format, making it a valuable resource for exam preparation. To access the complete solutions, download the PDF from the link provided below.

NCERT Solutions for Class 12 Chemistry Chapter 16 PDF

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Chemistry in Everyday Life

Below are NCERT Solutions from Chapter 16 Chemistry in Everyday Life for Class 12 Chemistry along with their solutions:

Question 1:

Why do we need to classify drugs in different ways?

Answer:

Drugs are classified for several reasons:

1. **Based on their effects:** This helps doctors choose the right drug for a particular disease.
2. **Based on their action:** Drugs are categorized by how they work on specific biological processes.
3. **Based on their chemical structure:** Drugs with similar structures and effects are grouped together.
4. **Based on their targets:** This classification focuses on how drugs interact with specific molecules in the body.

Question 2:

Explain the term, target molecules or drug targets, as used in medicinal chemistry.

Answer:

Target molecules, or drug targets, are essential components like proteins, nucleic acids, carbohydrates, or lipids that play a role in diseases. Drugs work by interacting with these targets to either block or modify their activity, helping to treat the disease.

Question 3:

Name the macromolecules that are chosen as drug targets.

Answer:

The key macromolecules targeted by drugs include proteins, nucleic acids, carbohydrates, and lipids.

Question 4:

Why should medicines not be taken without consulting doctors?

Answer:

Medicines can interact with multiple sites in the body, and taking them without guidance can

lead to harmful effects. Overdoses may also cause poisoning or severe side effects, which is why consulting a doctor is crucial.

Question 5:

Define the term chemotherapy.

Answer:

Chemotherapy involves using chemicals to treat diseases. These chemicals are used for prevention, diagnosis, or treatment of conditions, especially to destroy harmful cells like cancer cells.

Question 6:

Which forces are involved in holding the drugs to the active site of enzymes?

Answer:

The forces responsible for binding drugs to enzymes are:

1. Hydrogen bonding
2. Ionic bonding
3. Van der Waals forces
4. Dipole-dipole interactions

Question 7:

While antacids and antiallergic drugs interfere with the function of histamines, why do these not interfere with the function of each other?

Answer:

Antacids and antiallergic drugs act on different receptors. Since they target specific sites, they do not interfere with each other's functions despite affecting histamines.

Question 8:

A low level of noradrenaline is the cause of depression. What type of drugs are needed to cure this problem? Name two drugs.

Answer:

Antidepressants are used to address depression. These drugs slow down the breakdown of noradrenaline, allowing it to work longer in the brain. Two examples are:

1. Phenelzine
2. Iproniazid

Question 9:

What is meant by the term 'broad-spectrum antibiotics'? Explain.

Answer:

Broad-spectrum antibiotics are medicines effective against a wide variety of bacteria, both gram-positive and gram-negative. For example, Chloramphenicol treats conditions like typhoid, meningitis, and tuberculosis. Other examples include vancomycin and ofloxacin.

Question 10:

How do antiseptics differ from disinfectants? Give one example of each.

Answer:

Antiseptics are used on living tissues, like wounds, to kill germs, whereas disinfectants are used on non-living surfaces, like floors and tools, to destroy microbes. Examples:

- Antiseptic: Iodine tincture
- Disinfectant: Phenol solution

Question 11:

Why are cimetidine and ranitidine better antacids than sodium hydrogen carbonate or magnesium or aluminum hydroxide?

Answer:

Sodium hydrogen carbonate and metal hydroxides neutralize stomach acid temporarily but don't address its cause. Cimetidine and ranitidine prevent excessive acid production by blocking histamine receptors in the stomach lining.

Question 12:

Name a substance which can be used as an antiseptic as well as a disinfectant.

Answer:

Phenol can act as both. A 0.2% solution is used as an antiseptic, while a 1% solution works as a disinfectant.

Question 13:

What are the main constituents of Dettol?

Answer:

The key ingredients in Dettol are chloroxylenol and terpineol.

Question 14:

What is a tincture of iodine? What is its use?

Answer:

A tincture of iodine is a 2–3% solution of iodine in alcohol and water. It is used to disinfect wounds.

Question 15:

What are food preservatives?

Answer:

Food preservatives are chemicals that prevent spoilage by stopping microbial growth. Common examples include sugar, salt, vegetable oil, sodium benzoate, and propanoic acid salts.

Question 16:

Why is the use of aspartame limited to cold foods and drinks?

Answer:

Aspartame is not heat-stable and breaks down at high temperatures, so it is only used in cold foods and beverages.

Question 17:

What are artificial sweetening agents? Give two examples.

Answer:

Artificial sweeteners are substances that provide sweetness without adding calories. Examples include saccharin and aspartame.

Question 18:

Name the sweetening agent used in the preparation of sweets for a diabetic patient.

Answer:

Saccharin, aspartame, and alitame are commonly used in sweets for diabetic patients.

Question 19:

What problem arises in using alitame as an artificial sweetener?

Answer:

Alitame is extremely sweet, making it hard to control the level of sweetness in food.

Question 20:

How are synthetic detergents better than soaps?

Answer:

Synthetic detergents work in both hard and soft water, unlike soaps, which are less effective in hard water.

Question 21:

Explain the following terms with suitable examples:

- (i) Cationic detergents**
- (ii) Anionic detergents**
- (iii) Non-ionic detergents**

Answer:

1. **Cationic detergents:** These are quaternary ammonium salts with a positive charge on nitrogen. Example: Cetyltrimethylammonium bromide.
2. **Anionic detergents:** These contain a negatively charged sulfonate or sulfate group. Example: Sodium lauryl sulfate.
3. **Non-ionic detergents:** These have no charged ions and are made from esters of high molecular mass alcohols. Example: Polyethylene glycol stearate.

Question 22:

What are biodegradable and non-biodegradable detergents? Give one example of each.

Answer:

- **Biodegradable detergents** break down easily by bacteria. Example: Sodium lauryl sulfate.
- **Non-biodegradable detergents** do not degrade easily and can harm the environment. Example: Tetramethyl octylbenzene sulfonate.

Benefits of Solving NCERT Solutions for Class 12 Chemistry Chapter 16

1. Comprehensive Understanding of Real-Life Applications

The chapter helps students understand how chemistry is applied in daily life, covering topics like drugs, detergents, and food additives. Solving NCERT solutions enhances this understanding by offering practical examples and explanations.

2. Clear Concepts and Theoretical Knowledge

NCERT solutions provide detailed explanations and answers that simplify complex concepts such as drug action, types of drugs, and artificial sweeteners, ensuring clarity in theoretical knowledge.

3. Boosts Exam Preparation

This chapter frequently appears in board exams and competitive exams like NEET and JEE. Solving these solutions strengthens conceptual clarity, helping students score better marks.

4. Enhances Problem-Solving Skills

By practicing different types of questions (objective, short answer, and long answer), students improve their problem-solving ability and become better at tackling various exam patterns.

5. Familiarity with Important Questions

NCERT solutions highlight key questions that are often asked in exams, ensuring students focus on high-yield topics such as drug classification, target molecules, and synthetic detergents.

6. Builds Confidence

Practicing NCERT solutions makes students more confident about their knowledge and ability to answer questions accurately during exams.

7. Supports Competitive Exam Preparation

Concepts like types of drugs, their actions, and applications are essential for entrance exams. Practicing NCERT solutions ensures students are well-prepared for such topics.

8. Provides Step-by-Step Explanations

NCERT solutions are structured in a step-by-step manner, making it easier for students to follow and understand complex topics without confusion.

9. Develops Analytical Thinking

The chapter encourages analytical thinking by explaining how chemical compounds affect biological systems, fostering a deeper interest in applied chemistry.

10. Complements Lab Experiments

Understanding concepts through NCERT solutions helps students connect theoretical knowledge with practical applications they encounter in laboratory experiments.