# Chemistry final study guide answers

GED, or General Education Development Test, is taken in the U.S. or Canada to demonstrate proficiency in high school-level academic skills. The exam is usually taken by people who have not graduated from high school or have not received a high school diploma. The transfer of GED provides a general diploma of equivalence (also known as GED). One part of the GED includes science, including chemistry. The test is a lot of choice based on concepts from the following areas: Matter StructureMemadia LifeProperties of MatterChemical Reactions All materials consist of material. Matter is everything that has mass and takes up space. Some important concepts to remember about questions are: The question is composed of one or more than 92 naturally occurring elements. Each element is a pure material consisting of only one type of aomo. The aode consists of three types of particles: protons, neutrons and electrons. The amom does not need to have all three particles, but there will always be at least protons. Electrons are negatively charged particles, protons have a positive charge, and neutrons do not have an electric charge. Atom has an internal nucleus called a nucleus that contains protons and neutrons. Electrons orbit around the outside of the nucleus. The two main forces have atoms together. The electric force has orbited electrons around the nucleus. Opposite charges attract, so electrons are pulled into the nucleus. Nuclear power has protons and neutrons together within the nucleus. Periodic table Periodic table is a diagram in which chemical elements are arranged. The elements are categorized according to the following attributes: Atomic number - proton number kernelAtomic mass - the sum of protons and neutrons nucleusGroup - columns or multiple columns in a periodic table. The elements of the group have similar chemical and physical properties. Period – Left-to-right rows in the period table. The elements have the same number of energy housings over the period. Matter may exist in the form of a pure element, but combinations of elements are more common. Molecule - a molecule is a combination of two or more atoms (can be a combination of the same or different elements, such as H2 or H2O)Compound - is a combination of two or more chemically bonded elements. Usually compounds are considered a subclass of molecules (some people claim that they are determined by the types of chemical bonds). The chemical formula is a shorthand for the molecule/compound elements and their relationship. For example, H2O, a chemical water formula, indicates that two hydrogen atoms are combined with one oxygen ambus to form a water molecule. Chemical bonds have atoms together. Ion Bond - formed when electron transfers from one aomo to anotherCovalent bond - occurs when two atoms share one or more electrons Life on Earth depends on the chemical element carbon, which is every living thing. Coal is so important, it forms the basis of two branches of chemistry, organic chemistry and biochemistry. GED expects you to be familiar with the following terms: Hydrocarbons - molecules, containing only elements of carbon and hydrogen (e.g. CH4 are hydrocarbons, while CO2 is not available)Organic - refers to the chemistry of living objects, all of which are an element of carbon organic chemistry - study of carbon compounds involved in life chemistry (yes, studying a diamond that is a crystalline form of carbon is not included in organic chemistry, but when studying how methane is produced is organic chemistry) Organic molecules - molecules , carbon atoms connected by a straight line (carbon chain) or ring ring (carbon ring)Polymer - hydrocarbons that have combined the phases of matter Each phase of matter has its own chemical and physical properties. The phases of matter you need to know are: Solid material - solid material has a clear shape and volumeLiskide - the liquid has a certain volume, but can change the shape ofGas - the shape and volume of the gas can change the phase changes these stages of matter can change from one to another. Remember that the definitions of these phase changes: Melting - melting occurs, when the material changes from solid to liquidIndicate - cooking is when the material changes from liquid to gasScence - condensation is when the gas changes into liquidFreeFreeFreeFreeFree - Chemical Changes – material changes can be divided into two classes : Physical changes - do not produce new material (e.g. phase changes, kangal crushing)Chemical changes - produce new material (e.g. burning , rusting, photosynthesis) Solutions Solution occurs by combining two or more materials. The solution may cause physical or chemical changes. You can distinguish them in this way: the original materials can be separated from each other if the solution causes only a physical change. If a chemical change has occurred, the original materials cannot be separated from each other. A chemical reaction is a process that occurs when two or more substances combine to produce chemical changes. Important terms to remember are: the chemical equation - the name was given to a transcript used to describe the steps of chemical rectacts - the initial chemical reaction substances; substances that are combined in reaction products - substances that are formed by the speed of chemical reactions of a chemical reaction - the rate of activity of the chemical reaction - the external energy to be added to produce a chemical reaction - a substance that contributes to the chemical reaction (reduces the activation energy), but does not participate in the reaction itselfExecutive - this law states that the issue is not created and is not created nor destroyed Reaction. The number of chemical reaction reactive atoms will be the same as the number of atoms in the product. You can think of chemistry only in the context of laboratory tests, food additives or dangerous substances, but in the field of chemistry covers everything around us. Everything you hear, see, smell, taste, and touch includes chemistry and chemicals (issue), according to the American Chemical Society (ACS), a non-profit scientific organization for chemical progress, chartered by the U.S. Congress. And hearing aids, seeing, tasting, and touching all include a complex series of chemical reactions and interactions in your body. So even if you don't work as a chemist, you do chemistry, or something that involves chemistry, with almost everything you do. In everyday life, you have chemistry when you cook, when you use cleaning detergents to clean your counter when taking medication or when you dilute concentrated juices so that the taste is not so intense. Related: Whoa! A giant cotton candy explosion in a children's chemical laboratoryby ACS, chemistry is a study of matter, defined as nothing that has mass and takes up space, and changes that the matter can make when it is applied to different environments and conditions. Chemistry seeks to understand not only the properties of matter, such as the mass or composition of the chemical cell, but also how and why the substance undergoes certain changes - or something transformed because it was combined with another material, froze, because it was left in the freezer for two weeks or changed colors because it was exposed to too much sunlight. The reason why chemistry touches everything we do is that almost everything exists can be divided into chemical blocks. The main chemical blocks are chemical elements, which are materials made of a single aomo. Each substance is unique, consists of a specified number of protons, neutrons and electrons, and is identified by name and chemical symbol, such as C carbon. The elements that scientists have discovered so far are listed in the periodic allotment table and include both elements found in nature, such as English, hydrogen and oxygen, as well as those that are artificial, such as Lawrencium.Related: How are the elements grouped in a periodic table? Chemical elements can combine to form chemical compounds that are substances made of several elements, such as carbon dioxide (which is made from a single carbon atom connected to two oxygen atoms), or several atoms of one element, such as oxygen gas (which are made from two oxygen atoms). These chemical compounds can then be combined with other compounds or elements to form a large number of other substances and substances. Chemistry is physical scienceChemia is generally considered to be physical science, as defined in the encyclopedia Britannica, because chemical research does not cover living subjects. Most of the chemistry related to research development, such as the development of new products and materials for customers, falls within this objective. But the difference in how physical science becomes a slightly blurred biochemistry case, which explores the chemistry of living things, according to the Biochemistry Society. Chemicals and chemical processes tested by biochemistry are not technically considered alive, but understanding them is important for understanding how life works. Chemistry is physical science, which means that it does not include living things. One way many people practice chemistry regularly, perhaps without realizing, is cooking and baking. (Image credit: Shutterstock) Five major branches of chemistryRadiation, chemistry is divided into five main branches, according to an online chemistry textbook published in LibreText. There are also more specialised areas such as food chemistry, environmental chemistry and nuclear chemistry, but this section focuses on five main chemical subdisciplines. Analytical chemistry includes the analysis of chemicals and includes qualitative methods such as colour changes, as well as quantitative methods such as the examination of the exact wavelength(s) of light that the absorbed chemical causes that color change. These methods allow scientists to describe many different properties of chemicals, and can benefit society in various ways. For example, analytical chemistry helps food companies produce tastier frozen lunches by detecting how they are frozen with food chemicals over time. Analytical chemistry is also used to monitor environmental health, for example by measuring chemicals in water or soil. Biochemistry, as mentioned above, uses chemical methods to understand how biological systems work at the chemical level. Thanks to biochemistry, scientists were able to form a human genome, understand what different proteins are doing in the body and create the cure for many diseases. Related: Unravel the human genome: 6 molecular stagesOrganic chemistry studies chemical compounds of inorganic, or dead things such as minerals and metals. Traditionally, inorganic chemistry takes into account carbon-free compounds (which are subject to organic chemistry), but this definition is not entirely accurate according to acs. Some compounds, studied in inorganic chemistry, such as organometallic compounds, are metals that are metals that are connected to carbon - the main element that is studied in organic chemistry. Therefore, compounds such as these are considered to be part of both fields. Inorganic chemistry is used to develop a variety of products, including paints, fertilisers and sunscreens. Organic chemistry refers to chemical compounds containing carbon, an element considered necessary for life. Organic chemists shall examine the composition, properties and reactions of compounds which together with carbon have other non-carbon elements such as hydrogen, sulphur and hydrogen. Organic chemistry is used in many areas as described in ACS, such as biotechnology, the oil industry, medicines and plastics. Physical chemistry uses the concepts of physics to understand how chemistry works. For example, understand how atoms move and communicate with each other, or why some liquids, including water, turn into steam at high temperatures. Physical chemists try to understand these phenomena on a very small scale - at the level of atoms and molecules - to draw conclusions about how chemical reactions work and what gives specific substances their unique properties. This type of study helps inform other branches of chemistry and is important for product development, according to ACS. For example, physical chemists can study how certain substances, such as plastic, can react with chemicals with which this substance is designed to come into contact. What do chemists do? Chemists work in a wide range of fields, including research and development, quality control, production, environmental protection, consultation and law. They can work in universities, government or private industries, according to the ACS. Here are some examples of what chemists do:Research and developmentIn academia, chemists conduct research aimed at more knowledge of a specific topic, and don't necessarily have a specific application in mind. However, their results may still be applied to the products and applications concerned. In industry, research and technology chemists use scientific knowledge to develop or improve a specific product or process. For example, food chemists improve food quality, safety, storage and taste; pharmaceutical chemists develop and analyze the quality of drugs and other medical preparations; and agricultural chemists develop fertilisers, insecticides and herbicides necessary for the production of large-scale crops. Sometimes research and development may not relate to the development of the product itself, but to the production process associated with the production of this product. Chemical engineers and process engineers are developing new ways to facilitate and make their products more cost-effective, such as increasing product speed and/or output for a particular budget. Environmental protectionEnvironmental chemists are investigating how chemicals interact with the natural environment by describing chemicals and chemical reactions in natural processes in soil, water and air. For example, scientists can collect soil, water or air from a place of interest and analyse it in the laboratory to determine whether human activity is contaminated, contaminated by the environment or otherwise. Some environmental chemists can also help correct, or remove contaminants, from the soil, according to the U.S. Bureau of Labor Statistics. Related: Why fertilizers are dangerous (infographic)Scientists with an environmental chemistry background can also work as consultants for various organizations such as chemical companies or consultancy firms providing guidance on how practices and procedures can be completed in accordance with environmental rules. LawChemists can use their academic experience to provide advice or a lawyer on scientific issues. For example, chemists may work in the field of intellectual property when they can apply their scientific basis for copyright issues in science or environmental law, where they can represent specific interest groups and submit regulatory agencies for approval against certain activities. Chemists can also carry out analyses that help law enforcement agencies. Forensic chemists capture and analyze physical evidence left at the crime scene to help identify the people involved, as well as answer other important questions about how and why the crime was committed. Forensic chemists use various analytical methods, such as chromatography and spectrometry, to help identify and quantify chemicals. Additional resources: Resources: