Chemistry test review sheet

Doctors order basic blood chemistry tests to assess many conditions and find out how the body's organs work. Often, blood tests check electrolytes, minerals that help keep fluid levels in the body in balance and that are necessary to help muscles, heart, and other organs function properly. Blood chemistry tests also measure other substances that help show how well the kidneys work and how well the body absorbs sugars. Tests for electrolytes usually, tests on electrolytes to measure levels of sodium, potassium, chloride, and bicarbonate in the body. Sodium plays an important role in regulating the amount of water in the body. In addition, the passage of sodium in cells and outside cells is essential for many bodily functions, such as transmitting electrical signals in the brain and in the muscles. Sodium levels are measured to detect whether there is a proper balance of sodium and liquid in the blood to perform these functions. If the child becomes dehydrated (from vomiting, diarrhea, or other causes), sodium levels may be too high or low, which can cause confusion, weakness, lethargy and even convulsions. Potassium is necessary to regulate how the heart beats. Too high or too low potassium levels may increase the risk of abnormal heartbeat (also called arrhythmias). Low potassium levels are also associated with muscle weakness and cramps. Chloride, like sodium, helps maintain fluid balance in the body. Some medical problems such as dehydration, heart disease, kidney disease, or other diseases can disrupt the balance of chlorides. Testing chloride in such situations helps the doctor determine whether acid-base imbalance happens in the body. Bicarbonate prevents body tissue from getting too much or too little acid. The kidneys and lungs balance the level of bicarbonate in the body. So if bicarbonate levels are too high or low, this may indicate a problem with these organs. Other substances measured Other blood substances measured in the basic blood chemistry test include urea nitrogen and creatinine, which tell you how well the kidneys work, and glucose, indicating whether there is a normal amount of sugar in the blood. Urea nitrogen (BUN) is a measure of how well the kidneys work. Urea is a nitrogen-containing waste product that is formed when the body breaks down protein. If the kidneys do not work properly, bun levels will accumulate in the blood. Dehydration, excessive bleeding, and severe infection leading to shock can also raise BUN levels. Levels of creatinine in the blood that are too high may indicate that the kidneys are not functioning properly. Kidney filter and excretion of creatinine; if they do not work as they should, creatinine may accumulate in the bloodstream. Both dehydration and muscle damage can also raise creatinine levels. Glucose is the main type of sugar in the blood. It comes from the food we eat and is the main source of energy needed to power Glucose levels that are too high or too low can cause problems. The most common cause of high blood glucose levels is diabetes. Other diseases and some medications can also cause high blood glucose levels. Review: KidsHealth Medical Experts Molar mass of a substance is the mass of one mole of a substance. This collection of ten chemistry test questions deals with the calculation and use of molar masses. The answers appear after the last question. A periodic layout is required to complete the questions. Tetra Images/Getty Images Calculate cuso4 molar mass. Calculate the molar mass of CaCOH. Calculate the molar mass $Cr_4(P_2O_7)_3$. Calculate the molar mass of $RbOH{\cdot}2H_2O$. Calculate molar mass $KAl(SO_4)_2{\cdot}12H_2O$. What is the weight in grams of 0.172 moles of $NaHCO_3$? How many $CdBr_2$ moles are in the $CdBr_2$ sample of 39.25 grams? How many cobalt atoms are found in the 0.39 mole Sample $Co(C_2H_3O_2)_3$? What is the mass in chlorine milligrams in Cl_2 3.9 x 1019 molecules? How many grams of aluminum is in 0.58 moles $Al_2O_3{\cdot}2H_2O$? 1. 159,5 g/mol2. 69.09 g/mol3. 729.8 g/mol4. 138.47 g/mol5. 474.2 g/mol6. 14.4 grams7. 0.144 moles8. 2.35 x 1023 atoms9. 4.6 mg chlorine10. 31.3 grams of aluminum You can think of chemistry only in the context of laboratory tests, food additives or hazardous substances, but the field of chemistry covers everything around us. Everything you hear, see, smell, taste and touch includes chemistry and chemicals (matter), according to the American Chemical Society (ACS), a non-profit scientific organization for the development of chemistry chartered by the U.S. Congress. And hearing, seeing, tasting and touching everyone is associated with intricacies of chemical reactions and interactions in the 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 do chemistry while cooking, when using cleaning detergents to wipe off the counter, when you take the drug or when you dilute the concentrated juice so that the taste is not so intense. Related: Whoa! A huge explosion of cotton candy in a children's chemical laboratoryACS-type, chemistry is a study of matter, defined as everything that has mass and takes place, and changes that matter can change when subject to different environments and conditions. Chemistry tries to understand not only the properties of matter, such as the mass or composition of a chemical element, but also how and why matter undergoes certain changes — or something transformed, because in combination with another substance, it froze because it was left for two weeks in the freezer, or changed colors because it was exposed to too much sunlight. The reason chemistry touches everything we do is because almost everything that exists can be divided into chemical building sites. The main building blocks in chemistry are chemical elements, which are substances made from a single atom. Each chemical is it consists of a specified number of protons, neutrons and electrons and is identified by a name and chemical symbol such as C for carbon. The elements that scientists have discovered so far are listed in the periodic table of elements and include both elements that are found in nature, such as carbon, hydrogen and oxygen, as well as those that are man-made, like Lawrencium.Related: How are elements grouped into periodic grounding? Chemical elements can combine to form chemical compounds that are substances consisting of multiple elements, such as carbon dioxide (which is made from a single carbon atom connected to two oxygen atoms) or multiple atoms of a single element, such as an oxygen gas (which is made from two interconnected oxygen atoms). These chemicals can then bind to other compounds or elements, creating countless other substances and materials. Chemistry is a physical scienceChemistry is usually considered physics, as defined by the Encyclopedia Britannica, because the study of chemistry does not include living beings. Most of the chemistry involved in research and development, such as creating new products and materials for customers, falls within the scope of this goal. But the distinction as a physicist becomes somewhat dithering in the case of biochemistics, which explores the chemistry of living beings, according to the Biochemical Society. Chemicals and chemical processes studied by biochemists are not technically considered alive, but understanding them is important for understanding how life works. Chemistry is physical science, which means it doesn't involve living things. One way many people regularly practice chemistry, perhaps without realizing it, is cooking and baking. (image credit: Shutterstock) The five main branches of chemistryTraditionally, chemistry is divided into five main branches, according to an online chemistry manual published by LibreText. There are also more specialized fields such as food chemistry, environmental chemistry and nuclear chemistry, but this section focuses on the five main subdisciplins of chemistry. Analytical chemistry includes the analysis of chemicals and includes qualitative methods such as looking at color changes, as well as quantitative methods such as the study of the exact wavelength (wavelength) of light that the chemical absorbed to lead to color change. These methods enable scientists to characterise many different properties of chemicals and can benefit society in many ways. For example, analytical chemistry helps food companies introduce tastier frozen dinners by detecting how chemicals in food change when they are frozen over time. Analytical chemistry is also used to monitor the state of the environment by measuring chemicals in water or soil, for example. Biochemistry, as mentioned above, uses chemical techniques to how biological systems work at the chemical level. Thanks to biochemia, scientists were able to map the human genome, understand what proteins in the body and develop drugs for many diseases. Related: Unraveling the human genome: 6 molecular milestones Chemical chemistry investigates chemicals in inorganic or dead beings such as minerals and metals. Traditionally, inorganic chemistry considers compounds that do not contain carbon (which are covered by organic chemistry), but this definition is not entirely accurate, according to the ACS. Some compounds studied in inorganic chemistry, like metal compounds, contain metals that are metals that are attached to carbon - the main element that is studied in organic chemistry. Therefore, compounds such as these are considered part of both fields. Inorganic chemistry is used to create various products, including paints, fertilizers and sunscreens. Organic chemistry deals with chemical compounds that contain carbon, an element considered essential for life. Organic chemists study the composition, structure, properties and reactions of such compounds, which together with carbon contain other non-carbon elements such as hydrogen, sulphur and silicon. Organic chemistry is used in many applications as described in the ACS, such as biotechnology, oil industry, pharmaceuticals and plastics. Physical chemistry uses concepts from physics to understand how chemistry works. For example, learn how atoms move and interact with each other, or why certain fluids, including water, convert vapors into 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 the action of chemical reactions and what gives specific materials their own unique properties. This type of research helps inform other branches of chemistry and is important for product development, according to ACS. For example, physical chemists can study how certain materials, such as plastic, can react with chemicals with which the material is intended to come into contact. What do chemists do? Chemists work in various fields including research and development, quality control, production, environmental protection, consulting and law. They can work in universities, for government or in private industry, according to the ACS. Here are some examples of what chemists do:Research and developmentIn academia, research chemists aim for further knowledge of a particular topic, and do not necessarily need to have a specific application in mind. However, their results can still be applied to relevant products and applications. In the industry, chemists in research and development use scientific knowledge to develop or improve a particular product or process. For example, food chemists improve the quality, safety, storage and taste of food; pharmaceutical chemists develop and analyze the quality of medicines and other medical preparations; and agricultural chemists develop fertilizers, insecticides and herbicides necessary for large-scale cultivation research and development must not include the improvement of the product itself, but rather the manufacturing process associated with the manufacture of that product. Chemical engineers and process engineers are developing new ways to make the production of their products easier and more cost-effective, such as increasing the speed and/or efficiency of a product for a given budget. Environmental protection Environmental chemists study how chemicals interact with the environment, characterizing chemicals and chemical reactions present in natural processes in soil, water and air. For example, scientists can collect soil, water or air from an interesting place and analyze it in a laboratory to determine whether human activity has polluted or polluted the environment or otherwise affected it. Some environmental chemists may also help remediate or remove contaminants from the soil, according to the U.S. Bureau of Labor Statistics.Related: Why fertilizer is dangerous (infographic)Scientists with experience in environmental chemistry can also work as consultants for various organizations, such as chemical companies or consulting firms, providing guidance on how practices and procedures can be completed in accordance with environmental regulations. LawChemists can use their education to provide advice or an attorney for scientific issues. For example, chemists can work in the field of intellectual property, where they can apply their scientific experience on copyright issues in science or environmental law, where they can represent special interest groups and apply for regulatory approval before certain actions occur. Chemists can also perform analyses that help law enforcement. Forensic chemists capture and analyse the physical evidence left at the crime scene to help establish the identity of those involved, as well as answer other relevant questions about the manner and cause of the crime. Forensic chemists use a wide range of analysis methods, such as chromatography and spectrometry, to help identify and quantifies chemicals. Additional resources: resources:

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