

# CHEMISTRY MATTER AND CHANGE

## CHAPTER 6 ANSWER KEY

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**Why does the s-block portion of the periodic table span two groups?** Why are groups 1 and 2 called s-block elements? Groups 1 and 2 are called s-block elements because their outermost electrons or valence electrons occupy the s-orbital. Elements in group 1 have 1 valence electron located within the s-orbital. Elements in group 2 have 2 valence electrons within the s-orbital.

**Which transition metal is liquid at room temperature and is sometimes used in outdoor security lights?** Mercury. Mercury is identified with the symbol Hg, atomic number 80, and electronic configuration of  $[\text{Xe}]4f^{14}5d^{10}6s^2$ . It is an outer transition metal and the only metal in liquid state at room temperature.

**Why are members of group 18 virtually unreactive?** The noble gases (Group 18) are located in the far right of the periodic table and were previously referred to as the "inert gases" due to the fact that their filled valence shells (octets) make them extremely nonreactive. The noble gases were characterized relatively late compared to other element groups.

**Why does the p-block span 6 groups?** P-block elements are unified by the fact that their valence electrons (outermost electrons) are in the p orbital. The p orbital consists of six lobed shapes coming off a central point at evenly spaced angles. The p orbital can hold a maximum of six electrons, hence why there are six columns in the p-block.

**Why is that group 2 element larger?** Radium (Ra) is the element in Group 2 with the largest atomic size because it has the highest atomic number and the most electron shells (principal energy levels) compared to the other elements in the group.

Its valence electrons are farther from the nucleus, which results in a larger atomic size.

**Why is potassium kept in the s-block of the periodic table?** Answer: As potassium is highly reactive, electropositive and capable of forming hydroxides when reacted with water, it is also known as alkali metal. As potassium tends to lose the valence electrons in s orbital easily it has been placed in s block, as s block elements are highly reactive.

**What is the only transition metal that is liquid at room temperature?** Mercury (Hg) is a transition metal element that is unique because it is the only metal element that exist in a liquid form at room temperature.

**In which group of the periodic table would you find metalloids?** Groups 13–16 of the periodic table (orange in the Figure below) are the only groups that contain elements classified as metalloids. Unlike other groups of the periodic table, which contain elements in just one class, groups 13–16 contain elements in at least two different classes.

**What is the correct symbol for the transition metal that is liquid at room temperature?** its symbol is Hg. Mercury is categorized as Post-transition metal, but it is alternatively considered as a transition metal. As the mercury metal is liquid at room temperature this is because the melting point of mercury is very low, i.e., the melting point of mercury is  $-38.82^{\circ}\text{C}$  or 234.32 K.

**Why do s-block elements have two groups only?** The s-block elements of the Periodic Table are those in which the last electron enters the outermost s-orbital. As the s-orbital can accommodate only two electrons, two groups (1 & 2) belong to the s-block of the Periodic Table.

**Why does the s-block have 2 columns?** Because each orbital can have a maximum of 2 electrons, there are 2 columns in the s block, 6 columns in the p block, 10 columns in the d block, and 14 columns in the f block.

**Why is the s-block 2 elements wide?** The width of each orbital block is related to the maximum number of electrons that can be held by a particular orbital (i.e., s orbitals can hold up to two electrons, so the s block is two elements wide; p orbitals

can hold up to six electrons, so the p block is six elements wide, etc.).

**Why the s-block in the periodic table has only two columns while the p-block has six?** Short Answer. The s block has only two columns because an s orbital can hold 2 electrons, while the p block has six columns as there are three p orbitals, each able to contain 2 electrons, making a total of 6 electrons.

### **To Kill a Mockingbird Literary Skills: Questions and Answers**

Harper Lee's classic novel, "To Kill a Mockingbird," is a rich tapestry of literary elements that explore themes of racism, justice, and the loss of innocence. Here are some key literary skills and their corresponding questions and answers from the novel:

#### **1. Symbolism**

- **Question:** What does the mockingbird symbolize in the novel?
- **Answer:** Mockingbirds represent innocence, harmony, and the importance of respecting others. Killing a mockingbird is a serious offense because it signifies the destruction of these values.

#### **2. Irony**

- **Question:** What is the irony in the novel's title?
- **Answer:** The title suggests that To Kill a Mockingbird is a story about justice and protecting the innocent, but the novel reveals the harsh reality of racism and injustice in the American South.

#### **3. Character Development**

- **Question:** How does Scout Finch evolve as a character throughout the novel?
- **Answer:** Scout matures from an impulsive and tomboyish child into a thoughtful and compassionate young woman. She learns to question authority and challenge injustice, even in the face of societal pressures.

#### **4. Point of View**

- **Question:** What is the point of view used in the novel?
- **Answer:** The novel is told from the first-person perspective of Scout Finch. This allows the reader to experience the events through the eyes of a child, providing a unique and poignant perspective.

## 5. Theme

- **Question:** What is a major theme explored in the novel?
- **Answer:** One of the central themes is the destructive power of racism. The novel exposes the hypocrisy and brutality of a society that judges and condemns individuals based on their race.

## Uji Normalitas Data Menggunakan Rumus Kolmogorov-Smirnov di SPSS

### Apa itu Uji Normalitas?

Uji normalitas digunakan untuk menentukan apakah suatu kumpulan data mengikuti distribusi normal atau tidak. Distribusi normal adalah kurva berbentuk lonceng yang simetris di sekitar nilai rata-rata. Banyak teknik statistik mengasumsikan bahwa data berdistribusi normal.

### Rumus Kolmogorov-Smirnov

Rumus Kolmogorov-Smirnov (K-S) adalah salah satu uji normalitas yang umum digunakan. Rumus ini membandingkan distribusi kumulatif empiris data dengan distribusi kumulatif teoretis dari distribusi normal. Hasil uji K-S berupa nilai p, yang menunjukkan probabilitas bahwa data berasal dari distribusi normal.

### Cara Melakukan Uji K-S di SPSS

1. Buka SPSS dan masukkan data Anda.
2. Klik "Analyze" > "Descriptive Statistics" > "Explore".
3. Pilih variabel yang ingin Anda uji normalitasnya dan seret ke jendela "Dependent List".
4. Klik tombol "Options".
5. Pada tab "Normality Tests", pilih "Kolmogorov-Smirnov".
6. Klik "OK" untuk menjalankan uji.

## **Menginterpretasikan Hasil Uji K-S**

Nilai  $p$  yang rendah (biasanya di bawah 0,05) menunjukkan bahwa data tidak berdistribusi normal. Nilai  $p$  yang tinggi menunjukkan bahwa data mungkin berdistribusi normal. Namun, perlu diingat bahwa uji K-S sangat sensitif terhadap ukuran sampel. Dengan sampel yang besar, uji K-S dapat mendeteksi penyimpangan kecil dari normalitas yang mungkin tidak signifikan secara praktis.

## **Konsistensi**

Konsistensi uji K-S mengacu pada kemampuannya untuk menghasilkan hasil yang sama pada sampel yang berbeda dari populasi yang sama. Uji K-S umumnya konsisten untuk sampel yang besar, tetapi dapat kurang konsisten untuk sampel yang kecil. Oleh karena itu, penting untuk mempertimbangkan ukuran sampel saat menafsirkan hasil uji K-S.

**What is history Ed?** Learning and teaching processes contributing to citizens' improvement of their historical knowledge, and to the usefulness of this knowledge to their personal and social development.

**What is a handbook in education?** Student handbooks are the guides to student life in the district, providing an orientation for new and current students.

**Can I teach history without a degree?** To become a high school history teacher at any level, you'll need a bachelor's degree in education along with a major or minor in history or social science. This is the minimum requirement to teach at a middle or high school level.

**Do you need a PhD to teach history?** Indeed, the path you follow will depend largely on your specific career preferences. However, to become a professional historian (someone who works in academia and research), it's necessary to earn a master's degree. Postsecondary teaching positions generally require a Doctor of Philosophy (PhD) degree.

**What are the three types of handbooks?** Some common types of handbooks include employee handbooks, student handbooks, policy handbooks, and training handbooks. Each type caters to a specific audience and provides information that is

relevant to their role or position.

**What is a handbook vs manual?** A handbook provides comprehensive knowledge on a subject, covering a wide range of topics. A manual focuses on specific tasks or processes, providing detailed instructions. A guide offers a concise overview and assistance for a specific activity or context.

**What should a student handbook contain?** A Student's Guide to Success The Student Handbook contains information about support services, student rights and responsibilities and College and academic policies. The Student Handbook also includes a daily planning calendar with important dates and deadlines listed for your convenience.

**Can you get a PHD in history without a Masters?** Many history Ph. D. programs admit candidates with just a bachelor's degree; however, some programs recommend or require a master's in history to enter the doctoral program.

**Is a history degree not worth it?** According to Schandler, understanding history provides perspective and ultimately helps us better understand the present. “(History) helps one discern fact from fiction, truth from lies,” he said. On the more practical side, having a degree in history can help you get and stay employed.

**Can I get a masters in history without a bachelor's in history?** Degree Requirements Most programs for an online master's degree in history require only a bachelor's degree, with a preference for a degree in history or a related major like political science or American studies. Some may prefer applicants with experience working in a relevant job, like in a museum.

**How many years does it take to become a history professor?** Earn a doctorate Earning your doctor of philosophy (PhD) degree can take 3-5 years and requires picking a topic or region specialization like 20th century, medieval or military history, or Latin America or Asian studies. Becoming a tenured history professor at colleges and universities often calls for a PhD.

**Are history professors in demand?** Jobs for History Professors in this state are growing at a rate of 11.8% which is faster than the nationwide estimated projection of 10.4%. The BLS is projecting 160 annual History Professors job openings in

California, and 1,900 total jobs in the year 2026.

**How long does it take to get a doctorate in history?** According to statistics kept by the American Historical Association, it can take anywhere from six to nine years to complete a doctoral dissertation in history.

**What is a major in history education?** A history major is a degree path that teaches students to critically examine the past and become informed citizens. Unlike in some high school history courses, where students might spend most of their time memorizing dates and facts, undergraduate history majors focus on analysis and evaluation.

**What do history students do?** History majors analyze and interpret information, write and share ideas about why events happened and develop the knowledge and skills that help them to succeed in today's workplace. They are working in a wide range of fields in companies and institutions around the world.

**What does history class teach you?** Studying history helps us understand how events in the past made things the way they are today. With lessons from the past, we not only learn about ourselves and how we came to be, but also develop the ability to avoid mistakes and create better paths for our societies.

**What grade is history taught?** In many US states, American History is taught in grades 5, 8, and 11. History of the state itself, e.g., New York or Pennsylvania, might appear in grade 4 or 7.

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