



1. **These constructs have n minus 2 radial nodes and one angular node. These constructs have an angular momentum quantum number of one and a minimal principal quantum number of two. Two of these overlap in order to form a pi bond. For a given energy level, there exist (*) three of these, which are mutually perpendicular and have a dumbbell shape. For 10 points, name these atomic orbitals that can hold 6 electrons and are typically filled after s orbitals.**

ANSWER: p orbital

048-14-101-05101

BONUS: What James Joyce collection includes short stories about the Irish middle class such as "Araby" and "The Dead?"

ANSWER: Dubliners

227-14-101-0510-11

2. **This man's reputation was established in a painting set in the Petersburg battlefield, where Francis Channing Barlow inspects several prisoners. This artist showed children holding hands in front of a red schoolhouse in one painting. Another of his artworks shows (*) sharks circling a rudderless boat captained by a single black man. For 10 points, name this American painter of *Snap the Whip* and *The Gulf Stream*.**

ANSWER: Winslow Homer

030-14-101-05102

BONUS: Founded by Zeno of Citium in the third century BCE, what school of philosophy counted among its members Chrysippus and Seneca?

ANSWER: Stoicism

147-14-101-0510-11

3. **In patients with this disease, levels of hemoglobin A1C are often monitored. A sizable proportion of patients with this disease develop ulcers in their feet, and other complications include retinopathy and nephropathy. An autoimmune attack causes unpredictable bouts of hypo- and hyper-(*)glycemia in one form of this disease, which results in the destruction of the beta cells in the islets of Langerhans, stopping the production of insulin. For 10 points, name this disease whose type I and type II forms both involve an elevated level of blood sugar.**

ANSWER: diabetes mellitus

020-14-101-05103

BONUS: Name the pious king of England whose death led to a succession crisis ending with the invasion of William the Conqueror.

ANSWER: Edward the Confessor [prompt on Edward]

230-14-101-0510-11

4. **This lawyer won freedom for the slaves who mutinied aboard the *Amistad*, As Secretary of State, this man negotiated the treaty in which the U.S. received Florida from Spain, and was largely responsible for formulating the (*) Monroe Doctrine. This president made Henry Clay his Secretary of State. For 10 points, name this sixth president of the United States, the son of the second president.**

ANSWER: John Quincy Adams [or J.Q. Adams; prompt on Adams; do not accept or prompt on "John Adams"]

080-14-101-05104

BONUS: What country was first led by Syngman Rhee and saw its president Park Chung-hee assassinated in 1979?

ANSWER: South Korea

030-14-101-0510-11

5. **The concentration of this compound is plotted on the Keeling curve. This compound was released from Lake Nyos after a limnic eruption in 1986. This compound drives ocean acidification because it reversibly forms carbonic acid when dissolved in water. This compound is fixed by the (*) Calvin cycle and, after water vapor, it is the second most abundant greenhouse gas in the Earth's atmosphere. For 10 points, identify this compound with chemical formula CO₂.**

ANSWER: carbon dioxide [or CO₂ until it is read]

066-14-101-05105

BONUS: What Syfy TV-movie aroused quite a storm with its depiction of man-eating aquatic animals descending upon Los Angeles?

ANSWER: Sharknado

052-14-101-0510-11

6. **This baseball player was the first of Carl Hubbell's five consecutive strikeouts at the 1934 All-Star Game. This player hit his legendary "Called Shot" against the Cubs during the 1932 World Series. This player was the first to hit three home runs in one (*) World Series game. This outfielder held the record for most career home runs until Hank Aaron passed him in 1974. For 10 points, name this legendary Yankees outfielder, who was nicknamed the "Great Bambino."**

ANSWER: "Babe" Ruth [or George Herman Ruth, Jr.; prompt on the Sultan of Swat; prompt on the Great Bambino until it is mentioned]

186-14-101-05106

BONUS: In August 2013, Amazon CEO Jeff Bezos purchased what newspaper for 250 million dollars cash?

ANSWER: *The Washington* Post [or WP]

190-14-101-0510-11

7. **The Second Great Awakening was bolstered by this state's Cane Ridge Revival. Leonidas Polk's occupation of this state led it to break its neutrality in the Civil War. Richard Henderson founded the Transylvania Colony in this state with the help of a trail (*) blazed by Daniel Boone. A politician from here created the "American System" to promote industrial development. For 10 points, name this state, home to Henry Clay.**

ANSWER: Kentucky

232-14-101-05107

BONUS: What classic Hollywood film is set in World War II-era Africa and stars Humphrey Bogart as club owner Rick Blaine?

ANSWER: Casablanca

052-14-101-0510-11

8. **The *Ars Magna* of Girolamo Cardano contained a formula for solving polynomials of this degree. An alkyne is defined by the presence of this type of bond. This number of non-collinear points is required to define a (*) plane. The faces of a tetrahedron each have this many edges. This is the smallest number by which a number is divisible if the sum of its digits is divisible by this number. Lithium has this many protons. For 10 points, identify this first odd prime number.**

ANSWER: three [or triple; or cubic]

066-14-101-05108

BONUS: What conical flask found in laboratories is named for a German chemist?

ANSWER: **Erlenmeyer** flask

052-14-101-0510-11



SET A:

1. BONUS: What pair of students kidnapped and killed Bobby Franks and were defended at their trial by Clarence Darrow?

ANSWER: Nathan **Leopold** and Richard Albert **Loeb** [prompt if only one name is given]

233-14-101-0510-12

2. BONUS: What composition by Maurice Ravel consists of a gradual crescendo as the orchestra plays the same melody eighteen times in a row?

ANSWER: ***Bolero***

190-14-101-0510-12

3. BONUS: Name the Stoic Roman Emperor who wrote a series of philosophical reflections titled the *Meditations*.

ANSWER: **Marcus Aurelius** Antoninus Augustus

190-14-101-0510-12

4. BONUS: This is a 20-second calculation question. If a square is inscribed in a circle of radius 6, what is the arclength between two adjacent vertices of the square?

ANSWER: **3 pi** [or **three times pi**]

190-14-101-0510-12

SET B:

1. BONUS: What Chilean island is known for its moai (MOH-eye) statues?

ANSWER: **Easter** Island [or **Rapa Nui**; or Isla de **Pascua**]

023-14-101-0510-12

2. BONUS: What nematode studied by Sydney Brenner is often used as a model organism?

ANSWER: ***C. elegans*** [or ***Caenorhabditis elegans***]

233-14-101-0510-12

3. BONUS: Roderick dies after Madeleine, who had been buried under the title structure, reappears, in what short story by Edgar Allan Poe?

ANSWER: "The **Fall of the House of Usher**"

192-14-101-0510-12

4. BONUS: This is a 20-second calculation question. If one were to take the jacks, queens, kings, and aces out of a standard deck of cards, what is the probability that the card on top of the new deck is a club?

ANSWER: **1/4** [or **0.25**; or obvious equivalents]

003-14-101-0510-12



9. In 2013, this country's president engaged in several legal conflicts with Grupo Clarin, which is targeted by a new law on media ownership. This country seized the assets of Spanish oil company Repsol in 2012, and was warned of an IMF "red card" in 2013 after producing false (*) data on inflation and GDP. For 10 points, name this country which has been governed since 2003 by one family, since Nestor Kirchner was succeeded by his wife Cristina Fernández.

ANSWER: Republic of Argentina

019-14-101-05109

BONUS: What cult leader set up a namesake town in Guyana and ordered his followers to commit mass suicide via poisoned Kool-Aid?

ANSWER: Jim Jones

233-14-101-0510-11

10. One novel by this author compares the lives of Chambers and Tom Driscoll after the two are switched at birth. In one novel by this author, Edward uses the Great Seal of England to prove his identity after he swaps lives with Tom Canty. In another of his novels, Miss Watson's slave (*) Jim escapes and travels with the title character down the Mississippi. For 10 points, name this author of *Pudd'nhead Wilson*, *The Prince and the Pauper*, and *The Adventures of Huckleberry Finn*.

ANSWER: Mark Twain [or Samuel Langhorne Clemens]

140-14-101-05110

BONUS: What novel featuring Ras the Exhorter and the Battle Royal was written by Ralph Ellison?

ANSWER: Invisible Man

023-14-101-0510-11

11. This statesman was descended from the Alcmaeonidae. The expulsion of Cimon and Ephialtes's murder let him to consolidate power in 461 BCE. This leader's efforts saw the Delian League turn into an empire that rivaled Sparta and led to the (*) Peloponnesian Wars. Three years before defeating Thucydides in 444 BCE, he started the building of the Acropolis and Parthenon. For 10 points, name this Athenian statesman and leader of that city's Golden Age.

ANSWER: Pericles

147-14-101-05111

BONUS: What operon found in *E. coli* is used to metabolize the sugar found in milk?

ANSWER: lac operon

233-14-101-0510-11

12. Bradford Washburn went to this mountain to prove Frederick Cook never climbed it. It is located in a national park near the city of Healy. This peak's name is vigorously protected by Congressmen from Ohio despite its home state wishing to change it. This mountain was named as a (*) political statement by a gold prospector. Referred to by the Athabaskans as "Denali," it was first seen by George Vancouver. For 10 points, name this highest mountain in North America.

ANSWER: Mount McKinley [or Mount Denali until it is read]

052-14-101-05112

BONUS: What first virus to be discovered causes oddly-colored leaves on a certain cash crop?

ANSWER: **tobacco mosaic** virus [or **TMV**]

233-14-101-0510-11

13. **Rainer Maria Rilke's "The Archaic Torso of Apollo" is written in this form. Amoretti and Astrophel and Stella are two examples of "sequences" of works in this form, which often contain a change in tone called the volta, or "turn."** (*) Petrarch developed the "Italian" form of this type of poem, whose "English" counterpart is exemplified by a poem beginning, "Shall I compare thee to a summer's day?" For 10 points, name these 14-line poems, many of which were written by Shakespeare.

ANSWER: **sonnets**

080-14-101-05113

BONUS: What piece by Pyotr Tchaikovsky includes excerpts from "La Marseillaise" and "God Save the Tsar" and commemorates the Battle of Borodino?

ANSWER: **1812 Overture** [or *The Year 1812*; or **Festival Overture in E flat major**]

030-14-101-0510-11

14. **This composer wrote the second movement of one of his piano concertos with the soprano Constantia Gladkowska in mind. A waltz written by this composer was inspired by the sight of George Sand's dog chasing its tail. This composer of the (*) "Minute Waltz" created a piece in which the right hand only plays black keys, and he wrote nearly seventy mazurkas.** For 10 points, name this Polish-born French composer who created the "Black Key" and "Revolutionary" etudes.

ANSWER: Frederic Francois **Chopin** [or Fryderyk Franciszek **Szopen**]

023-14-101-05114

BONUS: This is a 30-second calculation question. It costs \$8.50 to buy two hamburgers and a soda. It costs \$16.50 to buy three hamburgers and three sodas. What is the price of a hamburger?

ANSWER: **\$3.00** [or **three dollars**]

003-14-101-0510-11

15. **Richard Lawrence tried to assassinate this president. This president won a battle two weeks after the Treaty of Ghent was signed. This "Hero of New Orleans" fought against an institution led by Nicholas Biddle and lost the 1824 election due to a compromise that was dubbed the (*) "Corrupt Bargain."** This signer of the Indian Removal Act also fought the Second Bank of the United States. For 10 points, name this seventh president, who was nicknamed "Old Hickory."

ANSWER: Andrew **Jackson**

186-14-101-05115

BONUS: "Hollywood" for the film industry or "the White House" for the president's office are examples of what figure of speech, where an object or concept is identified by a characteristic of it?

ANSWER: **metonymy**

121-14-101-0510-11

16. **This character is first described by Richard Enfield, who mentions him ostentatiously signing a check. This man's suicide note is read by the lawyer Utterson, and Dr. Lanyon tries while trying to save him. He tramples a young girl without mercy and uses his cane to murder Sir Danvers Carew. This man eventually no longer requires a (*) potion in order to transform into his fiendish counterpart.** For 10 points, name this scientist invented by Robert Louis Stevenson who transforms into the evil Mr. Hyde.

ANSWER: Henry **Jekyll** [or **Henry** Jekyll; accept **Hyde** until mentioned; accept **Edward** until "Hyde"]

052-14-101-05116

BONUS: Which fundamental force is mediated by gluons and holds together particles in the atomic nucleus?

ANSWER: nuclear **strong** force

190-14-101-0510-11



17. Enyalios was a Mycenaean deity who was often thought to be either this god or his son. With Otrera, this god's offspring included a woman whom Achilles fell in love with after slaying, the Amazon Penthesilea. After Helios discovered him, this god was trapped in a very fine (*) net by his lover's jealous husband Hephaestus. This god had the children Phobos and Deimos after an affair with his sister Aphrodite. For 10 points, identify this Greek god of war.

ANSWER: Ares

233-14-101-05117

BONUS: What language was used in the plays of Karel Capek (CHAH-pek) and Vaclav Havel?

ANSWER: Czech

080-14-101-0510-11