

1. Alternatives to the most common method for producing this element include one developed by REC that converts 3 atoms of its tetrachloride to one atom of its pure form. Different kinds of that pure form include upgraded metallurgical-grade and solar-grade. This element is reacted with methyl chloride to create precursors to synthetic polymers in the Muller-Rochow process. Those precursors contain this element and oxygen as their backbone and include PDMS. The photoactive region of most charge-coupled devices consists of a layer of this element. After oxygen, it is the second most abundant element in Earth's crust, and quartz is composed of its dioxide. For 10 points, name this element found directly below carbon on the periodic table, which is most commonly used in semiconductor devices such as microchips.

ANSWER: **silicon** [or **Si**]

024-09-12-09102

2. This deity touched the four cardinal points with her fingers and was held up by her father, whom she arched over. Depictions of this deity included a vase above her head and were located on the inside lids of sarcophagi, where she would watch over the deceased. On the three unlucky, one lucky, and one ambiguous days of the calendar, she gave birth to her children, one of whom entered her mouth in the evening and exited her vulva in the morning, and was thus born every day. This sky goddess had skin scattered with stars and she was the daughter of Shu and Tefnut. For 10 points, identify this mother of Isis and Osiris, the consort of Geb.

ANSWER: **Nut**

030-09-12-09103

3. The comma and semicolon derivatives act on these. Absolute ones are relative ones of weight zero. One manipulation technique of these is called index gymnastics. Antisymmetric ones change sign upon changing the order of two components. In Lorentzian spaces, the covariant and contravariant order of them are not the same, unlike in three-dimensional space. These can be contracted to produce vectors. The product of two of these is in general a new one with rank equal to the sum of their ranks. For 10 points, name these generalizations of scalars and vectors; mathematical objects generally representable as matrices.

ANSWER: **tensors** [prompt on **matrices**]

001-09-12-09104

4. The far left of this painting is dominated by the profile of a man wearing a top hat, whose face is framed by one of the two windows at left that light the scene. Its artist's signature can be seen in the lower right, written on a crate that supports a black hat. Four people are in the foreground, and directly behind them is a group of men wearing black top hats with their backs facing the viewer. From right to left, the foreground of this painting depicts a young child sleeping, an old woman carrying a basket, and a young woman breastfeeding her baby. For 10 points, name this painting that depicts the huddled poor masses on a train, a work by Honore Daumier.

ANSWER: *The **Third-Class Carriage*** [or *Le **Wagon de troisième classe***]

064-09-12-09105

5. This poet wrote about the self-mutilation of the frenzied Attis, a priest of Cybele, in a poem written in the rare galliambic meter. This poet claimed that the words of a woman should be written on the wind and running water in one poem, and he began one of his elegiac couplets with the phrase “I hate and I love.” His works were preserved in the manuscript Codex Romanus and are collected in the Carminia. In another poem he references a night of never ending sleep before asking for a thousand kisses, then a hundred, then another thousand. He vulgarly assaulted his critics in his censored “Carmen 16” and coined the phrase *ave atque vale* in a poem written after the death of his brother. For 10 points, name this elegiac Roman poet of many poems to Lesbia.

ANSWER: Catullus

015-09-12-09106

6. Under one position, this man issued a license to the funeral directors association in his state to manage a trust fund and alleged Ponzi scheme, according to an ongoing lawsuit against that body. This man dismissed Mary Kenney’s memo identifying errors in the investigation of death row prisoner Rolando Cruz, although George Ryan pardoned that man and declared a moratorium on death penalties. Under Senate Rule 2, Nancy Erikson declared invalid a move by Rod Blagojevich to fill this man into a certain position. For 10 points, name this junior senator from Illinois.

ANSWER: Roland Wallace Burris

020-09-12-09107

7. In one scene in this work, Eunice describes an investigator who helps the protagonist track down a woman he is infatuated with. That investigator, Chilo, is horrified when he discovers an acquaintance burning to death. In one of the final scenes in this work, Chilo has his tongue torn out and is killed by a bear. Another character is served by a giant named Ursus and is herself the daughter of a barbarian king. This novel tells of the love affair between the soldier Marcus Vinicius and the beautiful Christian Ligia, who are ultimately persecuted by Poppaea and Nero. For 10 points, name this historical novel set in Roman times, the best known work of Henryk Sienkiewicz.

ANSWER: Quo Vadis: *A Narrative of the Time of Nero*

052-09-12-09108

8. A Senate Subcommittee investigated how the D.C.-based Riggs Bank helped this man illegally launder his money. One of his political opponents, Ricardo Lagos, went on TV in 1987 to denounce him with the so-called “finger” speech. This leader was also opposed by the group FPMR, a patriotic front named for Manuel Rodriguez. The Rettig Report investigated this man’s involvement with the “Caravan of Death” and for establishing a torture center at the Villa Grimaldi. This man presided over what Milton Friedman called an economic “miracle” with the help of his advisers, the “Chicago Boys,” who reversed the Marxist policies of his predecessor. For 10 points, name this man who overthrew Salvador Allende in 1973 and until 1998 served as a brutal dictator of Chile.

ANSWER: Augusto Pinochet Ugarte

052-09-12-09109

9. The eighth and ninth chapters of this book argue that the evolution of society is impeded by the conservation of socially archaic traits. This book's second chapter describes how the perceived difference between the drudgery of women's work and the exploit of men's work led to the development of the central institution, which preserves the predatory instinct instead of the instinct of workmanship. This book argues that invidious distinctions motivate people to demonstrate status by deliberately wasting money, thereby showing that they are part of the title institution, whose members are exempt from hard labor. For 10 points, name this 1899 book by Thorstein Veblen.

ANSWER: *The Theory of the Leisure Class*

022-09-12-09110

10. The protagonist of this novel becomes physically sick after learning that the name of a prostitute he had visited is Sarah. The servant Sam Farrow betrays the protagonist by not delivering a letter, ensuring himself the maid Mary's hand in marriage and a job in a department store. The narrator of this novel turns back his watch fifteen minutes to reveal a different ending, in which the protagonist doesn't have a daughter named Lalage and doesn't reconcile with his lover. Its protagonist is an amateur paleontologist who ignores the warnings of Dr. Grogan and breaks off his engagement with Ernestina Freeman after meeting the title character on a wharf. For 10 points, name this novel by John Fowles in which Charles Smithson falls in love with the title character, Sarah Woodruff.

ANSWER: *The **French Lieutenant's Woman***

015-09-12-09111

11. The second to last section of this piece includes timpani representing the pulse of a ship's engines and clarinets quoting Mendelssohn's overture *Calm Sea and Prosperous Voyage*. Another section of this piece uses woodwinds to depict a woman's characteristic stutter, and is named for the sister of Fiordiligi in *Così fan tutte*. This piece uses trills played by the oboe to represent the laugh of Winifred Norbury, and depicts the barking of a bulldog who jumped in the Wye River in its section "G.R.S." Its sections are based on a hidden theme that some have identified as "Rule, Britannica," and include a tribute to August Jaeger titled "Nimrod." For 10 points, name this orchestral work which depicts the close friends of its composer, written by Edward Elgar.

ANSWER: ***Enigma Variations*** [or ***Variations on an Original Theme***; or ***Elgar's Op.36***]

030-09-12-09112

12. One feature of some of these is extents. They can use index, linked, or contiguous allocation. Fully journaled ones allow for optimal fault recovery, but many only journal metadata. Unix-like ones often use inodes and, like databases, arrange data using variations on B-trees. Commonly, their basic units are called clusters and blocks; if the units corresponding to a given item are scattered in one, that one is fragmented. They must be mounted before use. For 10 points, name these protocols for organizing data on storage devices like hard drives, examples of which include Reiser, ext2 and 3, and FAT.

ANSWER: **file systems** (prompt on **FSs**)

001-09-12-09113

13. Among the members of this group were William Trautmann and Benjamin Fletcher. This group's tactic of "Free Speech Fights" led to the Everett Massacre. A man executed in Salt Lake City on flimsy evidence who was a part of this group was nicknamed the "troubadour of discontent." That member was Joe Hill. Another prominent member was accused of murdering former Idaho governor Frank Steunenberg. That member helped organize the Paterson Silk Strike and the 1912 Lawrence Textile Strike. For 10 points, name this international labor union prominent early in the twentieth century that was once led by Bill Haywood and whose members are referred to as Wobblies.

ANSWER: **Industrial Workers of the World** [or **IWW**; or **Wobblies** early]

064-09-12-09114

14. This author opened one collection with the line "Omissions are not accidents." She accused "You crush all the particles down into close conformity, and then walk back and forth on them" in her poem "To a Steam Roller." She wrote about the relationship between a "turquoise sea of bodies" and a seaside cliff in a poem about animals who "wade / like black jade," which shares a title with a poem by this author's friend Elizabeth Bishop. This author of "The Fish" called for works that present "imaginary gardens with real toads in them" in a poem that claims "there are things that are important beyond all this fiddle," although the title genre has "a place for the genuine." For 10 points, name this American poet who claimed "I too, dislike it" in her poem "Poetry."

ANSWER: Marianne **Moore**

015-09-12-09115

15. In a commentary on this text, Sayana developed an accurate estimate of the speed of light. Its tenth section contains a poem stating that neither being nor non-being existed before creation. Section 3.62.10 of this text, which contains the Nasadiya sukta, consists of a prayer beginning "om bhur bhuvah svah." A hymn in this text is the first source for the Pururavas and Urvashi story. The Gayatri Mantra is found in this text, which is divided into ten mandalas, with one dedicated to soma. Consisting of hymns to Agni and Indra and named for the "wisdom of the verses," for 10 points, identify this oldest Hindu sacred text, the earliest of the four Vedas.

ANSWER: **Rigveda** [or the **Wisdom of the Verses** before mentioned]

004-09-12-09116

16. An entity modeled after this organization was established in Shanghai in 1967, and its commander in chief was a Polish man named Jaroslaw Dabrowski. It saw the establishment of a "Women's Union for Defense and the Care of the Injured," and after this polity's fall thousands of participants were shot against a certain wall in the Pere Lachaise cemetery. It saw the adoption of the Red Flag and the Republican Calendar. Defended by the Marquis de Galliffet and destroyed by Marshall MacMahon during the Semaine Sanglante, it was led by Louis-Auguste Blanqui. For 10 points, name this socialist government that from March to May of 1871 controlled the capital of France.

ANSWER: **Paris Commune**

032-09-12-09117

17. A namesake ammonialyase of this amino acid converts it into cinnamate, and Seymour Kaufman first discovered the importance of the coenzyme tetrahydrobiopterin in this amino acid's hydroxylase. Nirenberg and Matthaei began decoding the genetic code by finding that the codon UUU encoded this amino acid. With aspartic acid it makes Aspartame. Chorismate mutase catalyzes the formation of prephenate, a precursor to both tyrosine and this other amino acid. Failure to convert this amino acid into tyrosine results in a buildup of phenylpyruvic acid in the metabolic disorder PKU. For 10 points, name this amino acid abbreviated Phe.

ANSWER: **phenylalanine** [prompt on **Phe** and **F**]

001-09-12-09118

18. This event saw the arrest of such individuals as Leopold Figl and Franz Olah. Cardinal Theodore Innitzer was noted for his cooperation during this event which violated terms set in the Treaty of Saint-Germain-en-Laye. Prior to this event, President Wilhelm Milkas opposed the appointment of Arthur Seyss-Inquart as Minister of the Interior. This event occurred four years after the assassination of Engelbert Dollfus and led to the resignation of Chancellor Kurt Schuschnigg, who unsuccessfully tried to hold a referendum regarding annexation. For 10 points, name this 1938 takeover of Austria by Nazi Germany.

ANSWER: **Anschluss**

064-09-12-09119

19. In one of this composer's operas, a queen emerges from a tent and sings the "Hymn to the Sun," and the warnings emitted by the title object are represented by a muted trumpet. In the third act of one of this composer's operas, acrobats perform the "Dance of the Tumblers" for Berendey. This composer wrote an opera in which Lel and Mizgir compete for the love of the title character, the daughter of Forest Sprite and Grandfather Frost. In his final opera, the disastrous invasion of Shemakhan results in the murders of the Astrologer and King Dodon, who is pecked to death by the title bird. For 10 points, name this Russian composer of *The Golden Cockerel* and *The Snow Maiden*, whose opera *The Legend of Tsar Saltan* contains "The Flight of the Bumblebee."

ANSWER: Nikolay **Rimsky-Korsakov**

019-09-12-09120

20. Elizabeth Anscombe coined the term "consequentialism" in a 1958 essay about the modern type of this field of philosophy. Henry Sidgwick outlined egoism, intuitionism, and universalism as the methods of this philosophical field. Joseph Fletcher proposed a type of this based on achieving agape (uh gah PAY), which he called its "situational" type. Peter Singer wrote a book about the "practical" kind of this field, which considers the problem of whether to divert a trolley in the path of one person in order to save the lives of five others. For 10 points, name this branch of philosophy which considers how to determine right from wrong.

ANSWER: **ethics** [or **morals**; or **morality**]

004-09-12-09121

21. For a two-body system under a force of this kind, the Runge-Lenz vector is exactly conserved. According to Bertrand's theorem, among central forces, these are the only decaying ones that admit stable, closed orbits. Conservative forces of this type correspond to potentials that fall off directly with distance because taking the gradient of such a potential yields a radial vector with this dependence on radius. For 10 points, name this type of force that decreases with a certain power of distance, as exemplified by gravity and electromagnetism.

ANSWER: **inverse-square** forces [or equivalents like **one over distance squared**; or **one over r-squared**; or **r-to-the-minus-two**]

065-09-12-09122

22. The main setting of this novel is constructed by Thomas, an architect who hides a deed to a huge tract of land in Maine behind a portrait. The son of that architect mesmerizes Alice in a failed attempt to reveal the location of that deed to Gervayse. While telling the story of Alice, Holgrave accidentally hypnotizes Phoebe, the descendant of a character in this novel who dies after being cursed with the sentence "God will give him blood to drink." This novel ends with Clifford and Hepzibah leaving the title location, which was built on the former land of Matthew Maule by Colonel Pyncheon. For 10 points, name this novel by Nathaniel Hawthorne which takes place in a mansion with the title features on its roof.

ANSWER: *The **House of the Seven Gables***

004-09-12-09123

23. They were divided into the Union of Welfare, the Northern Society, and the Southern Society. Iakov Rostovtsev revealed their activities without naming names, and one of their leaders wrote the tract *Russkaya Pravda*, and called for the death of the royal family. That man was Pavel Pestel. They attempted to install Sergey Trubetskoy as a provisional leader. Their planned insurrection was gunned down in Senate Square in St. Peterburg, and their call for "Constantine and a Constitution" was thwarted. For 10 points, name this group of Russians who led a revolt against Nicholas I in 1825 in a namesake month.

ANSWER: **Decembrists** [or **Dekabrist**; or **Decembrist Revolt** or equivalents]

030-09-12-09124

1. David Chalmers devised a thought experiment in which tiny people disable a person's brain and replicate its functions to show that these beings are conceivable. For 10 points each:

[10] Name these beings which lack consciousness, but are physically and functionally identical to conscious humans. Many disputes in the philosophy of mind arise over whether they possibly exist.

ANSWER: philosophical **zombies** [or **p-zombies**]

[10] Arguments in favor of the existence of philosophical zombies support this position, which claims that minds and bodies are two fundamentally different things. Rene Descartes was a proponent of this position, which is usually contrasted with monism.

ANSWER: **dualism**

[10] The possibility that everyone else in the world is a zombie is a form of the philosophical problem of whether these entities exist. Solipsism resolves that problem by arguing that these entities do not exist.

ANSWER: the problem of **other minds** [or clear knowledge equivalents that mention **minds**]

004-09-12-09201

2. Answer some questions about the Confessing Church movement, for 10 points each:

[10] This Lutheran pastor was a major figure in the rise of the Confessing Church in Germany. He wrote noted spiritual letters from prison after being imprisoned for participating in a conspiracy against Hitler and would later be executed by the Nazis.

ANSWER: Dietrich **Bonhoeffer**

[10] This other Confessing Church leader initially supported Hitler, but later opposed him and was himself arrested. He is best known for making a statement about how “they came first” for various groups, but he didn’t speak up because he wasn’t one of them.

ANSWER: Martin **Niemoller**

[10] An unrelated Confessing Movement has occurred in the United States among members of this denomination. Leaders of the movement quote the denomination’s founder, John Wesley.

ANSWER: **Methodism** [accept **United Methodist**]

052-09-12-09202

3. This country was ruled by the Salo Republic during World War II, and its period of prolonged violence beginning in the late 1960s is often referred to as the Years of Lead. For 10 points each:

[10] Name this Western European nation, which was terrorized by the Red Brigades in the 1970s.

ANSWER: Republic of **Italy**

[10] The Red Brigades kidnapped and murdered this former Italian Prime Minister in 1978, ending the "Historic Compromise" between the Communists and Christian Democrats.

ANSWER: Aldo **Moro**

[10] This man is the current Prime Minister of Italy. He came to power at the head of Forza Italia and is known for his affection for Noemi Letizia and rivalry with Romano Prodi.

ANSWER: Silvio **Berlusconi**

015-09-12-09203

4. The day after these riots were put down, a city ordinance made wearing the namesake clothing a crime punishable by a jail sentence. For 10 points each:

[10] Name this 1943 clash between white servicemen and Mexican-American civilians.

ANSWER: **zoot suit** riots

[10] The zoot suit riots occurred in this city which later saw riots in Watts and in response to the beating of Rodney King.

ANSWER: **Los Angeles**

[10] Racial tensions had reached a different part of Los Angeles, Little Tokyo, the year before when the U.S. Army enforced this Executive Order that mandated the internment of all Japanese nationals and citizens of Japanese ancestry.

ANSWER: Executive Order **9066**

003-09-12-09204

5. One zoo in this city was entirely dedicated to birds of prey, and several tzompantli adorned its palace complex. For 10 points each:

[10] Name this city that was divided into four campan, one of which included the Templo Mayor. It was located on an island in Lake Texcoco, which contained its floating gardens.

ANSWER: **Tenochtitlan**

[10] Tenochtitlan was the capital city of this empire, whose ruler Montezuma was killed by the men of the conquistador Hernan Cortes, who allied with the rival kingdom of Tlaxcalteca.

ANSWER: **Aztec** Empire [or **Aztec** Triple Alliance]

[10] Tlaxcala, Cholula, and Atlixco were notable victims of this series of wars triggered by a famine and fought by the Aztecs to obtain fresh human sacrifices.

ANSWER: **Flowery Wars** [or **Garland Wars**; or **xochiyaoyotl**]

020-09-12-09205

6. The challenge of counting the population for tax and voting purposes has been met by various governments throughout history. For 10 points each:

[10] In 1086, William the Conqueror ordered the composition of this index of all property-holders in England, which is found in the unabbreviated Little volume and the summarized Great volume.

ANSWER: **Domesday Book**

[10] Each of the five classes of Roman soldiers was further divided into either twenty or eighty of these groups, each of which voted as a bloc in a namesake "assembly."

ANSWER: **centuries**

[10] Increasing exemptions for clergy, nobles, and city dwellers caused great resentment over this largest tax in monarchical France.

ANSWER: the **taille** (TIE)

019-09-12-09206

7. Suppose you have several sets of measurements, potentially from different populations. For 10 points each:

[10] For each set, you can easily compute this value by finding the mean, then computing the square of the difference between each value and the mean, then adding all those up. It is thus the square of the standard deviation.

ANSWER: the **variance**

[10] Given your data and the variances you just computed, you can use this single-letter-named test developed by George Snedecor to find out if the variances of the underlying populations are equal.

ANSWER: **F** test

[10] Dixon's Q test and Grubb's test can be used to detect these, which are also the subject of Peirce's and Chauvenet's criteria. You probably should have trimmed them before making all the above computations. Oops!

ANSWER: **outliers** [prompt on things like **extreme values**]

064-09-12-09207

8. This six-part poem claims that "The soul has to stay where it is, even though restless." For 10 points each,

[10] Name this poem which remarks that "Pope Clement and his court were stupefied" by the title painting, which depicts "the right hand bigger than the head, thrust at the viewer."

ANSWER: "**Self Portrait in a Convex Mirror**"

[10] The author of "Self Portrait in a Convex Mirror," John Ashbery, was a member of a "school" named for this state. Novels set in this state include Edith Wharton's *The Age of Innocence* and Henry James's *Washington Square*.

ANSWER: **New York**

[10] Stephen Burt wrote a sestina inspired by Ashbery for this publishing house's online journal, which until 2007 only published sestinas. It also publishes quirky lists, and its title refers to Timothy, who claimed to be the uncle of its founder, Dave Eggers.

ANSWER: **McSweeney's**

063-09-12-09208

9. Name the following about paintings by John Singer Sargent, for 10 points each.

[10] The Sargent painting of the four daughters of this man has been dubbed "four corners and a void." The four daughters of this man are arranged across a room that contains many Japanese vases.

ANSWER: Edward Darley **Boit**

[10] This Sargent portrait is of a pale-skinned socialite in a black satin dress. Despite the anonymity of its title woman, it was obvious to many it was a portrait of banker Pierre Gautreau's wife.

ANSWER: *Portrait of **Madame X*** [prompt on *Portrait of Mme. Virginie **Gautreau***]

[10] This Sargent portrait, allegedly painted during breaks from a tennis game, shows two young girls playing with Chinese lanterns in a garden. The title is lifted from a song and is apparently a pun on the names of girls and flowers.

ANSWER: **Carnation, Lily, Lily, Rose**

052-09-12-09209

10. This work calls habit “Circe’s drink” in a section about experience and repeatedly echoes the phrase “What do I know?” For 10 points each:

[10] Name this collection which contains the line “one calls 'barbarism' whatever he is not accustomed to” in its section “Of Cannibals.”

ANSWER: Essays

[10] The *Essays* were written by this pioneer of the form who wrote “An Apology for Raymond Sebond.”

ANSWER: Michel de Montaigne

[10] Montaigne was deeply influenced by this Greek thinker, whose *Outlines of Pyrrhonism* and *Against the Mathematicians* inform much of the modern understanding of skeptic philosophy.

ANSWER: Sextus Empiricus

015-09-12-09210

11. It was introduced in the paper "Can quantum-mechanical description of physical reality be considered complete?" For 10 points each:

[10] Name this thought experiment which argued that quantum mechanics conflicts with the principle of locality. Bell's theorem implies that it is no paradox at all.

ANSWER: the Einstein-Podolsky-Rosen paradox

[10] In particular, Bell's theorem shows that local hidden variable theories cannot explain this principle, which says that some pairs of properties, such as position and momentum, cannot both be known to arbitrary precision.

ANSWER: Heisenberg uncertainty principle (accept either underlined part)

[10] The Heisenberg uncertainty principle applies in general to two operators if they do not have this property. For two objects A and B with this property, A times B equals B times A.

ANSWER: commutativity (accept word forms like commutative or commute)

024-09-12-09211

12. These curves are shifted to the right by an increase in income or an increase in the size of the consumer market. For 10 points each:

[10] Name these curves that graph the price of an item versus the price a consumer is willing to pay for it.

ANSWER: demand curve

[10] In this type of good, demand increases as income rises, but at a rate slower than the rate of increase in income. Their elasticity of demand is positive but less than one.

ANSWER: normal good

[10] The general idea of supply and demand was expanded upon by this British economist in his 1890 work *Principles of Economics*. He also introduced the term "marginal utility" and is the namesake of a type of demand.

ANSWER: Alfred Marshall

064-09-12-09212

13. This man led a conservative camp in the War of the Romantics against the progressive forces of Franz Liszt. For 10 points each:

[10] Name this German composer, who composed the choral work *A German Requiem*. Out of thanks for being awarded an honorary degree from the University of Breslau, he composed the *Academic Festival Overture*.

ANSWER: Johannes **Brahms**

[10] This Brahms composition, set entirely in the key of D minor, was intended as the companion piece for *Academic Festival Overture* to represent a different emotion. Brahms disliked its title, preferring the simpler adjective "Dramatic."

ANSWER: ***Tragic Overture***

[10] Brahms collaborated with Robert Schumann and Albert Dietrich to compose this piece for his friend Joseph Joachim. Its title refers to Joachim's philosophical motto of "Free but lonely."

ANSWER: ***F-A-E Sonata***

052-09-12-09213

14. This character learns to read from one of his mother's scientific manuals and the complete works of Shakespeare. For 10 points each:

[10] Name this character who grows up in Malpais, falls in love with Lenina Crowne, and assaults the reporter Primo Mellon before hanging himself in a lighthouse.

ANSWER: **John** the Savage

[10] John the Savage is a character in this Aldous Huxley novel which opens in the year 632 After Ford and concerns the discontented Alpha-Plus Bernard Marx.

ANSWER: ***Brave New World***

[10] Bernard's friend is this lecturer at the College of Emotional Engineering, whose isolation stems from the fact that he is too strong and too intelligent. He quickly befriends John, making Bernard jealous.

ANSWER: **Helmholtz** Watson [or Helmholtz **Watson**]

015-09-12-09214

15. Saturn granted this deity the ability to see the past and the future. For 10 points each:

[10] Name this Roman god whose temple doors were open in times of war and closed in times of peace.

ANSWER: **Janus**

[10] The name of this early Roman god was often used as an epithet for Janus. He formed the Capitoline Triad with Mars and Jupiter and was the namesake of a hill of Rome.

ANSWER: **Quirinus**

[10] Janus saved the city when this woman betrayed Rome to Titus Tatius for jewelry. Instead, she was crushed to death upon their shields and was thrown off the rock bearing her name.

ANSWER: **Tarpeia**

032-09-12-09215

16. Its receptor mediated form uses adaptins. For 10 points each:

[10] Name this process where the cell takes in material by folding the membrane.

ANSWER: **endocytosis**

[10] Endocytosis involves the creation of these membrane bound compartments. The transport type of these compartments are also used in trafficking materials from the ER and Golgi complex.

ANSWER: **vesicles**

[10] The vesicles formed in endocytosis are often coated in this self-polymerizing, triskelion-shaped molecule.

ANSWER: **clathrin**

001-09-12-09216

17. For 10 points each, identify some notable dams found around the world.

[10] This dam on the Yangtze River is still under construction but has already generated controversy for displacing over 1 million people.

ANSWER: **Three Gorges** Dam

[10] This dam on the Parana River provides electricity for residents of both Brazil and Paraguay.

ANSWER: **Itaipu** Dam

[10] This Volta River dam was the brainchild of Kwame Nkrumah. Completed in 1965, it provides electricity for Ghana's aluminum mining industry.

ANSWER: **Akosombo** Dam

064-09-12-09217

18. There are column and thin-layer versions of this lab technique. For 10 points each:

[10] Name this separation technique that uses a stationary and mobile phase.

ANSWER: **chromatography**

[10] In thin-layer chromatography, this value is given by the distance travelled by the solvent front divided by the distance travelled by the sample.

ANSWER: **Retardation** factor [or **Rf**; or **Retention factor**]

[10] This other type of chromatography separates volatile substances by injecting the mixture into an inert carrier. A flame ionization detector can then be used to determine retention time.

ANSWER: **gas**-liquid chromatography

001-09-12-09218

19. Identify the following authors who wrote about time travel, for 10 points each.

[10] This author wrote about a writer who travels from 1897 to 1997 to learn how history regards his work. He wrote a story about an attractive woman that drives all of her Oxford suitors to suicide.

ANSWER: Sir Henry Maximilian "Max" **Beerbohm**

[10] Ralph Pendril travels back in time in this author's unfinished novel, *The Sense of the Past*. He also wrote *The Princess Cassamassima* and *The Wings of the Dove*.

ANSWER: Henry **James**

[10] This author wrote about the Eloi and Morlocks, which are observed by the Time Traveler, in *The Time Machine*. His other works include *The War of the Worlds*.

ANSWER: Herbert George **Wells**

020-09-12-09219

20. This author wrote "Half of what I say is meaningless, but I say it so that the other half may reach you" in his book *Sand and Foam*. For 10 points each:

[10] Name this Lebanese-American author of a book about the wisdom imparted by Almustafa to the citizens of Orphalese.

ANSWER: Khalil **Gibran** [or Gubran Khalil **Gubran** bin Mikha'il bin Sa'ad]

[10] In writing *The Prophet*, Gibran was influenced by this poetic work whose speaker yearns for "a jug of wine, a loaf of bread, and thou." It was written by Omar Khayyam.

ANSWER: **Rubaiyat** of Omar Khayyam

[10] This thirteenth century Persian poet studied at the university of Al-Nizamiyya, and wrote about a man dejected about having no shoes until he meets someone with no feet in his collection *Gulistan*.

ANSWER: **Sa'di**

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21. This banker was the father of Madame de Staël. For 10 points each:

[10] Name this finance minister to Louis XVI, who exaggerated the French economic surplus in his *Compte rendu*. He continued the reforms of his predecessor Jacques Turgot until his dismissal in 1781, and was reinstated to deal with the burgeoning French deficit in 1788.

ANSWER: Jacques **Necker**

[10] In 1789, Necker was dismissed and banished from France, fueling fears of a conservative coup that caused Parisians to storm this prison on July 14.

ANSWER: the **Bastille**

[10] In response to the dismissal of Necker, Camille Desmoulins jumped onto a table and delivered a speech calling French citizens to take arms against Louis XVI. Desmoulins published a newspaper named for this organization, once led by George Danton and eventually by Rene Hebert, which formally called itself the Society of the Friends of the Rights of Man and of the Citizen.

ANSWER: **Cordeliers**

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