

Cal's Mid-Spring Tournament 2018

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Tossups

1. **This man once called a group of ministers “idiots” by finding the word in a bilingual dictionary and pointing at them because he did not know the local language. This man’s popularity skyrocketed after he gave one of the first-ever journalistic interviews to *Pall Mall Gazette* writer William T. Stead (“sted”), who ran a massive headline declaring “TOO LATE!” after this man’s death. In a painting by George William Joy, this man wears a red (*) fez as he calmly looks down a staircase with a mass of soldiers armed with spears at its bottom. William Gladstone’s government suffered a massive public relations blow for failing to prevent the death of this man, which was avenged at the Battle of Omdurman. This man helped suppress the Taiping Rebellion as a commander of the Ever-Victorious Army. Soldiers commanded by the Mahdi killed, for 10 points, what British officer nicknamed “Chinese”?**

ANSWER: Charles George “Chinese” **Gordon**

<BL, European History>

2. **The wild-type state of these proteins is formed by the oxidative addition of hydrogen and is called the Janus intermediate. Stages denoted E(0) (“E-zero”) through E(8) (“E-eight”) represent the transfer of eight electrons and eight protons by these proteins. These enzymes can be inhibited at high pH when the homocitrate moiety in one of its cofactors is replaced with citrate. A set of seven operons control twenty *nif* genes, which encode a cofactor for these enzymes. Carbon monoxide can be converted into ethylene, ethane, or propane by the less common (*) vanadium form of these proteins. To prevent denaturation, leghemoglobin regulates the amount of oxygen these enzymes receive. These enzymes, which consist of two iron dimers and a molybdenum-iron tetramer, utilize the molybdenum-based cofactor FeMoco. These enzymes are primarily utilized by diazotrophs, such as *Azotobacter* and *Rhizobia*. For 10 points, name this family of enzymes that convert a namesake molecule to ammonia.**

ANSWER: **nitrogenases** [anti-prompt on MoFe protein]

<RD, Biology>

3. **A mayor of this city labeled an investigation into his administration which culminated in the firing of police chief Richard Hongisto as a “post-Watergate illness.” A 1966 race riot in this city was sparked when a white-owned cafe on Hough (“huff”) Avenue refused to serve an African-American man. After surviving a recall election in 1978, a mayor of this city failed to sell its publicly owned Municipal Light company, causing this city to default on its debt. After leaving Chicago, Eliot Ness served as Safety Director for this city, but failed to identify its namesake “torso murderer.” In 1872, John D. Rockefeller bought out 22 rival oil companies in what became known as this city’s (*) “Massacre.” This city’s economy was revitalized after George Voinovich won a 1980 mayoral election against Dennis Kucinich. The Clean Water Act was passed shortly after pollution to this city’s main river caused it to catch fire. The Cuyahoga (“ky-uh-HO-guh”) River runs through, for 10 points, what Northeast Ohio city?**

ANSWER: **Cleveland**, Ohio

<RD, American History>

4. **The Incan chosen woman Zilia is separated from her lover Aza in a feminist novel titled for these objects, written by Françoise de Graffigny (“frah-n-SWAHZ duh grah-feen-YEE”). A character in a novel named after these objects describes a king as a magician who can convince people that one crown is two crowns, and**

the Pope as an even greater magician who can convince the king that three equals one. The revelation of some of these objects prompts a woman to flee to the country, where she goes blind in one eye after contracting smallpox. A character uses the (*) back of the naked courtesan Emilie to create one of these objects, and later harasses a wealthy girl infatuated with her music teacher while helping her create one of these things. In a novel titled for these objects, a character describes how a plague kills all but two families of a savage race that learns to exercise virtue rather than desire in the section “Parable of the Troglodytes.” That novel, which documents Usbek and Rica’s journey from Persia to France, is by Montesquieu. For 10 points, what written works comprise Pierre Choderlos de Laclos’s (“shaw-dur-LOH duh lah-CLOH’s”) *Dangerous Liaisons* and other epistolary novels?

ANSWER: **letters** [accept *Persian Letters* or *Letters from a Peruvian Woman*]

<RK, Long Fiction>

5. Wallner lines run perpendicular to the direction of these features, and their origin can be surrounded by mirror, mist, and hackle regions. Beachmarks appear around the origin of these features. The domain around one of these features is considered in the J-integral. The elliptical type of these features results from the creation and coalescence of microvoids in a phenomenon called “cup and cone.” The square root of a quantity describing these features appears in the definition for a “toughness” factor symbolized KIC (“K-one-C”). “The square root of two, times surface energy density, times Young’s modulus, over pi” defines Griffith’s criterion for the formation of these features. The application of (*) shear stress parallel or normal to the plane of these features defines modes I through III of one process. Depending on their path, they can either be transgranular or travel along grain boundaries. The degree of plastic deformation during the formation of these features and the rate at which they form distinguishes the ductile and brittle types of one failure mode. For 10 points, name these small gaps or breaks in materials that form during fracture.

ANSWER: **cracks** [accept **fractures** before read]

<AK, Physics>

6. This man divided his country’s single party into three “forums” and signed Law No. 40 regulating the political parties that emerged from that system. Bread riots erupted in his country after this man was pressured by the World Bank and the IMF to cut subsidies as part of his economic policy of *infitah*. He dismissed his vice president Ali Sabri and expelled Soviet military advisers in his Corrective Revolution. Swedish ambassador Olov Ternstrom survived (*) AK-47 fire that killed this man, whose death was approved by a planner of the 1993 World Trade Center bombing known as “the Blind Sheikh.” This man was assassinated at a parade celebrating Operation Badr, his invasion of the Sinai Peninsula that began the Yom Kippur War. His country was suspended from the Arab League after he signed an agreement organized by Jimmy Carter. For 10 points, name this president of Egypt who succeeded Gamal Abdel Nasser and signed the Camp David Accords with Menachem Begin (“meh-nah-HEM BAY-ghin”).

ANSWER: Anwar **Sadat** [or Muhammad Anwar el-**Sadat**]

<JK, World History>

7. An Egyptian king tried to make a hero traveling to this place his yearly drought-prevention sacrifice, but that hero killed him. This location was home to the best known set of Epimelides (“ep-ih-MEE-luh-deez”). A duel with Ares was broken up by a thunderbolt from Zeus after Ares’s son Cynus tried to kill a hero passing through Thessaly on his way to this location. The Argonauts came across this location after they were told to carry the *Argo* across a desert. They then learned that Heracles had just been here the day before, after he had killed Busiris (“byoo-SY-riss”). A hero wrestled with the (*) shapeshifting Nereus to find this location, but did not actually go here on advice from Prometheus. Perseus stole the Graeae’s (“GRY-ee’s”) single eye and tooth to ask them how to get to this place, where he received Hermes’s winged sandals. This location was maintained by three nymphs of the sunset, and it was created by Gaia as a wedding gift for Zeus and Hera. Heracles momentarily held up the sky while Atlas went to this location for him. For 10 points, name this location involved in Heracles’s eleventh labor, the home of some golden apples.

ANSWER: **Garden** of the **Hesperides** (“heh-SPAIR-id-eez”) [accept anything mentioning **garden** and the **Hesperides**; prompt on partial answers]

<JK, Legends>

8. Tania Murray Li’s 2014 book *Land’s End* discusses how the recent shift towards this crop in the Lauje (“LAU-zhay”) highlands has led to the privatization of land and increasing inequality. Frosty pod rot and a namesake swollen shoot virus are serious diseases affecting this crop. Products of this crop are hung in a bag in the Broma process, while the van Houten (“HOW-tin”) family pioneered the use of a hydraulic press and alkaline salts to process this crop. The Harkin-Engel Protocol has been largely ineffective in combating (*) child trafficking and slavery used to produce this crop. A new method for processing a “ruby” version of this crop was introduced in 2017. West Africa produces two-thirds of the global output of this crop, the largest export commodity of Ivory Coast. This crop is fermented and ground to produce a thick “liquor,” which can then be separated into a fatty “butter” and a bitter powder. For 10 points, name this seed that is processed to make chocolate.

ANSWER: **cocoa** bean [or **cacao** bean; or *Theobroma cacao*]

<EC, Geography>

9. At the sight of stars in the night sky, a character in this story quotes Shakespeare’s lines “How far that little candle throws its beams! So shines a good deed in a naughty world.” A woman listens to the Missouri Waltz in this story shortly before encountering a woman in an elevator humming the same tune. Two characters in this story are described as “striking that satisfactory average of income, endeavor, and respectability” and going to the theater an average of 10.3 times a year, but after the husband discovers the wife hasn’t paid her (*) clothing bills, they get into a fight in which the husband’s affair with Grace Howland is brought up. The main characters of this story discover that Mr. Osborn has been abusing his wife and hear the Sweeneys’ nurse singing. In this story, Jim and Irene Westcott’s obsession with music leads them to buy the title object, which they subsequently discover allows them to listen in on other apartments. For 10 points, name this short story by John Cheever.

ANSWER: “The **Enormous Radio**”

<JN, Short Fiction>

10. A possible origin of a ceremony in this place is a legend about the patriarch St. Narcissus, who prayed over some water and miraculously turned it into oil. A notable object found in this place is a ladder placed on a ledge, which has remained in the same place for at least two centuries and is called the “immovable ladder.” Members of the Nusaybah family serve as the hereditary custodians and doorkeepers of this building. Orthodox Christians hold that a miraculous “Holy (*) Fire” appears in this building on Holy Saturday. An 1852 agreement established this building’s Status Quo, defining how it should be shared between six different Christian denominations. A small shrine in this building called the Aedicule (“EE-dih-kyool”) contains the remnants of a cave. For 10 points, name this church located in Jerusalem, which is said to contain both Golgotha and the site of Jesus’s tomb.

ANSWER: **Church of the Holy Sepulcher** [or **Church of the Resurrection** or **Church of the Anastasis**; prompt on **Calvary** or **Golgotha**; prompt on **Jerusalem**]

<WC, Religion>

11. Shane White wrote a 2015 biography of a Wall Street broker from this country who fought Cornelius Vanderbilt for control of the Accessory Transit Company. Historian Milo Quaife challenged the claim that the “Founder of Chicago” was born in this modern-day country. Political refugees from this country were housed in inhumane conditions at Camp Bulkeley, which a district court ruled unconstitutional in 1993. A music artist from this country mismanaged funds from his charity called Yéle [this country] and co-hosted the most-broadcast (*) telethon in history called *Hope for [this country] Now*. In the 1980s, the CDC listed homosexuals, heroin users, hemophiliacs, and people from this country as high-risk groups for AIDS. A creole from

this country is the third most common first language in Miami-Dade County behind English and Spanish. For 10 points, many immigrants to the U.S. fled the dictatorships of François and Jean-Claude Duvalier (“zhahn-klohd doo-vah-lee-AY”) in what Caribbean country?

ANSWER: Republic of **Haiti** [or *République d’Haiti*; or *Repiblik Ayiti*]

<EC, American History>

12. This artwork was displayed at the Met from 2007 to 2010 alongside two American paintings and Francis Bacon’s *Head I* (“one”). The “Re-Object” exhibit paired this artwork with giant paintings by its artist like *Iodomethane-13c*. Don Thompson’s book on the economics of the art world is titled in reference to this work. In one exhibit, this piece was installed in front of a giant portrait made of children’s handprints titled *Myra* by Marcus Harvey. Its artist made variations on this piece titled *The Kingdom* and *Beautiful Inside My Head Forever*. This artwork is an entry in its artist’s *Natural History* series, which also includes *Mother and Child (Divided)*. After it was sold to (*) Steven Cohen in 2004, part of this piece was replaced due to deterioration. An object shown in the window of an electrical supplies shop was exhibited at the Stuckism International Gallery to criticize this artwork, which was included in Charles Saatchi’s *Sensation* exhibit. For 10 points, *A Dead Shark Isn’t Art* parodies what Damien Hirst work consisting of a shark preserved in formaldehyde?

ANSWER: *The Physical Impossibility of Death in the Mind of Someone Living*

<WN, Painting/Sculpture>

13. A type of “voluntarism” whose name derives from this Greek word was considered conceptually impossible by Bernard Williams. Aristotle added the prefix *en-* to this word to refer to a more stable version of this concept applied to groups instead of individuals. The Septuagint renders the Hebrew word *kavod* (“kah-VOHD”), meaning “glory,” as this Greek word. It’s not *techne* (“TEK-nee”), but the distinction between *episteme* (“ep-ih-STEE-mee”) and this term is important to Plato’s epistemology. In *On Nature*, Parmenides distinguished between two “ways,” one of which is named after the word (*) *aletheia* (“ah-leth-AY-uh”) and the other of which is named after this word. A type of logic which treats belief as a modal operator has a name consisting of this word plus the letters “S-T-I-C.” For 10 points, name this four-letter Greek word for “opinion” or “belief,” from which English words beginning with the prefixes “ortho” and “hetero” derive.

ANSWER: *doxa* [accept doxastic; accept dokein]

<WN, Philosophy>

14. This system can deal with performance degradation using the AIMD (“A-I-M-D”) feedback algorithm, which leads to a characteristic “sawtooth” behavior. Reno, new Reno, and Tahoe are variants of an algorithm that is part of this system. Those algorithms that are part of this system modify the CWND size throughout their “fast-recovery” and “slow-start” phases. Calculation of the RTO (“R-T-O”) in this system can be done by algorithms named for Phil Karn or Van Jacobson. This system constantly advertises the window size and operates in units of the MSS. The header for this protocol has a 16-bit urgent flag and a 32-bit (*) sequence number field. This protocol can abruptly close a connection with RST packets and sends ACK (“ack”) packets as acknowledgement of reception. This protocol guarantees in-order delivery, unlike another protocol that is also in the Layer 4, or Transport Layer, of the OSI (“O-S-I”) model. This protocol uses a three way handshake to create flows and guarantees reliability, unlike UDP. For 10 points, name this packet transport protocol built on top of IP.

ANSWER: **TCP** [or **Transmission Control Protocol**; or **TCP/IP**; prompt on the internet or congestion control with “what protocol?”]

<AK, Computer Science>

15. One model of this process relies on TIP3P (“tip-3-P”) and TIP4P (“tip-4-P”) functions, and the initiation of this process requires the formation of a cybotactic region. Cramer and Truhlar developed SMx models of this process that better calculate a gamma-sub-*k-k*-prime parameter in an equation modeling this process. The free energy of this process includes a cavitation term in PCM models. Another “continuum” model of

this process calculates the misfit energy to extend a model using a scaling function defined in terms of epsilon. (*) COSMO (“cosmo”) and COSMO-RS (“cosmo-R-S”) model this phenomenon that is modeled in “implicit” methods by solving the Poisson-Boltzmann or Generalized Born equations, which assume a continuous dielectric constant. This process involves the creation and filling of a polar cavity in order to form namesake shells of polar molecules. For 10 points, name this process in which molecules of solute dissociate and bond to a solvent.

ANSWER: solvation [or solubility; or dissolution; or dissolve or word forms; or hydration]

<AK, Chemistry>

16. The applicability of this concept to international relations theory is outlined in a Robert W. Cox paper subtitled “An Essay in Method.” A book named after this concept distinguishes cooperation, which requires policy coordination, from harmony, which does not, and contrasts both situations with discord. The title of a book by Chantal Mouffe (“shahn-TAHL moof”) and Ernesto Laclau pairs this concept with “socialist strategy.” A theory which attributes stability in the international system to this concept was partly developed by Robert (*) Keohane (“kee-oh-HAHN”), who rose to fame with a publication of a book titled *After* [this concept]. A “war of position” can be used to dismantle this concept and establish a new historic bloc according to a thinker who theorized the “cultural” form of this concept, Antonio Gramsci (“GRAHM-shee”). For 10 points, name this term for how states maintain their dominance through indirect means or how the ruling class maintains its cultural dominance.

ANSWER: hegemony [accept cultural hegemony]

<WN, Social Science>

17. A 2016 reimagining of this ballet depicts a conflict between Landlords and migrant factory workers and was choreographed by Akram Khan. It’s not *The Nutcracker*, but John Cranko commissioned a staging of this ballet choreographed by Peter Wright that is performed today by The Royal Ballet. The first *prima ballerina* of The Royal Ballet, Alicia Markova, wrote a book on her interpretation of this ballet’s lead role. In a climactic scene in this ballet, the female lead kneels down to mimic an earlier scene by pantomiming picking petals off a flower. Léon Pillet (“lay-OHN pee-AY”) directed the premiere of this ballet, which was created as a vehicle for (*) Carlotta Grisi. Act II of this ballet is a *ballet blanc* (“blonk”) in which a group of jilted maiden spirits dressed in white are led by Queen Myrtha. In this ballet, the gamekeeper Hilarion is forced to dance and is then drowned by the Wilis (“VEE-leez”), who then attack Duke Albrecht, only for him to be saved by the enduring love of the title character. For 10 points, name this ballet about a French peasant girl who dies of a broken heart, which sets music by Adolphe Adam (“ah-DAHM”).

ANSWER: Giselle

<AK, Other Art (Dance)>

18. A character in this play asks a woman “Have you ever been to the Sahara Desert?” after comparing his love for her to a whirlwind. That character in this play claims that the “prince of emptiness, the prince of absence, the prince of desolation” reigns in the “state of catatonia” in a scene that ends with him grasping another character’s arm. A man in this play argues that the absence of his children makes Wessex Grove “not a home.” A character in this play recalls riding a (*) speedboat to read Yeats at Torcello alone, and frequently challenges another man to squash. At this play’s beginning, a character admits that she is having an affair with the never-seen writer Roger Casey during a conversation in a pub in 1977. The handwriting on a letter sent to Venice prompts a publisher to suspect his wife’s infidelity in this play, which ends with a scene at a party where a drunken Jerry declares his love for Robert’s wife Emma. For 10 points, name this Harold Pinter play whose scenes are mostly in reverse chronological order.

ANSWER: Betrayal

<JN, Drama>

19. A C-sharp minor piece by this composer symbolises the cross in its opening motif, according to musicologist John Butt. This composer used unusual combinations of signatures, such as E-flat minor and 3/2 time, or G major and 24/16 time, in a piece that inspired both the Op. 87 of Dmitri Shostakovich and a B minor arrangement by Alexander Siloti. He did not work in England, but this composer often signed his pieces with the abbreviations “J.N.J.” or “S.D.G.” Hans von Bülow (“BYOO-loh”) contrasted one of this composer’s pieces with Beethoven’s piano sonatas, which he called the (*) “New Testament.” A piece by this composer had a supposedly-incorrect harmony “fixed” by Christian Schwenke (“SHVENG-kuh”), who inserted an extra bar. A C major piece by this composer was used as the bassline in a setting of the Ave Maria by Charles Gounod (“goo-NOH”). This composer published a pair of books in 1722 and 1742, in which all twenty-four major and minor keys are spanned by pairs of preludes and fugues. For 10 points, name this composer of *The Well-Tempered Clavier*.

ANSWER: J. S. Bach [or Johann Sebastian Bach]
<EC, Classical Music>

20. In a poem, this person promises to “sing to you of the flesh you don’t have” in a conversation with death, and is “seen walking among rifles.” A book named for this man includes several letters addressed to him ending with the salutation “Love, Jack,” and includes an introduction attributed to this man even though he was long dead when the book was written. This man is compared to Don Quixote in a Yevgeny Yevtushenko poem, and inspired a Jack Spicer collection titled *After* [this man]. This man himself wrote a poem whose speaker instructs, “Sleep, (*) fly, rest: even the sea dies!” The speaker of that poem by this man sees the “terrible mothers” who “lifted their heads” and insists, “I will not see it!” in response to the “Spilled Blood” of the title event. In a poem mostly addressed to Walt Whitman, the speaker asks this man “What were you doing down by the watermelons?”; that poem is Allen Ginsberg’s “A Supermarket in California.” For 10 points, name this Spanish poet who wrote “Lament for the Death of a Bullfighter” and *Gypsy Ballads*.

ANSWER: Federico García Lorca [or Federico del Sagrado Corazón de Jesús García Lorca]
<JN, Poetry>

Bonuses

1. Answer the following about Canada's response to the Great Depression, for 10 points each:

[10] This prime minister organized work camps for many of the jobless that participated in the On-To-Ottawa trek. He was ironically nicknamed the "Iron Heel" for his opposition to communism and socialism.

ANSWER: Richard "Iron Heel" **Bennett** [or Richard Bedford **Bennett**]

[10] In response to the Great Depression, Richard Bennett set the minimum wage and established unemployment insurance as part of a social program with this two-word name. It was inspired by Franklin D. Roosevelt's response with the same name to the Depression in the United States.

ANSWER: **New Deal**

[10] This popular movement, led by William "Bible Bill" Aberhart and based on the ideas of C. H. Douglas, advocated giving away "funny money" to every single person. A political party based on this movement governed Alberta from 1935 to 1971.

ANSWER: **Social Credit** [accept **Social Credit** Party]

<IJ, European History>

2. This genre was created by the French Academy in 1717 as a compromise between two existing genres after the application of a certain artist. For 10 points each:

[10] Name this genre also contributed to by Nicolas Lancret and Jean-Baptiste Pater ("pah-TAY"). It combined the courtly depictions of fancily dressed aristocrats with lush, often Arcadian landscapes.

ANSWER: **fête galante** ("fett guh-LONT") [or **fêtes galantes**]

[10] This Rococo artist's application to the French Academy led to the creation of the genre of the *fête galante*, which he used to show lovers frolicking on the title island of Venus in *The Embarkation to Cythera* ("SITH-ur-uh").

ANSWER: Jean-Antoine **Watteau** ("vah-TOH")

[10] Earlier in his career, Watteau studied under Claude Audran ("oh-DRON"), the curator of the Luxembourg Palace. During that time, Watteau often studied and made copies of scenes from this set of paintings.

ANSWER: the **Marie de' Medici** ("mah-REE duh may-dee-SEE") cycle [accept anything referencing **Marie de' Medici**] (by Peter Paul Rubens)

<AK, Painting/Sculpture>

3. A play's opening stage directions explain its "rather dim and poetic" interior by claiming that this concept "is seated predominantly in the heart." For 10 points each:

[10] Name this concept that is equated to the play itself in an opening narration delivered by a man who calls himself "the opposite of a stage magician" who gives "truth in the pleasant disguise of illusion."

ANSWER: **memory**

[10] That speech by Tom Wingfield opens this "memory play" by Tennessee Williams. It ends with Tom proclaiming "nowadays the world is lit by lightning!" and telling Laura to blow the candles out.

ANSWER: *The **Glass Menagerie***

[10] When Tom initially introduces Laura, Jim responds by saying "I didn't know that [this person] had a sister!", playing on the nickname that Jim gave Tom after realizing he wrote poems in his spare time at the shoe warehouse.

ANSWER: William **Shakespeare**

<RK, Drama>

4. After being captured, this leader was sentenced to be drawn and quartered, but he somehow survived so he was just beheaded instead. For 10 points each:

[10] Name this leader who led a large indigenous uprising in the Viceroyalty of Peru in the 1780s to protest Spanish treatment of the natives. He took his name from the last leader of the Incan empire.

ANSWER: **Túpac Amaru** II [or José Gabriel **Condorcanqui**]

[10] After suppressing the rebellion, Spanish magistrate José Antonio de Areche instituted a series of anti-native reforms, which included banning this primary language of the Inca people.

ANSWER: **Quechua** (“KETCH-wah”) [or **Runasimi**]

[10] This wife of Túpac Amaru II played a key role in the organization and military aspects of the rebellion. She served as the primary leader of the rebel-held city of Tungasuca.

ANSWER: Micaela **Bastidas** Puyucahua

<RD, World History>

5. Answer some questions about Fraser Stoddart’s syntheses of interlocked molecules like Borromean rings and 2-catenane, for 10 points each:

[10] Many of Stoddart’s syntheses rely on these non-covalent interactions, which can be explained through direct interactions in Houk and Wheeler’s model and are caused by quadrupole interactions in the T-shaped dimer of a molecule.

ANSWER: pi–**pi stacking** [or **pi–pi interactions**]

[10] Stoddart’s synthesis of 2-catenane threads a derivative of this cation through a crown ether. This molecule has chemical formula C₅H₅NH⁺, and its chlorochromate salt is used for oxidation of alcohols.

ANSWER: **pyridinium** [do not accept or prompt on “pyridine”]

[10] The 2-catenane synthesis relies on this molecule donating electrons to pyridinium through pi–pi interactions. Pi stacking is also exhibited by the sandwich and parallel-displaced dimers of this simplest aromatic hydrocarbon with formula C₆H₆.

ANSWER: **benzene**

<AK, Chemistry>

6. Answer the following about reading in ancient Rome, for 10 points each:

[10] This member of the Roman family was responsible for teaching children how to read. This Latin title designated the oldest male member of the family, and under Roman law, had life-and-death power over the whole family.

ANSWER: **pater familias**

[10] Roman fervor for book collecting is often illustrated with the example of Sulla transferring the library of Apellicon of Teos to his own personal estate of this type, which are ancient Roman country homes.

ANSWER: **villa**

[10] Private reading was a component of this concept, which is often translated as “leisure” or “free time.” Cicero used the phrase “[this concept] *cum dignitate* (“koom dig-nee-TAH-tay”),” suggesting that retired officials should not be ashamed of engaging in leisure.

ANSWER: **otium** [accept **otium cum dignitate**]

<IJ, European History>

7. After rejecting a paper outlining this hypothesis, the *Journal of Geophysical Research* wrote to one of its developers that it “seems most appropriate over martinis” than the journal. For 10 points each:

[10] Name this hypothesis which claims that the presence of magnetite in the Earth’s crust causes magnetic striping due to geomagnetic reversals.

ANSWER: **Vine–Matthews–Morley hypothesis** [accept names in any order]

[10] The Vine–Matthews–Morley hypothesis provides evidence for this process, in which new oceanic crust is extruded from mid-ocean ridges.

ANSWER: **seafloor spreading** [prompt on **continental drift** or **plate tectonics**]

[10] During the Permian period, this fern existed throughout the continent of Gondwana. “Tongue shaped” fossils of this fern on Australia, Antarctica, South America, South Africa, and India provide evidence for continental drift.

ANSWER: **Glossopteris**

<RD, Other Science (Earth)>

8. In 2008, to celebrate the fiftieth anniversary of this composer's death, the Last Night of the Proms featured a performance of a piece by this composer instead of the traditional Henry Wood piece on the same subject. For 10 points each:

[10] Name this composer of *Toccata marziale* ("marts-ee-AH-lay") and *Flourish for Wind Band*.

ANSWER: Ralph ("RAYF") **Vaughan Williams**

[10] Vaughan Williams wrote a concerto in F minor for this instrument. The concerto premiered in 1954 and has since become a staple of the repertoire for this largest, lowest-range brass instrument.

ANSWER: **tuba** [or **bass tuba**]

[10] This Vaughan Williams piece begins and ends with the harp imitating the Westminster chimes. Its title is deceptively similar to that of a Haydn symphony.

ANSWER: **A London Symphony** [or **Symphony No. 2**; do not accept or prompt on "London Symphony" or "The London Symphony"]

<EK, Classical Music>

9. The dihydrochloride of this compound is sold under the trade name Kuvan and is used to treat its namesake deficiency disease. For 10 points each:

[10] Name this compound that is synthesized from GTP by GTPCH, PTPS, and sepiapterin reductase. Deficiency of this compound can also be treated with L-DOPA, since it serves as a cofactor for the conversion of L-tyrosine to L-DOPA.

ANSWER: **tetrahydrobiopterin** [or **THB**; or **BH4**; or **H4B**; accept **sapropterin**]

[10] THB is also a cofactor for this enzyme which catalyzes the production of citrulline and a namesake molecule from L-arginine. Unlike its neuronal and endothelial types, the inducible isoform of this enzyme is not regulated by calcium-calmodulin interactions.

ANSWER: **nitric oxide synthase** [or **NO synthase**; or **NOS**; or **nNOS**; or **iNOS**; or **eNOS**; or **bNOS**]

[10] THB also serves as a cofactor in the metabolism of phenylalanine, which is disrupted in patients with this disease. Patients with this disease have musty smelling urine.

ANSWER: **phenylketonuria** [or **PKU**]

<RD, Biology>

10. These things are described as "fresh as the first beam glittering on a sail" and "dear as remember'd kisses after death." For 10 points each:

[10] Name these title objects about which the speaker of a poem says "I know not what they mean" as he looks on "happy autumn-fields" and reflects on "the days that are no more."

ANSWER: **tears** [accept "**Tears**, Idle **Tears**"]

[10] This Victorian poet of "Tears, Idle Tears" also wrote "The Lady of Shalott" ("shuh-LOT") and *Idylls of the King*.

ANSWER: Alfred, Lord **Tennyson**

[10] Tennyson included "Tears, Idle Tears" in this serio-comic narrative poem in which a man disguises himself as a woman to enroll in a university where men are banned, so he can woo the title character.

ANSWER: *The **Princess***

<RK, Poetry>

11. Diodorus Cronus responded to this problem with his "master argument," which set out three propositions, arguing that they cannot all be simultaneously true. For 10 points each:

[10] Name this problem illustrated by an example involving a sea-battle in Aristotle's *On Interpretation*.

ANSWER: problem of **future contingents**

[10] According to David Sedley, Diodorus Cronus popularized this paradox, which concerns how many grains of sand are required to form a heap.

ANSWER: **sorites** (“so-RYE-teez”) paradox

[10] Diodorus Cronus received a nickname recognizing his skill at this art, whose name also refers to a process by which the contradiction between a thesis and antithesis is resolved via synthesis in Hegelian philosophy.

ANSWER: **dialectic** [accept the **Dialectician**]

<EC, Philosophy>

12. This region underwent significant deindustrialization and population decline beginning approximately in the 1970s. For 10 points each:

[10] Identify this region of the United States, which includes many economically-distressed former manufacturing hubs like Youngstown, Gary, Flint, and Cleveland. It encompasses much of the Great Lakes region, stretching from Western New York to the Western shore of Lake Michigan.

ANSWER: **Rust Belt**

[10] One possible method of recovery for the Rust Belt would be the return to the region of heavy industrial production which had moved to lower-cost countries. This term is used to denote the return to a country or region of jobs and other business activities which had previously been moved overseas.

ANSWER: **onshoring** [or **re-shoring** or **backshoring** or **inshoring**]

[10] Some of those optimistic about the future of the Rust Belt believe that the rise of this technology may lead to a return of industrial jobs, since it permits diverse components to be produced quickly near the location of their use, reducing transportation and storage costs. This technology uses industrial-scale 3D printers to produce goods.

ANSWER: **additive manufacturing**

<MC, Other Academic>

13. The Sikh bombing of Air India 182 inspired an oft-anthologized story by this author titled “The Management of Grief.” For 10 points each:

[10] Name this former Berkeley professor of Bengali origin who passed away in early 2017. She wrote the collections *Darkness* and *The Middleman and Other Stories*, the latter of which contains the inspiration for her novel *Jasmine*.

ANSWER: Bharati **Mukherjee**

[10] Miranda asks Dev what Bengal is in this author’s story “Sexy,” whose title word is defined by Rohin as “loving someone you don’t know.” “Sexy” appears in this author’s collection *Interpreter of Maladies*.

ANSWER: Jhumpa **Lahiri** [or Nilanjana Sudeshna **Lahiri**]

[10] In the first story in *The Interpreter of Maladies*, “A Temporary Matter,” a series of these events help rekindle the relationship of Shoba and Shukumar after the stillbirth of their son.

ANSWER: **blackouts** [or power **outages**; accept equivalents]

<RK, Short Fiction>

14. In the sentence “Pranav hosed himself,” the pronoun “himself” is bound by “Pranav,” which serves as this type of expression. For 10 points each:

[10] Give this term for an expression that lends its meaning to a later anaphor. A type of ellipsis known as ACD, or [this term]-contained deletion, occurs in sentences like “We zeroed every bonus that you did.”

ANSWER: **antecedent**

[10] ACD can be explained by positing that the sentence is actually ordered “Every bonus that you zeroed, we zeroed” in this representation. In the Y-model, a sentence’s structure splits into Phonetic Form and this other representation, which is the input to semantic interpretation.

ANSWER: **Logical Form** [or **LF**]

[10] The aforementioned “himself” is this type of pronoun, which in English ends in “self” or “selves.”

ANSWER: **reflexive** pronoun

<EC, Social Science>

15. This man sentenced a privateer named Joshua Huddy to death after he was captured by Loyalist Forces during the so-called Asgill Affair. For 10 points each:

[10] Name this last colonial governor of New Jersey, who was imprisoned during the American Revolution and then exiled to England. He backed Loyalist guerilla groups like John Bacon's Pine Robbers.

ANSWER: **William Franklin** [prompt on **Franklin**; do not accept "William Temple Franklin"]

[10] William Franklin was the illegitimate son of Benjamin Franklin, whose achievements included publishing a colonial almanac attributed to this pseudonym.

ANSWER: Poor **Richard** [or **Richard** Saunders; accept *Poor Richard's Almanac*]

[10] William Franklin was one of the first colonists to learn about the betrayal of Benedict Arnold, which he did through this British major. This man, who was hanged for his role in the betrayal, had earlier looted Benjamin Franklin's Philadelphia house while he was quartered in it.

ANSWER: John **André**

<IJ, American History>

16. This novel's protagonist composes laments to Lilia, an idealized version of a woman he met in Paris. For 10 points each:

[10] Name this novel in which Roberto della Griva is shipwrecked near what he imagines is the International Date Line.

ANSWER: *The **Island of the Day Before*** [or *L'isola del giorno prima*]

[10] In this Jules Verne novel, Phileas Fogg is convinced that he has arrived five minutes too late to win his bet, not realizing that since he's circumnavigated the globe eastward, he has gained a day on his journey.

ANSWER: ***Around the World in Eighty Days*** [or *Le tour du monde en quatre-vingts jours*]

[10] In a Kipling story of this title, John Hay becomes convinced that repeatedly crossing the International Date Line eastward is the key to immortality. In a novel of this title, villainous Jesuits hatch schemes to dispossess the Rennepont ("ren-PON") family of their wealth.

ANSWER: "The **Wandering Jew**" [accept *Le juif errant*] (The novel is by Eugène Sue.)

<WN, Long Fiction>

17. Gibbs free energy can be calculated by performing this operation on Helmholtz free energy. For 10 points each:

[10] Name this operation that defines a new function, "g of theta-comma-y," from an old function, "f of x-comma-y," by setting g equal to "df-dx times dg-d-theta minus f."

ANSWER: **Legendre** ("la-ZHAHN-druh") **transformation**

[10] Enthalpy is the Legendre transform of this other state function. The first law of thermodynamics states that the change in this quantity for a system is equal to heat added minus work done.

ANSWER: **internal energy** [or **U**]

[10] By noting the equality of mixed partial derivatives, one can derive a Maxwell relation from internal energy in which [read slowly] the partial of temperature with respect to volume, with this quantity held constant, is equal to the negative partial of pressure with respect to entropy, with this other quantity held constant. Please give your answer in order.

ANSWER: **entropy** and **volume** [or **S** and **V**; or **sigma** and **V**; do NOT accept in the other order]

<RD, Physics>

18. A sacred one of these objects known as an *upavita* or *yajnopavita* is typically worn by recipients over their left shoulder and across their chest. For 10 points each:

[10] Name these objects that boys will receive during the Hindu initiation ritual of *upanayana*, which will mark them as *dvija* ("DWI-juh"), or "twice-born." Sisters tie these things around their brothers' wrists during Raksha Bandhan.

ANSWER: **threads** [accept **strings**; anti-prompt on **wristband** or **bracelet**]

[10] The *upanayana* ritual marks a boy's entry into *brahmacharya*, one of these four Hindu stages of life. The last of these stages is *sannyasa*, during which people are expected to renounce all of their possessions.

ANSWER: **ashrama** [or **asrama**]

[10] During *upanayana*, boys are taught this mantra from the Rig Veda, which is dedicated to the sun god Savitr.

ANSWER: **Gayatri** mantra

<WC, Religion>

19. This style was named for the thin and elaborate rose window tracery of buildings like Sainte-Chapelle ("sant-shah-PELL"), which created an emphasis on a structural lightness and natural light. For 10 points each:

[10] Name this style of "radiant" Gothic architecture of the mid-thirteenth century to mid-fourteenth century that gave way to the Flamboyant style.

ANSWER: **Rayonnant** ("ray-oh-NON") style

[10] Pointed arches and the "flying" type of these features are the most recognizable elements of Gothic architecture. These structures are called "flying" because they jut out from the exterior of cathedrals and are not connected to the walls they support.

ANSWER: flying **buttresses** [or **arc-boutant**; or arch **buttresses**]

[10] This architectural element of Gothic cathedrals is a gallery consisting of arches, usually in groups of three. Moulding and tracery for this level are usually more ornamented than the nave below or clerestory ("CLEAR-story") above.

ANSWER: **triforium**

<AK, Other Art (Architecture)>

20. Ywain ("ih-WAIN") plays this game against King Arthur while Arthur's forces gather to fight the Saxons in *The Dream of Rhonabwy* ("roh-NOB-wee"). For 10 points each:

[10] Name this chess-like game invented by Lugh ("loo"). In another myth, Midir repeatedly loses at this game while playing with Eochaid ("ECK-id") before finally winning an embrace and kiss from his lover.

ANSWER: **fidchell** ("FID-shell") [or **fidhcheall**; or **fidceall**; **fitchneal**; or **fithchill**; or **gwyddbwyll** in Welsh]

[10] In that tale, Midir succeeds in eloping with this woman, as they escape the hands of the prospective suitor Eochaid as a pair of swans. Those events occur in a myth known as *The Wooing of [this woman]*.

ANSWER: **Étaín** ("AY-teen") [or **Éadaoin**; or **Étaíne**; or **Édaín**]

[10] *The Wooing of Étaín* is part of the *Mythological Cycle* of Ireland. This other cycle named for an Irish province features the reign of Conchobar ("KONE-ho-var") mac Nessa, the Cattle Raid of Cooley, and the exploits of Cúchulainn ("coo-HULL-in").

ANSWER: **Ulster** cycle [or *an* **Rúraíocht**]

<AK, Legends>