

Penn Bowl 2018

Packet 13

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Tossups

1. **This man proposed a thought experiment in which rare random fluctuations produce self-aware entities, called his namesake “brains.” A method named for this scientist involves simulating collisions in a Newtonian fluid, rather than solving the Navier–Stokes equation. A law named for this man can be simplified by assuming that collisions solely arise from pairs of uncorrelated particles colliding; that is the (*) molecular chaos assumption. The time evolution of the distribution function is given by this man’s transport equation. This physicist’s result that entropy equals k times the log of the number of microstates is written on his tombstone. For 10 points, name this Austrian physicist who names a constant equal to the ideal gas constant over Avogadro’s constant, and also a probability distribution for molecular speeds along with Maxwell.**

ANSWER: Ludwig Boltzmann

<JC, Physics>

2. **In a 2017 TED conversation, this person said, “I’m not trying to be anyone’s savior. I’m just trying to think about the future and not be sad.” After dropping out of Stanford, this person worked with his brother Kimbal to launch his first business, Zip2, which was sold to Compaq in 1999. When asked about his 38,900-dollar donation to the Republican PAC Protect the House, he described it as (*) “a reasonable amount to maintain an open dialogue.” One of this man’s firms announced its first private customer would be Japanese fashion mogul Yusaku Maezawa. An SEC investigation was triggered after this man declared that he had “funding secured” for taking his main company private, and he claimed to have picked a share price of 420 dollars because he thought his girlfriend Grimes would find it funny. For 10 points, name this CEO of SpaceX and Tesla.**

ANSWER: Elon Musk

<GA, Current Events>

3. **This compound is commonly sold as a powder of its disodium dihydrate derivative, and one synthesis of it produces the byproduct NTA. Its dipotassium and tripotassium derivatives are used as anticoagulants in blood collection tubes. This compound is mixed with trypsin to detach cells from culture plates. A buffer containing 10 millimolar Tris and 1 millimolar of this compound is commonly used to store DNA because it inhibits nucleases. When used alongside Eriochrome Black T or Fast Sulphon Black, this compound is used in (*) complexometric titration. Like succimer, this compound is used to treat lead poisoning, and it forms an octahedral structure when bound to a metal ion. For 10 points, name this chelating agent with four acetic acid moieties.**

ANSWER: EDTA [or ethylenediaminetetraacetic acid; or ethylenediaminetetraacetate]

<AP, Chemistry>

4. **As a child, one of these people supposedly seized his uncle’s cloak at a funeral to say a prayer. One of these people stated that this position “is not a matter of human choice or self-assertion” and supposedly wore a silk robe with coarse cloth on the inside. Some believe that a scream from the sky and the arrival of Yamani, as well as the depletion of two-thirds of the world’s population from the red death and the white death, will prefigure the arrival of one of these figures, who experienced the (*) Occultation. One of these people, Reza, is**

buried in the world's largest mosque. The Qarmatians believed that Isma'il ibn Jafar was the last of seven of these people, in contrast to a sect which believes in a "hidden" one of these people, the Mahdi. For 10 points, Shia Twelvers believe in twelve people referred to by what term, which Sunni Muslims use more generally to refer to mosque leaders?

ANSWER: Shia **imams** [prompt on Mahdi until read]

<JC, Religion>

5. Rather than confirm this man's nomination to replace Justice Gabriel Duvall, opposing senators unsuccessfully motioned to abolish the open Supreme Court seat. This politician, the first cabinet nominee to be rejected by the Senate, killed a financial institution by depositing federal funds elsewhere while serving as Secretary of the Treasury. In *Luther v. Borden*, this man ruled the political question doctrine applied to the Guarantee Clause by choosing not to legitimize the (*) Dorr Government. This Justice ruled that contracts should be interpreted as narrowly as possible in *Charles River Bridge v. Warren Bridge*. In his most famous opinion, this Andrew Jackson ally ruled the Missouri Compromise unconstitutional and that African Americans could not become citizens. For 10 points, name this Chief Justice who authored the *Dred Scott* decision and succeeded John Marshall.

ANSWER: Roger Brooke **Taney**

<NR, American History>

6. Roald Dahl built a replica of this author's house to write in. This author wrote a poem set at Aunt Annie's farm in which he is "honoured among the foxes and pheasants" and "famous among the barns." He evoked "Heds... hammer[ing] through daisies" "though they be mad and dead as nails" in a poem which declares "Though lovers be lost love shall not." He wrote a poem which describes how "it was all / shining, it was Adam and maiden" and ends with the speaker saying that "time held me (*) green and dying." This author of "And Death Shall Have No Dominion" wrote a work reminiscing about a time when he was "young and easy under the apple boughs," "Fern Hill." This author claimed "old age should burn and rave" and urges his addressee to "rage against the dying of the light." For 10 points, name this Welsh poet of "Do Not Go Gentle into That Good Night."

ANSWER: Dylan **Thomas**

<MT, British Literature>

7. This opera combines two characters from its source material, written by Henri Murger, into one character who sings the duet "O soave fanciulla" ("oh SWAH-vay fahn-CHOO-la"). In a scene in this opera, a character sends her lover off because her shoe is too tight. A character in this opera sings "Vecchia zimarra" ("VEK-yah zee-MA-rah") as he (*) pawns an object that was bought with Schaunard's horn and a bonnet to buy medicine for another character, who introduces herself in an aria that begins "Mi chiamano" ("mee kyah-MAH-no"). A woman sings "Quando m'en vo" to embarrass her lover, Alcindoro, at the Cafe Momus, where characters don't pay for food. When a candle goes out, Rodolfo and the tuberculosis-suffering Mimì sing "Che gelida manina" ("kay jell-EE-dah mah-NEE-nah"). For 10 points, name this source of the musical *Rent*, an opera by Giacomo Puccini.

ANSWER: *La Bohème*

<MT, Other Arts (Opera)>

8. This third son came to the throne after Dorieus died in exile in Sicily and his eldest brother was deposed. That brother of this man earlier led a successful war to overthrow Hippias as tyrant of Athens, but was later ordered into chains by this ruler on account of his insanity. David Kahn cites this man's wife as one of the first female cryptanalysts for discovering a message concealed by wax that detailed an imminent invasion. This husband of (*) Gorgo and successor to Cleomenes ruled as one of the archagetai with Leotychidas and was descended from Heracles as a scion of the Agiad dynasty. Before his most famous battle, this man legendarily uttered the words "molōn labé" in response to a demand for surrender. For 10 points, name this King who died in a last stand with 300 fellow Spartans against Xerxes's army at Thermopylae.

ANSWER: Leonidas I
<NR, European History>

9. **This character hides a bundle of more than six hundred banknotes in a forest for ten years; when he recovers it, it is mistaken for a book by another character. The novel this character appears in ends by describing his tombstone, which reads in part “He sleeps. Although his fate was very strange, he lived.” This character escapes twice with the help of a file hidden in a coin and buys three houses in the same city so he’ll always have somewhere to run to. This character only shoots at soldiers’ helmets during an (*) uprising so he doesn’t kill anyone and later drags his adopted daughter’s lover through the sewers, where he is recognized by her former foster father, Thenardier. For 10 points, name this ex-convict who adopts Cosette after being assigned the number 24601 for stealing a loaf of bread, the protagonist of Victor Hugo’s *Les Miserables*.**

ANSWER: Jean Valjean
<MT, European Literature>

10. **Over 3,000 coroners’ rolls are used as a primary source for the family lives of these people in Barbara Hanawalt’s *The Ties That Bound*. The best horse owned by a dead one of these people could be taken through the practice of *heriot*. Some of these people were supposedly walled up in a cellar after getting drunk on sweet wines during an incident railed against by Henry Knighton in which they burnt Savoy Palace. The dream (*) vision poem *Vox Clamantis* allegorizes a movement of these people during which Simon Sudbury and Robert Hales were executed on Tower Hill. A maximum wage for these people was set by a 1351 statute that, along with an unpopular poll tax, contributed to an uprising of these people that was stirred up by the priest John Ball. For 10 points, Wat Tyler led a 1381 revolt of what class of agricultural laborers in England?**

ANSWER: medieval English peasants [or serfs; or villeins; or agricultural laborers until read]
<AJ, European History>

11. **The “Profile” version of a construct named for this man is commonly used for sequence alignment. An algorithm for performing inference in systems named for this man dynamically computes the probability of a sequence of observations by computing the probability up to some intermediate state and from that intermediate state onward. Those probabilities, usually denoted alpha and beta, are the forward and backward probabilities in systems named for this man that have (*) hidden states. An inequality named for this man states that the probability that X is greater than a is less than or equal to the expected value of X , divided by a . The PageRank algorithm models Internet searches with structures named for this man that can contain absorbing or ergodic states. Birth-and-death processes, random walks, and other sequences of events whose probability depends only on the previous event are modeled by the namesake chains of, for 10 points, what Russian mathematician?**

ANSWER: Andrey Andreyevich Markov
<JC, Other Science (Math)>

12. **After being criticized for using bright colors, this creator of art-nouveau watercolors of UVA created a “low-toned and dreary” painting of a studio, *My Shanty, Lake George*. Lewis Mumford described one of this artist’s exhibitions as “one long, loud blast of sex,” a theory supported by Linda Nochlin but denied by this artist with a quip about subjects that were “cheaper than models and don’t (*) move.” This artist highlighted the central object’s cruciform shape in a work parodying the “Great American” painting, and she painted D. H. Lawrence’s tree in the Taos (“touse”) colony before working in the “White Place” and the “Black Place.” This artist of *Cow’s Skull: Red, White, and Blue* and the *Red Canna* series moved to New Mexico to paint images like *Ram’s Head with Hollyhock* and married Alfred Stieglitz. For 10 points, name this American painter of many skulls and flowers.**

ANSWER: Georgia O’Keeffe
<JC, Painting>

13. During this conflict, Celia Sánchez created a “farmer’s militia” in order to supply troops, and worked with Frank País in order to create a task force. During this war, a commander used a bulldozer to destroy railroad tracks in order to stop an armored train, whose derailed cars are still in place as a national monument. During the Operation Verano offensive of this conflict, the victorious forces won the battles of La Plata and Las Mercedes. Radio (*) Rebelde was set up in the Sierra Maestra region during this conflict. The organization that instigated this rebellion was named after the date on which its leader had attacked the Moncada Barracks in 1953, the 26th of July. For 10 points, name this revolution that ended with Fulgencio Batista being overthrown as dictator of a Caribbean nation.

ANSWER: Cuban Revolution [or 26th of July Movement until read; accept descriptions indicating Fidel Castro overthrowing Fulgencio Batista; accept the overthrow of Fulgencio Batista until “Batista” is read]

<AJ, World History>

14. According to Weller’s theorem, a heterogeneous resource can be divided among partners in a way that is both envy-free, and has this property. This property is implied when the conditions of non-imposition, monotonicity, and independence of irrelevant alternatives are present. According to the Greenwald–Stiglitz theorem, this condition cannot occur in markets, even under (*) competitive market allocation, without perfect information and or complete markets. On a production-possibility frontier, all choices on the frontier have this condition, while all choices off the frontier do not comply. For 10 points, name this economic condition, which can be implied by Arrow’s impossibility theorem, in which it is impossible to make any person or group better without making anyone else worse off.

ANSWER: Pareto optimality [accept Pareto efficiency; prompt on efficiency or optimality]

<AJ, Social Science (Economics)>

15. This composer wrote an orchestral work intended to be performed with dancers wearing Dalí-inspired costumes. He often wrote oddly instrumented music, including pieces for heckelphones and trautioniums, and he was a master of the viola d’amore. This composer wrote the opera *We’re Building a City* for eight-year-olds and another opera that contains the folk song “Es sungen drei Engel” (“us ZOONG-in dry AANG-ul”). In a piano piece by this composer, the last movement is a (*) retrograde inversion of the first movement, “Preludium.” In an orchestral work by this proponent of Gebrauchsmusik (“geh-BROW-ks-moo-ZEEK”), or “utility music,” the Scherzo second movement was inspired by a theme from incidental music to Gozzi’s *Turandot*. For 10 points, name this 20th-century German composer of *Symphonic Metamorphosis of Themes by Carl Maria von Weber*, *Ludus Tonalis*, and an opera about the creator of the Isenheim altarpiece, *Mathis der Maler* (“MAH-tiss dare MAH-lur”).

ANSWER: Paul Hindemith (“HIN-duh-mit”)

<MT, Music>

16. A work written during this conflict quotes songs about the “Lonesome Valley” heard while teaching in “Life on the Sea Islands.” That author, Charlotte Forten, as well as an author whose diary vows “to tell the story in my own way,” Mary Chesnut, are mentioned in a work which praises a novel about Miss Ravenel by John William De Forest. In another novel whose title comes from an Ernest Dowson poem, the protagonist auctions off a dance for “one hundred fifty dollars in gold,” buys a sawmill, and has a (*) miscarriage due to falling down the stairs after this war, which was described in Edmund Wilson’s *Patriotic Gore*. In that novel, Melanie gives birth and Ashley Wilkes fights in this conflict. That novel’s protagonist declares “Tomorrow is another day” after she is left by Rhett Butler. For 10 points, name this war, the setting of *Gone with the Wind*.

ANSWER: the Civil War

<JC, American Literature>

17. Condillac's *Treatise on Systems* rebuts this work's proof of God's existence by saying, "if I conceived God did not exist, it would follow that I had some extraordinary ideas, but it could not be concluded that... His essence did not include existence." This work claims a thing can only be destroyed by an external cause and describes particular things as modes of God's attributes. It argues that imagination is based on inadequate ideas while reason is based on adequate ones, and that the essence of a living being is (*) "striving," or *conatus*. Its first section contains metaphysical axioms and proofs arguing that all things are "in God," a view that had previously gotten its author excommunicated by the Sephardic community of Amsterdam. For 10 points, name this "geometrically demonstrated" work, the magnum opus of Baruch Spinoza.

ANSWER: *Ethics* [or *Ethics, Demonstrated in Geometrical Order*; or *Ethica, Ordine Geometrico demonstrata*]
<LC, Philosophy>

18. This god threw away a staff to set the limit for eight thunders. This god's wife created metal deities when she got sick and vomited. This god, known as "Male Who Invites," was the son of "Perfect-Exterior" and "Oh-Awful-Lady," and this god and his wife first created a hall of eight fathoms and a heavenly (*) pillar. This god used a "ten-fist-length-sword" to kill his son, a fire god, who caused his mother to die in childbirth. In one story, this god blocked a pass with a rock after vowing that 1500 people would be born each day while fleeing from his wife, the goddess of death in Yomi. Along with that wife, this god, who created Susano'o and Amaterasu from his eyes and nose, dipped a jeweled spear into the ocean to create eight islands. For 10 points, name this Shinto creator god, the husband of Izanami.

ANSWER: Izanagi
<JC, Mythology>

19. This process is prevented from occurring by geminin binding to Cdt1. When this process is incomplete, a complex containing Rad9 ("rad-nine"), Hus1 ("H-U-S-one"), and Rad1 ("rad-one") is activated. Cells undergoing this process appear between two peaks in a histogram of DAPI ("DAH-pee") staining on flow cytometry. Incompatibility between plasmids occurs when they have the same sequences for this process. The processivity of one enzyme in this process is improved by PCNA, a (*) "sliding clamp" protein. This process begins at AT-rich ori ("OR-ee") sites. An experiment on this process used *E. coli* grown in media containing two different nitrogen isotopes, demonstrating that this process is semiconservative. During it, ligase joins Okazaki fragments, and it occurs during S phase. For 10 points, name this process, catalyzed by DNA polymerase, which generates a copy of the genome.

ANSWER: DNA replication [prompt on S phase]
<AP, Biology>

20. In one of this author's plays, singers gather in the protagonist's yard singing that Satan "must be crushed," which prompts a rant about new churches asking for money; another character compares "the alcoholic of hard liquor" to "the alcoholic of the rosary" before singing "the trumpet of the workers is finally blown!" In that play, Jezebel and Ahab trick two characters into selling a title deed to finance a wedding. In another of this author's plays, Thoni kills herself because she believes her husband will reject her when he returns. This author depicted Remi in (*) *The Black Hermit* and Kiguunda and Wangeeci in *I Will Marry When I Want*, for which he was imprisoned. He also wrote a novel in which Mumbi gives birth to Karanja's child while her husband Gikonyo is in detention camp during the Mau Mau Rebellion. For 10 points, name this Kenyan author of *A Grain of Wheat*.

ANSWER: Ngũgĩ wa Thiong'o [or James Ngugi]
<MT, World Literature>

Bonuses

1. This vital supply artery was later supplanted by the Ledo Road. For 10 points each:

[10] Name this road beginning at Lashio and ending at Kunming that was used by the British to transport supplies to Chiang Kai-shek. After it was lost, the US airlifted aid over the Himalayas to China.

ANSWER: **Burma** Road

[10] The Burma Road was built during Second Sino-Japanese War, which became one theater of this global conflict.

ANSWER: **World War II**

[10] This American general commanded US troops in the China Burma India Theater, opened the Ledo Road after taking back Burma, and advised Chiang Kai-Shek, whom he derisively called “Peanut.”

ANSWER: Joseph Warren **Stilwell** [or “Vinegar Joe” **Stilwell**]

<NR, World History>

2. Zoologists recognize about 35 different animal phyla. For 10 points each:

[10] This phylum contains primarily hydra and jellyfish and all of its members have stinging cells, exhibit radial symmetry, and carry out both intracellular and extracellular digestion.

ANSWER: **cnidarians** (“nye-DAIR-ee-uns”)

[10] Because cnidarians are protostomes, they have spiral, determinate cleavage, and their blastopore becomes this part of their digestive tract.

ANSWER: **mouth**

[10] Cnidarians are also diploblastic; they have endoderm and ectoderm separated by this tissue.

ANSWER: **mesoglea**

<AP, Biology>

3. This case began on a tip that a suspect accused of bombing Don King’s house was hiding out in the petitioner’s home. For 10 points each:

[10] Name this 1961 Supreme Court case that overturned a woman’s conviction for possession of pornography, which had been discovered in a warrantless search. It was grounded in the Fourth Amendment.

ANSWER: **Mapp v. Ohio**

[10] *Mapp v. Ohio* incorporated this rule earlier formulated in *Weeks v. US*. This rule declared that illegally-obtained evidence cannot be used in court, and it was expanded into the “fruit of the poisonous tree” doctrine.

ANSWER: **exclusionary** rule

[10] The exclusionary rule can be considered this kind of rule. These “preventative” rules include the Miranda rights and are not actually granted by the constitution, but are used to protect an actual constitutional right.

ANSWER: **prophylactic** rule

<WD, American History>

4. Leaders of this school included Theophrastus, whose extant works include *Plant Explanations* and *On Fish*. For 10 points each:

[10] Name this school based on the teachings of Aristotle, legendarily named for his habit of lecturing while walking the building’s colonnades.

ANSWER: **Peripatetic** school

[10] Theophrastus introduced the “prosleptic” form of these arguments. As defined by Aristotle, they consist of a major and minor premise and take the form “All cats are dogs. Garfield is a cat. Therefore, Garfield is a dog.”

ANSWER: **syllogism**

[10] Theophrastus also wrote on the “art” of this skill. Aristotle’s own treatise on it defines *logos*, *ethos*, and *pathos*, while Cicero wrote about it in *De oratore*.

ANSWER: **rhetoric** [or **oratory** until “De oratore” is read; prompt on synonyms like speech]

<JK, Philosophy>

5. In the final line of this story, a pear tree is claimed to be “as lovely as ever and as full of flower.” For 10 points each:

[10] Name this short story, in which Bertha Young waits for Miss Fulton to “give the sign” and stands with her in the moonlight, only to find out she is having an affair with her husband Harry.

ANSWER: “**Bliss**”

[10] The author of “Bliss” also wrote this story in which the Sheridans “could not have had a more perfect day for” the title event “if they had ordered it.” In it, Laura brings leftovers to the family of her dead neighbor.

ANSWER: “The **Garden Party**”

[10] The New Zealand author of “Bliss” and “The Garden Party” wrote “Miss Brill” and “Prelude.”

ANSWER: Katherine **Mansfield**

<LC, British Literature>

6. By the end of a meal on this holiday, one should not be able to calculate the equivalent numerical value of two different phrases. For 10 points each:

[10] Name this holiday observed on the 14th of Adar that involves drinking and using groggers and celebrates the heroics of Esther.

ANSWER: **Purim**

[10] On Purim, triangle-shaped cookies are given to represent the bribe-money-filled pockets of this evil Persian official, whom Esther stops from killing Mordecai.

ANSWER: **Haman**

[10] The attack from Amalek is recounted on this “Shabbat of remembrance” immediately preceding Purim.

ANSWER: Shabbat **Zachor**

<AP, Religion>

7. This period is hypothesized to be important in developing the ego and recognizing an adult as “other.” For 10 points each:

[10] Name this psychoanalytic period, named after the time at which infants develop apperception, or the ability to perceive themselves as an object that can be viewed externally.

ANSWER: “**mirror stage**” [or “**stade du miroir**”]

[10] This postmodern psychoanalyst and author of *Écrits* (“ay-KREE”) posited the “mirror stage” and divided world orders into the imaginary, the symbolic, and the real.

ANSWER: Jacques **Lacan**

[10] Lacan proclaimed a “return to” this father of psychoanalysis and analyzed his concept of the ego.

ANSWER: Sigmund **Freud**

<JC, Social Science (Psychology)>

8. A doubly chlorinated derivative of this compound is called phosgene. For 10 points each:

[10] This compound is used as the sacrificial reductant in the crossed variety of the Cannizzaro reaction. This compound’s formula is CH₂O, and it is commonly used to preserve tissue.

ANSWER: **formaldehyde**

[10] Aldehydes with alpha hydrogen can alternatively undergo this reaction in presence of a base, resulting in the namesake adduct following a nucleophilic attack by the enolate.

ANSWER: **aldol** reaction [or **aldol** condensation]

[10] The rate limiting step of the Cannizzaro reaction is the nucleophilic attack of this ion. Along with a methyl shift, this ion can shift over to a neighboring carbon during carbocation rearrangement.

ANSWER: **hydride** shift [or **H⁻** ion; or **H⁻minus** ion; do not accept or prompt on “H⁺ ion” or “hydrogen” or “H”]

<PL, Chemistry>

9. In one play by this author, a gravedigger called “the Foundling Father” digs a replica of “the Great Hole of History” for his family. For 10 points each:

[10] Name this playwright who wrote about the Abraham Lincoln impersonator Lincoln and his brother Booth in *Topdog/Underdog*.

ANSWER: Suzan-Lori **Parks**

[10] Parks’s plays *In the Blood* and *Fucking A*, whose protagonist Hester is branded with the letter A for being an abortionist, are riffs on this Nathaniel Hawthorne novel.

ANSWER: *The **Scarlet Letter***

[10] Parks wrote a soon-to-be-produced screenplay for this novel about a character who kills a rat with a frying pan and is defended by the Communist lawyer Boris Max.

ANSWER: ***Native Son***

<JC, American Literature>

10. This strange structure was conceived by Jim Reinders in 1987 as a memorial to his father. For 10 points each:

[10] Name this structure made entirely from vintage American automobiles all covered in gray spray paint. “The Ford Seasons” is another sculpture at this site’s namesake Art Reserve.

ANSWER: **Carhenge**

[10] Carhenge is located in this midwestern state’s city of Alliance. Situated near the North Platte River, Chimney Rock can also be found in the western part of this state and on its state quarter.

ANSWER: **Nebraska**

[10] Nebraska is also known for its large cattle ranches, many of which are located in this arid region in the western part of the state. The Valentine National Wildlife Refuge is located in this region which sits atop the Ogallala Aquifer.

ANSWER: the **Sandhills**

<AP, Geography>

11. The Argonauts landed on this island seeking absolvment after their murder of Absyrtus. For 10 points each:

[10] Name this island from which Odysseus sailed to meet with Teiresias after he and his crew stayed there for a year.

ANSWER: **Aeaea** (“ee-EE-uh”) [or **Aiaia**; or **Eëa**; prompt on **Circe’s island** or equivalents; do not accept “Ogygia”]

[10] This woman was exiled to Aeaea by her father Helios. While living on the island, she transformed many crews of sailors into beasts.

ANSWER: **Circe**

[10] Among Circe’s children was this man, who accidentally killed his father, Odysseus, with a poisoned spear. He later ruled the Etruscans.

ANSWER: **Telegonus**

<MT, Mythology>

12. The protagonist of this novel sees two suns and two moons as well as identical copies of dead fish. For 10 points each:

[10] Name this novel whose title character makes a machine that causes reality to infinitely loop so that he can be with Faustine forever.

ANSWER: *The **Invention of Morel***

[10] This author of *The Invention of Morel* was married to the gothic short-story writer Silvina Ocampo, whose sister Victoria published the magazine *Sur*.

ANSWER: Adolfo Bioy **Casares**

[10] Casares and the Ocampo sisters hail from this country, also the home of Julio Cortázar and Manuel Puig.

ANSWER: **Argentina**

<JC, World Literature>

13. In its original coining in *The Tall Office Building Artistically Considered*, examples of “the sweeping eagle in his flight,” “the open apple-blossom,” and “the toiling work-horse” were used to support this slogan. For 10 points each:

[10] Name this three-word modernist architectural motto, a concept attributed to Vitruvius but coined by a creator of “jewel box” banks.

ANSWER: “**form** ever **follows function**”

[10] This partner of Dankmar Adler, who wrote the phrase “form follows function,” designed the Wainwright Building as well as an incongruous-looking tomb, “the Taj Mahal of St. Louis,” for Charlotte Dickson Wainwright.

ANSWER: Louis **Sullivan**

[10] Because they disliked the all-white Beaux Arts (“boh-zarr”) decor of the Chicago World’s Fair buildings, Adler and Sullivan decided to clash with the style by creating this green and red building with a massive quintuple-arched Golden Door.

ANSWER: the **Transportation Building**

<JC, Other Arts (Architecture)>

14. This document’s exclusion of the Habsburgs caused Duke Rudolf IV to forge the *Privilegium Maius*, a document supposedly issued by Frederick Barbarossa to give Austria special privileges. For 10 points each:

[10] Name this document issued by Charles IV von Luxemburg at the Diet of Metz, which laid out a system in which seven prince-electors would vote for the Holy Roman Emperor.

ANSWER: **Golden Bull of 1356** [prompt on Golden Bull]

[10] Faced with only daughters, Charles VI promulgated this document allowing women to succeed to the Archduchy of Austria and the Habsburg dominions, thought not to the office of Holy Roman Emperor.

ANSWER: **Pragmatic Sanction** of 1713

[10] Despite Charles’s efforts to have the Pragmatic Sanction recognized by other powers, many reneged and fought the War of Austrian Succession against this Archduchess who surrendered Silesia to Frederick the Great.

ANSWER: **Maria Theresa**

<NR, European History>

15. This collection of celestial objects was compiled with the help of Pierre Mechain. For 10 points each:

[10] Name this catalog of 110 objects including the Eagle and Lagoon nebulas. It is named after the French astronomer who created it.

ANSWER: **Messier** catalog

[10] M87 is an elliptical galaxy with a supermassive black hole located at the center of this supercluster, which also contains the Milky Way.

ANSWER: **Virgo** supercluster

[10] Even larger than the Virgo supercluster is this galaxy filament, within which the Virgo supercluster resides. It was identified by Brent Tully.

ANSWER: **Pisces-Cetus** supercluster complex

<AP, Other Science (Astronomy)>

16. During these wars, the Spanish government was only kept afloat by the infusion of hundreds of thousands of pounds from the Rothschilds. For 10 points each:

[10] Name this series of civil wars over the Spanish throne. After the death of the absolutist Ferdinand VII, his supporters launched the first of these wars to install his brother as King.

ANSWER: **Carlist** Wars

[10] The Third Carlist War started in the aftermath of generals under Juan Prim deposing a queen of this name, the daughter of Ferdinand VII. Another Spanish queen of this name sponsored Columbus and ruled with Ferdinand.

ANSWER: **Isabella** II [or **Isabella** I]

[10] The Carlist movement found strong support in Basque country because of the Basque desire to regain these regional charters of autonomy that allowed Catalans and Basques to function under their historical local laws.

ANSWER: **fueros**

<NR, European History>

17. Monteverdi's *Il Combattimento di Tancredi e Clorinda* is the first secular example of this type of composition, which moved first toward secularization and then toward becoming "sacred operas." For 10 points each:

[10] Name this type of composition. Giacomo Carissimi's *Jephte* is the first masterpiece of this type of composition.

ANSWER: **oratorio**

[10] Like his cello concerto, this oratorio by Elgar suffered a disastrous premiere. It is a setting of a John Newman poem of the same name and begins with the prayer "Jesu, Maria" before the protagonist's soul encounters God.

ANSWER: ***Dream of Gerontius***

[10] This Handel oratorio includes "I know that my redeemer liveth" and the "Hallelujah Chorus."

ANSWER: **Messiah**

<MT, Music>

18. A poem from this collection begins "My ship, full of oblivion, sails / on a bitter sea, at winter's midnight / between Scylla and Charybdis." For 10 points each:

[10] Name this collection of 366 poems dedicated to Laura that ends with a much longer poem that addresses the Virgin Mary.

ANSWER: *Il Canzoniere* ("ell kont-sone-YAY-ray")

[10] This two-word phrase from the first line of the first poem of *Il Canzoniere* is also another name for the collection. This phrase describes "the sound... of those sighs on which I fed my heart."

ANSWER: **scattered rhymes** [or **rime sparse**]

[10] This author of *Canzoniere* and *The Ascent of Mont Ventoux* delivered his "Coronation Oration" when he was crowned poet laureate of Rome. He names a form of sonnet.

ANSWER: **Petrarch** [or Francesco **Petrarca**]

<MT, European Literature>

19. The relative magnitude of three of these quantities appear in the tennis racket theorem. For 10 points each:

[10] Name this rotational analogue of mass, symbolized I . This quantity times angular acceleration gives the torque.

ANSWER: **moment of inertia**

[10] This rule states that deforming an object in the direction of a principal axis does not change its moment of inertia.

ANSWER: **stretch** rule [or **Routh**'s rule]

[10] The moment of inertia of an object can be expressed as a positive-definite rank-2 quantity of this type. This type of mathematical quantity has an order that is the dimensionality of an array used to represent it.

ANSWER: **tensor**

<AP, Physics>

20. One of this artist's installation pieces shows blobby flesh-colored forms symbolizing the dismembering of her adulterous father. For 10 points each:

[10] Name this sculptor of *The Destruction of the Father* who created the *Cell* series as well as the phallic sculpture *Fillette*, but is best known for a sculpture of a large metal spider.

ANSWER: Louise **Bourgeois**

[10] Bourgeois's spider sculpture is named after and represents the intelligence and weaving skills of this figure.

Mary Cassatt depicted many of these people with children, including one sitting in an armchair "reading *Le Figaro*."

ANSWER: her **mother** [or **Maman**]

[10] In one series, Bourgeois depicted women's bodies merged with these things. Another of her series depicts "fragile" examples of these things as high tables intended to evoke childhood anxiety.

ANSWER: **houses** [or **maisons**; prompt on **buildings**] (The series are *Femme Maison* and *Maisons Fragiles*.)

<JC, Painting>

