ACF Regionals 2017
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Tossups by the Editors (3)

1. Determining this quantity for a system can be done using only the core velocity dispersion if one uses King's method, also known as core fitting. By using the virial equation for an elliptical galaxy, this value is derived to be velocity dispersion squared over pi times big *G* times the size of the galaxy times the surface brightness. This astrophysical value is normally symbolized as an uppercase upsilon. The proposal of dark matter by Fritz Zwicky actually stemmed from his observation that this value differed by a couple orders of magnitude between the Coma cluster and the Kapteyn system. For 10 points, what value is represented for the sun as *M*-sub-dot-in-a-circle over *L*-sub-dot-in-a-circle and is equal to about 5,133 kilograms per watt?
ANSWER: **mass**-to-**light ratio** [or **mass**-to-**luminosity ratio**]

2. Franz Kafka wrote in a short parable that the "truth about" this man was that he exorcised his demons by telling his stories to another man, whom he joined on "crusades" that provided a "great and edifying entertainment to the end of his days." While spending a night cowering in fear from noisy hammers at a nearby wool mill, this character fails in his attempt to covertly defecate. This man receives simplistic advice on governance after a duke and duchess pretend to make him the governor of Barataria, the "ínsula," or island, that he had long been promised. This husband of Teresa Cascajo (kas-KAH-ho) and owner of the donkey Dapple is pressed into service when his master is driven mad by reading all of the chivalric romances in a library. For 10 points, name this faithful squire of Don Quixote.
ANSWER: **Sancho** **Panza** [accept either underlined portion]

3. In the preface to this work, its author writes that he must deny knowledge to make room for faith. As an example of a paralogism, this work examines arguments like "the soul is a substance" and "the soul is simple," which strive to prove that everyone has a soul. This work contrasts the statement "all bodies are extended" with the statement "all bodies are heavy" to illustrate two different types of judgment. This work argues that space and time are "forms of intuition" in its first section, which is titled "The Transcendental Aesthetic." This book published in 1781 contends that there is a distinction between appearances and things-in-themselves, and it also demonstrates the existence of synthetic *a priori* truths. For 10 points, name this first "critique" by Immanuel Kant.
ANSWER: ***Critique of Pure Reason*** [or ***Kritik der reinen Vernunft***; prompt on "KrV"]

4. In lines cut from the final film, this man is called "the Schopenhauer of the 20th century" by an obese man who, in an undeleted scene, enigmatically describes this man as his "second choice." After this man dons a disguise of sunglasses and a blue "I Heart NY" hat and cuts in line, he yells about "a world that no man should ever see" while on the side of the New Jersey Turnpike. This man is central to the schemes of the 105-year-old carrot juice enthusiast who owns LesterCorp. He becomes confused by his relationship with the Catherine Keener–played Maxine Lund, who manages his career as a puppeteer. The Mertin–Flemmer Building's seventh-and-a-half floor contains a portal into the mind of, for 10 points, what title actor of a 1999 Spike Jonze movie about "being" him?
ANSWER: **John** **Malkovich** [accept either underlined portion; accept ***Being John Malkovich***]

5. Before directing the London Fire Brigade, James Braidwood organized the first modern municipal fire brigade in this city, where he helped fight an 1824 "Great Fire" that destroyed the studio of caricaturist John Kay. The architect James Craig designed the plans for this city's New Town. A treaty named for this city ended the French siege of its nearby port of Leith (layth). The Piedmontese courtier David Rizzio was murdered by Lord Darnley and Patrick Ruthven in this city upon suspicion that he had impregnated Mary Stuart. A "renaissance" in this city's country gave it the name "Athens of the North," and it replaced Perth as the seat of the royal court during the reigns of James II and James III. The Holyrood Parliament is in, for 10 points, what city on the Firth of Forth that serves as Scotland's capital?
ANSWER: **Edinburgh** [or **Dùn Èideann**; accept **Dunedin**]

6. In a 2001 paper contrasting this value with "prices," Greg Mankiw (MAN-"cue") and Ricardo Reis ("race") proposed that its "stickiness" could be used to construct an alternative to the Phillips curve. This value is not set but instead is modeled as a probability distribution in a Bayesian game. Sets named after this value are used to indicate nodes that an agent can't distinguish between in game theory. Michael Spence contributed to the understanding of this value by introducing the concept of signaling, which, along with screening, is a method of transmitting it. George Akerlof used the example of a used-car salesman to illustrate situations in which disparities in this value cause imbalances in "The Market for Lemons." For 10 points, what value can be "asymmetric" in situations like moral hazard?
ANSWER: **information** [accept **information** stickiness or **information** asymmetry]

7. This man is the alphabetically later namesake of the quantity proportional to the integral over the whole of space-time of the Ricci scalar times the square root of the negative determinant of the metric tensor matrix. Einstein and this man name the action functional that yields the Einstein field equations through the principle of least action. A direct sum of Gelfand–Naimark–Segal representations is the same as being able to represent a C-star-algebra as bounded, linear operators on a space named for this man. He names the complex vector space, possessing an inner product, of all square-integrable functions. The state of a particle is defined by a ket in his namesake "spaces." For 10 points, what German mathematician's "spaces" are used to formulate quantum mechanics?
ANSWER: David **Hilbert** [accept Einstein–**Hilbert** action or **Hilbert** space(s)]

8. In a story by this author, a resident of Jeddah, who imagines that her furniture is moving during the night, is tormented by an unwanted friendship with the Pakistani man Ijaz. This author's time in Saudi Arabia inspired that short story, "Sorry to Disturb." In a novel that opens in Putney as the protagonist is brutally beaten by his drunkard father Walter, this author created a protagonist who raises Rafe Sadler as his clerk and loses his family to sweating sickness. Her novel *The Mirror and the Light* will complete a trilogy that has won two Booker Prizes and draws from a cast of historical figures including Stephen Gardiner, Jane Seymour, Thomas Wolsey, and Henry VIII. For 10 points, what British writer portrayed the life of Thomas Cromwell in her novels *Bring Up the Bodies* and *Wolf Hall*?
ANSWER: Hilary **Mantel** (man-TELL) [or Hilary Mary **Mantel**]

9. In one of this composer's operas, an unusual alto saxophone solo opens the mezzo-soprano aria "Va! Laisse couler mes larmes" ("less" coo-LAY meh LARM); that opera by this composer begins and ends with the bailiff's children performing the Christmas carol "Noël! Jésus vient de naître" (no-ELL! Zhay-soos vee-AWNT de "NIGHT"-ruh). The title character of one of this man's operas dies in her lover's arms while marching to Le Havre to be deported. In an opera by this composer, a D-major entr'acte for orchestra and solo violin plays as the title courtesan thinks about converting to Christianity. The title character recites Ossian's poetry in front of his married love interest, Gretchen, in this composer's adaptation of Goethe's *Sorrows of Young Werther* (VAIR-tair). For 10 points, name this composer of *Manon*, who wrote the violin solo "Meditation" for his opera *Thaïs* ("tie"-EES).
ANSWER: Jules **Massenet** [or Jules Émile Frédéric **Massenet**]

10. Upon being informed that this politician intended to flee the country, a leader gave the enigmatic response "rain must fall." As defense minister, this man coordinated his country's response to the Zhenbao (jen-bao) Islands incident. A propaganda campaign launched after his death encouraged citizens to "criticize" both Confucius and this man. This giver of a speech that popularized the "Four Olds" was the alleged leader of the Project 571 conspiracy. After Peng Dehuai (pung duh-h'wye) was purged, this man became his country's de facto second-in-command. Though not a member of the Gang of Four, this politician oversaw much of the Cultural Revolution before allegedly planning a coup against Mao. For 10 points, what vice chairman of the Chinese Communist Party died in a suspicious 1971 plane crash?
ANSWER: **Lin** Biao

11. While lodging in a chapel with Hector de Maris (de mah-REES), this man dreamt about a group of 150 bulls, only three of which were white. He once awoke to find a naked sword lying over his throat after he betrayed Pelleas's (pell-eh-AHS's) trust by sleeping with the Lady Ettard (eh-TARD). At a feast hosted by King Pelles, this man ate only bread and water before inquiring about the meaning of the Grail procession, thereby breaking the curse over the Waste Land. After Lancelot accidentally killed this man's brothers while rescuing Guinevere from being burned at the stake, this knight was mortally wounded by Lancelot in a duel. This brother of Gareth and Gaheris was the son of Morgause (mor-GOHZ) and King Lot of Orkney. For 10 points, what Round Table knight and nephew of Arthur played a beheading game with the Green Knight?
ANSWER: Sir **Gawain** [accept *Sir **Gawain and the Green Knight***]

12. Barnett Newman wrote to Sidney Janis that this artist "talks the fighter" but fights only to "submit to the philistine world." Early in this man's career, he signed a manifesto with nine other "Whitney dissenters" who opposed traditional forms. Newman's statue *Broken Obelisk* sits near 14 paintings by this man that were commissioned by John and Dominique de Menil (de meh-NEEL). After breaking with mentor Milton Avery, he painted "multiforms" that anticipated his mature style. In 1970, the Tate Gallery received paintings—which this man had refused to give to a restaurant in the Seagram Building—on the same day that he committed suicide. The *Four Seasons* murals were painted by, for 10 points, what man who decorated a namesake chapel in Houston and was a Lithuanian-born color-field painter?
ANSWER: Mark **Rothko** [or Markus Yakovlevich **Rotkovich**; or Markuss **Rotkovics**]

13. This process occurs in two steps in the Lumry–Eyring model. Thermal shift assays give the midpoint temperature for this process. It causes the ellipticity to go to zero in a CD experiment. This process can be likened to escaping from the bottom of the energy funnel into another local minimum, such as the molten globule. Lithium per·chlorate and guanidinium thiocyanate (gwah-NID-ee-um "thigh"-oh-"SIGH"-an-ate) induce this process because they are chaotropes (KAY-oh-"tropes") on the Hofmeister series. SDS is added before PAGE ("page") to charge the sample and induce this process. A mix of 8-molar urea and beta-mercaptoethanol accomplished this destructive task in Anfinsen's experiment. Reducing disulfide bonds and disrupting tertiary structure to make a random coil accomplishes, for 10 points, what process in which proteins lose their 3D structure?
ANSWER: protein **denaturation** [or word forms; or protein **unfolding** or forms of the word **unfold**; or protein **melting** or forms of the word **melt**; prompt on protein "aggregation" or "protein linearization"; do not accept or prompt on "folding"]

14. In a story credited to Laurentius Abstemius (law-REN-tee-uss ab-STEE-mee-us), one of these animals allows his daughter to marry a much smaller creature, and the daughter steps on her husband on the wedding night. In writing that lauded the humble contributions of the Royal Oak, a tree behind which Charles II hid from Roundhead forces at the Battle of Worcester (WUH-stir), Aphra Behn compared Charles to an animal of this type, echoing a story that is the 150th entry in the Perry Index. A man is saved from execution when one of these animals refuses to eat him in a story, reworked into a play by George Bernard Shaw, in which the Christian shepherd Androcles pulls a thorn from the paw of this kind of animal. For 10 points, what kind of animal is saved from a hunter's net by a mouse in one of Aesop's fables?
ANSWER: **lion**s [or *Panthera leo*; or *P. leo*; accept "The **Mouse and the Lion**" or "**Androcles and the Lion**"; prompt on "leo"]

15. According to legend, the founder of this organization smuggled bread in his cloak to a group of besiegers but, when captured, was found with a bag full of stones. The papal bull *Ad providam* ("ad" proh-vee-dahm) granted numerous properties and assets to this organization, which was organized into administrative divisions called *langue* (lahng), each headquartered at an *auberge* (oh-BAIRZH). This group, founded by the Blessed Gerard, controlled the fortresses of Margat (mar-GAH) and Krak des Chevaliers ("crack" deh sheh-val-YAY) before it was forced from the Holy Land. Although its grand master Philippe de Villiers de L'Isle-Adam (fih-LEEP de VILL-yer de leel-ah-DAM) failed to defend a siege by Suleiman the Magnificent at Rhodes, this order later decisively held off the Ottomans at the Great Siege of Malta. For 10 points, what Christian military order grew out of an infirmary for pilgrims in Jerusalem?
ANSWER: Knights **Hospitaller** [or Order of **Hospitallers**; or Knights of **St. John**; or Order of **St. John**; or Knights of the **Hospital**; accept "Knights of **Malta**" before "Malta"; prompt on "Knights of Rhodes"]

16. The *Mishneh Torah* describes three types of this practice—called *chatat*, *olah*, and *shelamim* (hah-TAHT, OH-lah, and SHEL-ah-meem)—that conclude the Nazirite vow. The book of Joshua mentions that this practice was prevalent in the city of Shiloh, where it was carried out on a "horned" object. In Leviticus, Nadab and Abihu, who were Aaron's two eldest sons, were consumed by fire after attempting this practice with "strange fire." Christians believe that this practice, known by the Hebrew term *qorban* ("core"-BAHN), is no longer necessary because of Jesus's death. The Hebrew term *Akedah* refers to an instance of this practice that God commanded to take place atop what would become the Temple Mount. For 10 points, what practice involving a ram did Abraham carry out after God nearly made him do it to his son Isaac?
ANSWER: **sacrificing** to God [or sacrificial **offering**s to God; accept answers mentioning forms of the word **sacrifice** or **offering**; accept animal **sacrifice** or human **sacrifice** or word forms thereof; accept **sacrifice** of Isaac or equivalents mentioning "Isaac"; accept answers mentioning "Lord" or "Yahweh" or "YHWH" or "Hashem" or "Adonai" or "El(ohim)" or "Eloah" or "Elohai" or other synonyms for "God" instead of "God"; accept **qorban** before "qorban"]

17. In Prokofiev's *Romeo and Juliet*, 15 straight notes from this instrument signify the death of Tybalt. Beethoven's Eighth Symphony requires that these instruments be tuned specifically to play octave Fs, and in the scherzo of Beethoven's Ninth Symphony, this instrument has a brief one-measure solo as the rest of the orchestra is silent. In the early 1800s, Gerhard Cramer's technical innovations allowed for the rapid tuning of this instrument, which was developed from the Arabic naker. This instrument has a solo at the beginning of Beethoven's violin concerto, and Haydn's 103rd Symphony earns its nickname from the fact that the introduction features a long "roll" for this instrument. For 10 points, name this percussion instrument also known as the kettledrum.
ANSWER: **timpani**(s) [accept **kettledrum**(s) before "kettledrum"; prompt on "drum(s)"]

18. A venue named for this family employed Oscar Tschirky, a celebrity chef who popularized Thousand Island dressing. This family commissioned a travelogue about Benjamin Bonneville's cross-country expedition written by Washington Irving. One of its members names the location of an 1849 riot between supporters of William Macready and Edwin Forrest, who were rival Shakespearean actors. This family got rich off of a trading post on Mackinac (MAK-in-"awe") Island and patronized society columnist Ward McAllister, who helped them ostracize nouveau-riche ("KNOW"-voo REESH) families like the Vanderbilts. The first scion of this family built a namesake fort in Oregon to protect the interests of his American Fur Company. For 10 points, name this German-American family whose patriarch was John Jacob.
ANSWER: **Astor** family [accept **Astors** or Waldorf-**Astoria** Hotel or **Astor** Place (riot) or Fort **Astoria** or John Jacob **Astor**; accept **Waldorf** family or **Waldorfs** before "Benjamin"]

19. The Nebraska Transposon Mutant Library consists entirely of variants of the USA300 strain of this organism. A protein from this organism tightly binds Fc (F-C) and is used to purify antibodies in "protein A chromatography." This organism is DNAse (D-N-"ace") positive, agglutinates (ag-"GLUE"-tin-ates) fibrinogen ("fie"-BRIN-oh-jen) into fibrin (FIB-rin) with coagulase (koh-AG-yoo-"lace"), and ferments mannitol to an acid that makes "phenol (FEE-nol) red" turn yellow. This organism's cassette chromosome encodes a transpeptidase called P·B·P·2·a. Pathogenicity islands in this organism encode the antigen for toxic shock syndrome. This Gram-positive bacterium is named because it grows in golden colonies. It has recently acquired resistance to vancomycin (vank-oh-MY-sin) in addition to beta-lactam antibiotics like methicillin (meth-ih-SILL-in). For 10 points, name this superbug that causes Staph infections.
ANSWER: ***Staphylococcus aureus*** [or ***Staph aureus***; or ***S. aureus***; accept methicillin-resistant *****S**taphylococcus aureus*** or **MRSA**; prompt on "*Staphylococcus*" or "*aureus*"; prompt on "Staph" before "Staph"]

20. After Cody is killed in an event of this type, a white-haired "stickman" holds Cody in his arms and tells him God loves him at the end of George Saunders's story "The End of FIRPO in the World." The narrator of a 1973 novel thinks that all mankind will perish in one of these events and has an affair with Helen Remington, a fellow survivor of one. In that novel titled for these events, Robert Vaughan orchestrates one that will kill him and Elizabeth Taylor because these events arouse him sexually. Just after discovering Humbert Humbert's diary entries about Lolita, Charlotte Haze is killed in one of these events. In *The Great Gatsby*, Daisy Buchanan causes the death of Myrtle Wilson in this kind of event. For 10 points, name these accidents that are the focus of J. G. Ballard's novel *Crash*.
ANSWER: **car accident**s [accept any answer mentioning **accident**s or **crash**es and the idea of **car**s or **auto**s or **automobile**s; prompt on less-specific answers mentioning "**accident**s" or "**crash**es"; do not accept or prompt on answers mentioning accidents of other types of vehicles, such as "motorcycle accidents"]

TB. A poet from this modern-day country wrote that "if love's labor's lost in every age, I'll gladly lose it here." An author from this country wrote that by "believing in the sea, thus I can hope for land" in her poem "Bohemia Lies by the Sea." In a play set in this country's capital, ten characters, including the Count and the Parlor Maid, appear on stage two at a time, with each newcomer replacing one person already on stage, so as to represent a long chain of romantic relationships. This country was the birthplace of Ingeborg Bachmann and the author of *La Ronde*, Arthur Schnitzler. Writers such as Thomas Bernhard, Stefan Zweig (Z'VYGE), and Sigmund Freud frequented the coffeehouses of, for 10 points, what central European country whose capital is Vienna?
ANSWER: **Austria** [or Republic of **Austria**; or Republik **Österreich**]

1. A character created in this kind of publication is the subject of a 2014 "secret history" by Jill Lepore. For 10 points each:
[10] Name this kind of publication that censored itself under a namesake "code authority." The "Golden Age" of these publications popularized characters such as "the Spirit" and Superman.
ANSWER: **comic** books [or **comic**s; or superhero **comic**s]
[10] The Comic Code Authority was established in the wake of a Senate investigation into "juvenile delinquency" led by this politician. This Democratic senator from Tennessee was Adlai Stevenson's running mate in 1956.
ANSWER: Estes **Kefauver** [or Carey Estes **Kefauver**]
[10] Kefauver's investigation was inspired by this 1954 Fredric Wertham book, which argued that comic books taught children bad values. Among other dubious claims, it asserts that Batman and Robin are gay lovers.
ANSWER: ***Seduction of the Innocent***

2. This statistic can be defined as the mean square error between groups over the mean square error within groups. For 10 points each:
[10] Name this statistic used to test for significance by comparing it to a distribution that is the ratio of two chi-squared (KYE-"squared") distributions, each divided by their degrees of freedom.
ANSWER: F-statistic [or F-test statistic; or F-value]
[10] The F-statistic is used in the F-test for this general method of statistical analysis. This method, developed by Ronald Fisher, is used to check whether the means across many groups are equal, as opposed to Student's t-test, which can only handle two groups.
ANSWER: **ANOVA** [or **analysis of variance**]
[10] ANOVA is preferable to Student's t-test for many groups because every time you use Student's t-test, you increase the amount of this type of error. This type of error is the incorrect rejection of a null hypothesis, otherwise known as a false positive.
ANSWER: type **one** error [or **alpha** level; or **significance** level]

3. After this character quotes the sentence "mirrors and copulation are abominable, because they increase the number of men," he and his friend are surprised not to find it in a reference source. For 10 points each:
[10] Name this character who, in that story, finds another copy of *The Anglo-American Cyclopaedia* that contains a chapter on an obscure kingdom of Asia Minor.
ANSWER: **Adolfo** **Bioy Casares** (bee-OY cah-SAH-"race") [accept either underlined portion; prompt on "Bioy" or "Casares"]
[10] Bioy Casares is a character in this short story written in Spanish that is titled after that fictional kingdom, a fictional world from its mythology, and a secret society that invented them both.
ANSWER: "**Tlön, Uqbar, Orbis Tertius**" (t'LAWN OOK-bahr ORB-is TUR-shuhs)
[10] In real life, Bioy Casares was a good friend of and collaborator with this author of "Tlön, Uqbar, Orbis Tertius," which was reprinted in this man's collection *Ficciones* (fix-ee-OH-nace).
ANSWER: Jorge Luis **Borges** [or Jorge Francisco Isidoro Luis **Borges** Acevedo]

4. Sherrie Levine held a solo show at the Metro Pictures Gallery featuring a set of photographs titled "after" this photographer, whose images she had rephotographed from a catalogue. For 10 points each:
[10] Name this Depression-era photographer whose portrait of Allie Mae Burroughs was among the many appropriated by Levine. He collaborated with James Agee on *Let Us Now Praise Famous Men*.
ANSWER: Walker **Evans** [accept *After Walker Evans*]
[10] This artist appropriated photographs used in Marlboro cigarette ads for his *Cowboys* series. His *New Portraits* series consists of enlarged Instagram photos, complete with "likes" and comments.
ANSWER: Richard **Prince**
[10] Contemporary appropriation art owes much to the influence of this early appropriator, whose *L.H.O.O.Q* (ell ahsh oh oh koo) added a moustache to a reproduction of the *Mona Lisa*. His readymades include *Fountain*.
ANSWER: Marcel **Duchamp** [or Henri-Robert-Marcel **Duchamp**]

5. In a story about a man who is madly in love with a princess whom he likely will never have, this figure believes that somehow they will get together, in stark contrast to the aesthetic slaves who give up on the love. For 10 points each:
[10] Name this paradoxical figure who has surpassed the stage of infinite resignation. An author who failed to marry Regine Olsen admitted that he was not this figure.
ANSWER: **knight of faith** [prompt on "knight" or "faith"]
[10] Abraham is offered as an example of a "knight of faith" in this Danish existentialist's book *Fear and Trembling*.
ANSWER: Soren **Kierkegaard** [or Soren Aabye **Kierkegaard**]
[10] In *Fear and Trembling*, Kierkegaard writes that faith is gained through repetition, which is the "forward" version of this concept. In *Phaedo*, Plato argues that this is the process by which the soul regains its true knowledge.
ANSWER: **recollection** [accept **anamnesis** or psychic **recollection**; accept forms of the word "recollection" such as **recollecting** or **recollect**; do not accept or prompt on putative synonyms such as "memory"]

6. Answer the following about unconventional methods of drug delivery, for 10 points each.
[10] Pfizer's plan for pulmonary delivery of this protein drug, marketed as Exubera, notoriously failed in 2007 because diabetics weren't keen on the idea of huffing it after meals to lower their blood sugar.
ANSWER: recombinant **insulin**
[10] Glaucoma is often treated using eye drops comprising dorzolamide (dor-ZOHL-uh-mide) and other inhibitors of this enzyme, which are emulsified or trapped in vesicles. In the blood, this enzyme interconverts carbon dioxide and bicarbonate.
ANSWER: **carbonic anhydrase**(s) [accept **carbonate dehydratase(**s)]
[10] Although transdermal delivery works well for contraceptive hormones and nicotine patches, it only works for drugs that diffuse through this thick lipophilic outer layer of the epidermis, which is composed of dead skin cells.
ANSWER: **stratum corneum** [prompt on "corneal layer"]

7. In a Russian folktale, one of these animals served as Ivan's mount to make up for eating his horse and later retrieved the "Water of Life and Death" to revive Ivan after he was killed by his envious brothers. For 10 points each:
[10] Name these animals that are also central to many folktales from Chechnya. In another mythos, these animals include Hati, Sköll, and the monstrous Fenrir (FEN-reer).
ANSWER: **wolves** [or **wolf**; or **volk**ov; or **ulf**r; accept Eurasian **wolf** or **wolves**]
[10] Ivan met the Wolf on his way to capture one of these creatures, which had stolen golden apples belonging to his father. To abduct the weaver Maryushka (mar-YOOSH-kah), Koschei (KOSH-chay) the Deathless turned her into one of these creatures.
ANSWER: **firebird**s [or **Zhar-ptitsa**]
[10] During his attempt to steal the Firebird from its owner, Ivan was captured because bells sounded when he tried to take this additional item with him. The Wolf had specifically instructed him not to touch this golden object.
ANSWER: Firebird's golden **cage**

8. For 10 points each, answer the following about the House of Wisdom, the most happening library in medieval Baghdad.
[10] The House of Wisdom was patronized by the rulers of this caliphate, which was governed from Baghdad until its 1258 sacking by Hulagu Khan. This caliphate overtook the Umayyads (OO-"my"-ahds) in 750 CE.
ANSWER: **Abbasid** Caliphate (ah-bah-sid) [or Khilafah al-'**Abbasiyah**; accept **Abbasid** dynasty or **Abbasids**]
[10] This fifth caliph of the Abbasid Empire founded the House of Wisdom. His court sent a number of extravagant gifts to Charlemagne, including a water clock and an elephant named Abul-Abbas.
ANSWER: **Harun al-Rashid** (hah-ROON ahl-rah-SHEED) [or **Harun al-Rasid**; accept **Harun the Just** or **Harun the Rightly-Guided** or **Aaron the Just** or **Aaron the Rightly Guided**; prompt on "Harun" or "al-Rashid" or "Aaron"]
[10] The House of Wisdom employed the Banu Musa, a group of three brothers who collected their research into this publication. This work, first published in 850 CE, describes fanciful automata such as a programmable flute player.
ANSWER: ***Book of Ingenious Devices*** [or ***Kitab al-Hiyal***]

9. This author wrote a novel about a hostage crisis that ensues when rebels in a South American country attack a birthday party for Katsumi Hosokawa, who falls in love with the soprano Roxane. For 10 points each:
[10] Name this living American novelist who wrote *Bel Canto* and *State of Wonder*. Her most recent novel, *Commonwealth*, traces over five decades in the lives of six children who become step-siblings after the marriage of Bert Cousins and Beverly Keating.
ANSWER: Ann **Patchett**
[10] *Commonwealth* opens at a christening party in this city, where Fix Keating is a police officer. Bret Easton Ellis's *Less than Zero* and *The Informers* are set in this city, as are many works by Charles Bukowski.
ANSWER: **Los Angeles**, California [or **L.A.**]
[10] Patchett compared this contemporary author to a performer juggling ten balls in a review of his latest novel, *Purity*. Like Patchett, he chronicles life in white America, as in his novels *Freedom* and *The Corrections*.
ANSWER: Jonathan **Franzen** [or Jonathan Earl **Franzen**]

10. This piece has a third movement marked *Presto* in its original key of G minor that is reminiscent of a tarantella, and it was premiered by its composer and his longtime duet partner, Anton Rubinstein. For 10 points each:
[10] Name this concerto that Zygmunt Stojowski (stoh-YOFF-"ski") caricatured as beginning with Bach and ending with Offenbach.
ANSWER: Camille **Saint-Saens**'s (sant-sawns's) **Piano** Concerto no. **2** in G Minor [accept **Saint-Saens**'s **Second Piano** Concerto or other answers mentioning **Saint-Saens** and **piano** and **2** or **second**]
[10] Saint-Saens composed this 14-movement suite, in which one movement uses two pianos and a cello to depict a swan. Other sections of this suite include "Fossils," "The Elephant," and "Kangaroos."
ANSWER: The ***Carnival of the Animals*** [or Le ***carnival des animaux***]
[10] Saint-Saens dedicated this two-movement symphony to Franz Liszt. This symphony takes its nickname from its prominent use of an instrument that produces very low pedal notes in the *Maestoso* (my-es-TOH-so) section.
ANSWER: Symphony no. **3** [or **Organ** Symphony]

11. The Al-Masih ad-Dajjal (al-mah-SEE ad-dah-JAHL), a "deceiver" who will pretend to be this figure, will be defeated with the help of Isa. For 10 points each:
[10] Name this figure from Islamic eschatology whose prophesied return will presage the Day of Judgment.
ANSWER: **Mahdi** [accept Muhammad al-**Mahdi** or **Twelfth Imam**; prompt on "Guided One"]
[10] The term *Ghaybah* ("GUY"-bah) refers to this Shia belief, which holds that the Mahdi has already been born but has disappeared. Most Shiites hold that there are "major" and "minor" components to this belief.
ANSWER: **Occultation** of the Mahdi [accept Major **Occultation** or Minor **Occultation**]
[10] This sect of Sevener Shiites attacked Mecca in 930, looting the Kaaba and throwing bodies down the well of Zamzam, purportedly because its members believed that the attack would provoke the Mahdi's return.
ANSWER: **Qarmatian**s (kar-MAY-shens) [accept **Carmathian**s or **Qarmathian**s or **Karmathian**s]

12. Edith Humphrey, a grad student of Alfred Werner, was the first person to discover that coordination complexes can have this property. For 10 points each:
[10] Name this property possessed by propeller complexes with three bi·dentate ligands. Molecules with this property are in the C_1 (c "one") point group and must not contain an inversion center or plane.
ANSWER: **chirality** [accept word form such as **chiral**; accept **enantiomeric** or word forms such as **enantiomer**s; accept **handed**ness or word forms such as **handed**; accept **asymmetric** or word forms such as **asymmetrical**]
[10] Chirality can exist in coordination complexes both with octahedral geometry and with this more conventional molecular geometry, which is seen on chiral carbons; s·p·3 carbons, like those in methane, have this geometry.
ANSWER: **tetrahedral**
[10] A chiral tris-bipyridine (tris-"buy"-PEER-id-een) propeller complex of this metal is frequently used as a photoredox ("photo"-REE-dox) catalyst because it is both easy to reduce and to oxidize. Olefin metathesis (OH-leh-fin meh-TATH-es-iss) is catalyzed by a carbenoid (CAR-ben-oyd) complex containing this metal.
ANSWER: **ruthenium** [or **Ru**]

13. In a play from this country, the protagonist is treated as a suspect by detectives Tupolski and Ariel because he writes stories depicting violence against children, mirroring parallel crimes in the real world. For 10 points each:
[10] Name this country where Martin McDonagh (mac-DON-ah) set his play *The Pillowman*. The playwright Brian Friel lived most of his life in this country after being born in a neighboring country.
ANSWER: **Ireland** [or Republic of **Ireland**; or **Eire**; or Poblacht na h**Éireann**; do not accept or prompt on "Northern Ireland"]
[10] This is the first name of *The Pillowman*'s protagonist, whose last name is Katurian. After revealing to a surprised Tupolski his full name, Katurian explains that his abusive parents were "funny people."
ANSWER: **Katurian** (His full name is "Katurian Katurian Katurian.")
[10] In McDonagh's *The Pillowman*, Katurian writes a story about a green one of these creatures that is ridiculed by the other animals until a magical rain makes everyone green. Napoleon and Snowball are examples of these animals in George Orwell's *Animal Farm*.
ANSWER: **pig**s [accept **boar**s]

14. According to Livy, Paculla Annia (pah-COOL-ah AH-nee-ah) was a Campanian priestess responsible for the rapid spread of the mystery cult that organized these festivals. For 10 points each:
[10] Name these festivals that were suppressed by Spurius Postumius Albinus in 186 BCE because of moral concern over their violence and sexual promiscuity. They were held in honor of the primary god of wine.
ANSWER: **Bacchanalia** (bahk-a-"NAIL"-ya) [accept **Bacchanalias**]
[10] Hispala Faecenia, who testified before the senate over the Bacchanalia, was a freed slave who worked in this profession, which was based in establishments called *lupanars*, also known as "wolves' dens."
ANSWER: **prostitute**s [accept word forms; accept synonyms]
[10] The Bacchanalia cults were especially popular on this hill of Rome, which gives its name to a "triad" of deities comprising Ceres and the wine gods Liber and Libera. This hill was closely associated with the plebeian class.
ANSWER: **Aventine** Hill [or Collis **Aventinus**; accept **Aventine** Triad]

15. This technique, whose name was first coined by the Jesuit scholar Gaspar Schott, was used in many engravings by Erhard Schön. For 10 points each:
[10] Name this art technique said to have first been used for an "eye" drawn in Leonardo da Vinci's sketchbooks.
ANSWER: **anamorphosis** [or **anamorphic** images; or **anamorphoses**]
[10] An anamorphic skull appears as a *memento mori* at the bottom of this painting of the Frenchmen Jean de Dinteville ("dawn"-teh-VEEL) and Georges de Selve (zhorzh de SELV) by Hans Holbein the Younger.
ANSWER: The ***Ambassadors*** [or The ***French Ambassadors***]
[10] The Hungarian artist István Orosz (EESHT-vahn oh-"ROSE") argued that this man's autobiography offered circumstantial evidence that Holbein had based the skull in *The Ambassadors* on a now-lost Leonardo treatise on anamorphosis, which Dinteville had possibly sold to this artist and goldsmith who worked in the court of Francis I of France.
ANSWER: Benvenuto **Cellini**

16. D. H. Lawrence wrote *The Plumed Serpent* while living on a ranch on the outskirts of this city. For 10 points each:
[10] Name this New Mexico town where Georgia O'Keeffe, Aldous Huxley, and other prominent artists stayed as a part of Mabel Dodge Luhan's art colony.
ANSWER: **Taos**
[10] Marian MacDowell founded an art colony in this state's town of Peterborough, found about 40 miles southwest of this state's capital, Concord.
ANSWER: **New Hampshire**
[10] In the 1960s, Timothy Leary and Richard Alpert tried to found a counterculture art colony in this Mexican beach city, where they also conducted many LSD experiments. This city in Guerrero province is where Andy Dufresne (doo-FRAYN) flees to in *The Shawshank Redemption*.
ANSWER: **Zihuatanejo** (zee-wah-tah-NAY-ho)

17. This thinker's book *Islands of History* was attacked in Gananath Obeyesekere's (oh-bur-"SEEK"-ruh's) *The Apotheosis of Captain Cook*, sparking a debate over how Hawaiian Islanders think. For 10 points each:
[10] Name this anthropologist who observed that hunter-gatherers expended less energy to support themselves than anyone else and were thus the "original affluent society."
ANSWER: Marshall **Sahlins**
[10] Sahlins also got into an exchange with Marvin Harris over Harris's treatment of the Aztec practice of this activity. This activity may have transmitted the infectious prions from dead people that spread the brain disease kuru among the Fore ("foray") people of Papua New Guinea.
ANSWER: **cannibalism** [accept word forms such as **cannibalizing**; accept synonyms such as **anthropophagy** or **eating people**]
[10] Harris noted that, like Polanyi, Sahlins belonged to this school of thought, which holds that non-industrial economies are embedded in non-market institutions, in contrast to the "formalist" school of thought.
ANSWER: **substantivist** [accept word forms such as **substantivism**]

18. In the late 1930s, this country's government was controlled by a group of colonels who were close to its chief of state, Józef Piłsudski (YOH-zef peew-ZOOD-"ski), who came to power in the May Coup in 1926. For 10 points each:
[10] Name this country that was invaded by Nazi Germany on September 1, 1939, on which date a group of defenders failed to hold the post office in its city of Danzig.
ANSWER: **Poland** [or Republic of **Poland**; or Commonwealth of **Poland**; or (Second) **Polish** Republic; or Rzeczpospolita **Polska**]
[10] Piłsudski died shortly after overseeing the passage of a Polish constitution named for this month. Vladimir Lenin called on the Bolsheviks to rise up in a set of directives named for this month.
ANSWER: **April** [accept **April** Constitution or **April Theses** or **Ustawa** konstytucyjna or **Aprel'skie Tezisy**]
[10] Piłsudski and his allies put forward this political ideology, which was closely associated with the BBWR and gets its name from Piłsudski's hopes for its intended effect on the body politic. The English word is also acceptable.
ANSWER: **Sanacja** (sah-NAHTS-yah) [or **Sanation**; accept **heal**ing or close English equivalents to **heal**ing]

19. In natural units, this principle can be stated as replacing the four-momentum with the four-momentum minus the fundamental charge times the four-potential. For 10 points each:
[10] Name this rule that allows one to add electromagnetic interactions to the Schrödinger, Dirac, or Klein–Gordon equations by ignoring everything but the first multipole moment.
ANSWER: principle of **minimal substitution** [or principle of **minimal coupling**]
[10] The four-potential is a combination of the electric scalar potential and what quantity symbolized A?
ANSWER: magnetic **vector potential**
[10] This operation on the magnetic vector potential yields the magnetic field. This vector operation is usually written as the cross product of del and the vector field of interest.
ANSWER: **curl**

20. Sigmund Freud's biographer, Ernest Jones, wrote a book titled for Hamlet and this play's title character. For 10 points each:
[10] Name this tragedy that was adapted into Jean Cocteau's play *The Infernal Machine*.
ANSWER: **Oedipus** *Rex* [or **Oedipus Tyrannus**; or **Oedipus the King**; or **King Oedipus**]
[10] An adaptation of Sophocles titled *Oedipe* established the reputation of this French writer, who later created the dour philosopher Martin in his novel *Candide*.
ANSWER: **Voltaire** [or François-Marie **Arouet**]
[10] The ability of *Oedipus Rex* to affect "a public that shudders at train wrecks, that is familiar with earthquakes, plagues, revolutions, wars" is criticized at the beginning of this Frenchman's essay "No More Masterpieces," found in a 1938 collection in which he advocated for unrelenting agitation in drama.
ANSWER: Antonin **Artaud** [or Antoine Marie Joseph **Artaud**]

Extra. William Sealy Gosset developed his Student's t-distribution while working for this company, which granted grudging permission for him to publish his results. For 10 points each:
[10] Name this company that was created in 1759 after its founder purchased a 9,000-year lease at St. James' Gate for an annual rent of 45 pounds a year. Patrick Lynch and John Vaizey wrote a study of this company's economic impact.
ANSWER: **Guinness** Brewery [prompt on "St. James's Gate Brewery"]
[10] Arthur Guinness was accused of spying for the British during the Irish Rebellion of 1798, which was put down by this lord lieutenant of Ireland. This British general surrendered to George Washington at Yorktown.
ANSWER: Charles **Cornwallis**, 1st Marquess Cornwallis [accept the Earl **Cornwallis** or Viscount **Brome**]
[10] While in Ireland, Cornwallis oversaw the passage of one of these legislations. The failure of the Darién scheme forced Scotland to agree to one of these legislations in 1707.
ANSWER: **Act of Union** [accept **Acts of Union**; prompt on answers describing the "union of Great Britain and Ireland" or "union of England and Scotland"]