**2019 National All-Star Academic Tournament**

**Round 16 – Tossups**

1. In one form of this technique, a discontinuity can be created on a surface by introducing a barrier whose strength impacts the effective distance. It's not filtering, but this task can be accomplished by discrete convolution with the Lanczos **(LAHN-chos)** kernel. Using a collection within a defined search radius and introducing a direction factor were part of Donald Shepard's method for the multivariate form of this task, which improved upon inverse distance weighting. The Whittaker-Shannon formula allows for this technique to be accomplished using an infinite series of sinc functions. It's not smoothing, but this task can be accomplished using kriging or cubic splines. When performing this task on equispaced points, Runge's **(roon-guh's)** phenomenon becomes more prominent when employing higher order polynomials. For 10 points, name this technique of constructing new data points *within* a set of known data points.  
ANSWER: **interpolation** [ prompt on approximation; prompt on curve fitting; prompt on Shepard's method/algorithm ]  
*<Science Math - Etzkorn>*

2. In this novel, a woman tells her daughter not to listen to a woman who bullied her since “She is like this crab… Always walking sideways, moving crooked.” The author of this novel recalled knowing she had “succeeded where it counted” after her mother read it and gave the verdict: “So easy to read.” In this novel, a girl mockingly asserts “You aren't a genius like me” after another girl's disastrous piano recital, which is only enjoyed by her deaf teacher Mr. Chong. This novel opens with three “Aunties” telling the protagonist that they made contact with her lost half-sisters, who her mother was forced to abandon while escaping from Kweilin on foot. In this novel, the St. Clairs, the Hsus, the Jongs, and the Woos regularly meet and play *mah jong*. For 10 points, name this novel of sixteen stories about four Chinese immigrant mothers and their daughters, by Amy Tan.  
ANSWER: *The* ***Joy Luck Club***  
*<Literature American - French>*

3. Hermann Diels developed an influential system for organizing this thinkers works based upon the author citing him. Book 9 of *Lives of the Eminent Philosophers* begins with a biography of this thinker, and claims that he once fled society to live alone in the mountains. This thinker said that Homer should have been “beaten with a staff,” and also wrote that “war is common” and “strife is justice.” This philosopher argued that “all things are in accordance with logos,” but humans cannot understand it. Lines like “The name of the bow is life; its work is death” display his “unity of opposites”, and, in a Platonic dialogue named for his student, Socrates discusses his saying that one cannot step in the same river twice. For 10 points, name this Greek philosopher who believed the world was in constant flux and made from fire.  
ANSWER: **Heraclitus**  
*<RMP Philosophy/Thought - Lucas>*

4. This composition almost never saw the light of day due the composer's worry that “people [would] go home and shoot themselves” after listening due to its pessimism. The last movement of this work is marked “without regard for tempo” and is the only movement to employ a celesta, which is joined by harp and mandolin. This work ends with the orchestra fading out as the soloist twice repeats the word “ewig.” A refrain meaning “Dark is life, dark is death” is pitched a semitome higher each time it appears in the first movement of this piece. A book by Hans Bethge was the source of the texts for this work, whose movements “Of Youth,” “Of Beauty,” and “The Drunkard in Spring” are based on poems by Li Bai. Left unnumbered to avoid the “curse of the ninth,”—for 10 points—name this song-symphony by Gustav Mahler.  
ANSWER: *The****Song of the Earth*** [or Das ***Lied von der Erde***]  
*<Arts Music - Smith>*

5. One US intervention in this country was justified by a claim that its government was attempting to establish a “Mexican-Bolshevik hegemony”. One rebel leader in this country destroyed facilities belonging to the La Luz and Los Angeles Mining Company, the treasurer of which, Adolfo Diaz, would later become this country's president. This country signed away control of the Corn Islands in a treaty named for Emiliano Chamorro, who led conservative opposition to José Santos Zelaya. The Boland Amendment blocked the US from funding rebels in this country, where the Miskito people were relocated during a war that took place after the overthrow of Anastasio Somoza. This country was led after that civil war by a party named for Augusto Sandino. For 10 points, name this country where *contra* rebels were funded by the United States in the 1980s.  
ANSWER: Republic of **Nicaragua**  
*<History World - Myers>*

6. Operating these devices with integer values of the tune creates undesirable resonances. In these devices, the field index must be between zero and one for stable orbits to occur. The largest one of these devices in the world is located at TRIUMF in Vancouver. Pole tips with “hills” and “valleys” can be used in these devices to provide enhanced weak focusing. To account for relativistic effects, the driving RF frequency is varied in the “synchro” variety of these devices. Particles in these devices traverse two hollow D-shaped electrodes inside a vacuum chamber. The frequency of particles in these devices equals the particle's charge times the magnetic field divided by the particle's mass. For 10 points, name these circular particle accelerators that use a constant magnetic field and an alternating electric field to accelerate particles unlike the synchotron.  
ANSWER: **cyclotron**s [accept more specific types like synchro**cyclotron** or isochronous **cyclotron**, prompt on particle accelerators, do not accept or prompt on “synchrotrons”]  
*<Science Physics - Rombro>*

7. In a play created by this author, a woman demands that her love interest “be father and mother, brother, cousin, uncle, aunt, and friend” to her in a parody of his era's overwrought dramas. Don Ferolo Whiskerandos and Tilburina appear in that meta-play created by this author. In that play by this author, Sneer and Dangle offer malicious comments on a play by Puff. One character in another play by this author uses the pseudonym “Delia” to write fake love letters to Sir Lucius O'Trigger. Jack Absolute disguises himself as Ensign Beverley in order to court Lydia Languish in that play by this author, in which lines like “an allegory on the banks of the Nile” and “the pineapple of politeness” are spoken by her aunt, Miss Malaprop. For 10 points, name this Irish comedic playwright of *The Critic*, *The Rivals* and *The School for Scandal*.  
ANSWER: Richard Brinsley **Sheridan**  
*<Literature British Non-Shakespeare - Myers>*

8. This leader built modernist “colonies” as part of a program in which he gave free train rides to vacation destinations to poor families. The Tremiti archipelago became a center of queer culture after this leader exiled much of his country's gay population there. This leader took power following a period of strikes called the “Red Two Years”. This leader edited the antiwar socialist newspaper *Forward!* before changing his politics with the outset of World War I. The prime minister of this leader's country resigned after the king refused to declare a state of emergency when this leader organized a 1922 march on his country's capital. This man was the only leader of the Republic of Saló. This leader sent 100,000 settlers to Libya as part of a program to make it his country's “fourth shore”. This leader's supporters were nicknamed the Blackshirts. For 10 points, name this Italian fascist leader.  
ANSWER: Benito **Mussolini**  
*<History European 1914-present - Myers>*

9. A 1936 article contrasted the “contemplative absorption” depicted in one painting with this title with the “dramatic encounter” in its earlier version. In another painting of this title, the central object rests on a *cippus* **('c' as in cell)**, between a blowfly and a mouse. Erwin Panofsky discussed the grammatical ambiguity of this title in an essay that relates it to the concept of *locus amoenus*. A large skull appears on the right of Guercino's painting of this title. A painting with this title represents the invention of painting with a man tracing out his companion's shadow. In that painting, four shepherds point at this title, which is inscribed on a tomb. For 10 points, give this Latin title of a painting by Nicolas Poussin, which partly refers to an ideal pastoral land from ancient myth.  
ANSWER: ***Et in Arcadia Ego*** [accept **Shepherds** of **Arcadia** or similar translations]  
*<Arts Painting - Krol>*

10. A study by Barry Ife **(eye-f)** suggests that one literary character from this country had vision problems due to Vitamin A deficiency, since his diet was very heavy in a bean stew from this country called *olla* **(oya)**. Grains are roasted before milling in a flour called *gofio* that originates from a territory of this country. Potatoes and onions are mixed with eggs and fried in this country's namesake omelette. A soup from this country is made from blended tomatoes and cucumbers and traditionally served cold, and a seafood stew from this country derives its yellow color from the inclusion of saffron. Sheep's milk is used to make this country's Manchego cheese. Gazpacho and paella originate from, for 10 points, whatcountry where *tapas* originated in the region of Andalusia?  
ANSWER: Kingdom of **Spain** [accept Reino de **España**]  
*<Geography Europe - Myers>*

11. *Description acceptable*. Poseidon granted this fate to a dolphin-shaped daimon that persuaded Amphitrite to mary him. Zeus granted this fate to Erichthonius as an honor for his skill in charioteering. According to Apollodorus, this fate that is not petrification befell both the Teumessian Fox and Laelaps to resolve their paradoxical natures. After transforming her into an animal, Zeus granted this fate to Callisto and her son Arcas, right as Arcas was about to kill her. This fate befell a hunter and the scorpion that Gaia sent to kill him after he boasted that he would kill every beast on Earth. One group of seven goddesses were granted this status in order to protect them from that hunter. The Pleiades and Orion underwent, for 10 points, what fate in which the gods transform a person or animal into an astronomical feature such as Ursa Major.  
ANSWER: **catasterization** [accept **being turned into a constellation**; prompt on being turned into a star]  
*<RMP Greek/Roman Myth - Rao - Pothuraju>*

12. For natural gas, scrubbing refers to this process, which is reversed with stripping. Polyelectrolytes are part of a “super” class of compounds that perform this process efficiently, measured by their high swelling ratio. In a physical form of this process, plots of a “saturated” signal exhibit lamb dips also referred to as “hole-burning” in a technique that avoids Doppler-broadening. For a given species, an estimate for the maximum value of this process can be determined using Woodward's rules. It's not attenuation, but this process's coefficient multiplied by optical path length yields a similarly named quantity by Beer's law. In general, this process refers to one material being retained by another. For 10 points, name this process which in spectrophotometry refers to the characteristic wavelengths where light is retained by a sample.  
ANSWER: **absorption** [or **absorptivity** (coefficient); accept saturated **absorption** (spectroscopy); do not accept or prompt on absorbance; do not accept or prompt on adsorption]  
*<Science Chemistry - Etzkorn>*

13. Gerardus van der Leeuw **(fahn dair LOYV)** led a Dutch scholarly movement to study the phenomenology of this concept. This concept “is solely the creation of the scholar's study” and “has no existence apart from the academy” according to a book on *Imagining* this concept by Jonathan Z. Smith. Friedrich Schleiermacher elaborated his theory that this phenomenon centered on a “feeling of absolute dependence” in a series of *Speeches to its Cultured Despisers*. An Immanuel Kant text attempts to rebuild this concept *Within the Bounds of Mere Reason*. James Frazer's *The Golden Bough* is subtitled “a study of magic and” this concept, and is considered the first major comparative study of it. For 10 points, name this cultural phenomenon, examples of which include Christianity and Hinduism.  
ANSWER: **religion**  
*<Social Science Anthropology - Marvin>*

14. An office clerk whose job is to “take cards out of a file” lives in this country in a novel whose chapters each follow a single evening between December 22 and December 31, 1946. That novel, *The Evenings: A Winter's Tale*, is from this country, as is a novel in which the title civil servant accuses a Regent of “abuse of power” but is foiled in taking action by Mr. Slymering and the colonial bureaucracy. This European country is home to the hypocritical businessman Drystubble in Multatuli's novel *Max Havelaar*. Several sexually explicit passages of a work written in this country, including one that implied that the author's uncle Walter was gay, were uncovered in 2018 after likely being suppressed by the author's father, Otto. A work written in this country is addressed to “Kitty” and discusses the author's romantic feelings towards Peter van Daan. For 10 points, name this country where Anne Frank wrote her namesake diary.  
ANSWER: The **Netherlands** [accept **Holland**]  
*<Literature European - French>*

15. The mistress of one king with this name, Diane de Poitiers, feuded with that king's father's mistress and was forced to return the crown jewels to his wife after his death. One king of this name may have had sexual relations with his male court favorites, or *mignons*. After the Forty-Five Guards killed one nobleman with this name, the orchestrator of that killing was assassinated by Jacques Clement. The royal surgeon Ambroise Paré, the inventor of the artificial limb, failed to cure one king of this name of the illness that would kill him. One king of this name was attacked on the Day of the Barricades. A Duke of Guise with this name opposed the accession of a king with this name nicknamed “The Green Giant”. One king of this name declared “Paris is worth a mass” after winning a war named for three noble combatants of this name. For 10 points, give this name of three 16th century French kings, including a former Protestant from Navarre.  
ANSWER: **Henry** [accept **Henry II** of France, **Henry III** of France, **Henry** I, **Duke of Guise**, **Henri** for Henry in any of the above cases, **Henryk** III of Poland-Lithuania]  
*<History European 1400-1914 - Myers>*

16. Infection by distinct strains of *Wolbachia* may promote this process through a cytoplasmic mechanism in *Nasonia* wasps. The time-course of this process was examined in 119 *Drosophila* pairs by Jerry Coyne and H. Allen Orr. One step in this process is explained by alternate fixation at no fewer than two loci in the Bateson-Dobzhansky-Muller model. During secondary contact, this process can be accelerated through reinforcement, which is a result of selection against hybrids. This process may occur spontaneously due to whole genome duplications. This process relies on pre-zygotic or post-zygotic mechanisms of reproductive isolation. Depending on whether it occurs between co-occurring groups, it may be given a classification such as sympatric or allopatric. For 10 points, name this evolutionary process which results when populations can no longer interbreed.  
ANSWER: **speciation** [prompt on genetic incompatibility or mating incompatibility; prompt on reproductive isolation]  
*<Science Biology - Kothari>*

17. In a story by this author, the parenthetical statement that “There is always a last time for everything” precedes the sight of stars “without any fuss ... going out.” Dr Wagner modifies a computer to write names of up to nine letters in a lamasery's special alphabet in one story by this longtime resident of Sri Lanka. In one novel by this author, the forbidden fruit of the garden of Eden is allegorized as Europa as astronauts are instructed to “attempt no landing there”. According to a “Law” proposed by this man, any sufficiently advanced technology is indistinguishable from magic. He adapted his story “The Sentinel” into a novel in which David Bowman becomes a Star Child after finding a monolith. For 10 points, name this British-born “Big Three” science-fiction author who wrote “The Nine Billion Names of God” and the novel *2001: A Space Odyssey*.  
ANSWER: Sir Arthur C(harles) **Clarke** [or Arthur Charles **Clarke**]  
*<Literature British Non-Shakespeare - Smith>*

18. Primitive projectors called “magic lanterns” were used for entertainment in these places by Thomas Kirkbride, who was a pioneer in their design. Massachusetts Secretary of State Edward Bangs helped pass reforms to these places recommended by his former fiancee. Julius Chambers published a series of exposes of one of these places for the New York *Tribune*. Devices called “Utica cribs” were named for one of these places and were primarily used in them. One of these places on Blackwell's Island had its abusive practices exposed by an undercover investigation by Nellie Bly. They're not prisons, but Dorothea Dix campaigned for the establishment and reform of these places. The use of techniques like electoshock therapy and lobotomy in these places became widespread in the early 20th century. For 10 points, name these places where sufferers from conditions like schizophrenia were kept.  
ANSWER: insane **asylum**s [accept **lunatic asylums**, **mental asylums**, **mental hospital**s, mental **institution**s, prompt on hospitals]  
*<History American (1865-1945) - Myers>*

19. The pedestal of a sculpture of this figure that sits on a triangular pillar mentions a contest for building an acroterion. In a balustrade relief usually named for this figure, this character adjusts a piece of footwear. The only known sculpture by Paionios depicts this character, who appears atop an orb held by Napoleon in a sculpture by Canova. The pose of a sculpture of this figure was mimicked by a later artist's *Unique Forms of Continuity in Space*.This character sits in another's hand in the Varvakeion replica of a Phidias sculpture that also featured a miniature version of this figure. At the top of the Daru staircase, a sculpture of this figure standing on a trihemiolia's prow stands in the Louvre. For 10 points, name this allegorical figure that often appears in sculptures of successful generals, often depicted with wings as in a sculpture of her from Samothrace.  
ANSWER: **Nike** [or **Victory**]  
*<Arts Sculpture - Smith>*

20. According to legend, the wielder of this object became a saint after his blindness was inadvertently healed by using it. Peter Bartholomew died after undergoing an ordeal by fire to verify the nature of this object, which he claimed Saint Andrew helped him find in Antioch. In Eastern Orthodox Divine Liturgy, an item symbolizing this object is used to remove the Lamb from the loaf of leavened bread. It's not a sword, but this was one of the “Imperial Regalia” in Vienna supposedly considered a unifying relic by Adolf Hitler. Tradition claims that the user of this object was named Longinus. According to the Gospel of John, the usage of this object results in a miraculous flowing of water and blood, creating the last of the Five Holy Wounds. For 10 points, name this weapon legendarily used by a centurion to pierce Jesus on the cross.  
ANSWER: **Holy Lance** [or **Spear of Destiny** or the **Holy Spear**; accept **Spear** or **Lance** of **Longinus** before “Longinus”; prompt on spear or lance; accept descriptive answers such as the **spear** used during the **crucifixion** until the giveaway sentence]  
*<RMP Christian/Bible Religion - Cheyne>*

21. In one essay, this critic lauded the “telescoping of images” in the line “A bracelet of bright hair about the bone.” That essay uses the term “dissociation of sensibility” to discuss the poetic school of Henry Vaughn and Abraham Cowley. Another essay by this author discusses a concept that involves “the pastness of the past” but also its “presence.” This author re-popularized “the 'School of Donne” in his essay “The Metaphysical Poets,” and he pioneered the concept of an “objective correlative” in his essay “Hamlet and His Problems.” In a footnote, this author wrote that he “quite arbitrarily” associated “The Man with Three Staves” with the Fisher King while explaining his poem's reference to Tarot cards such as the “Merchant” and the “Phoenician Sailor.” For 10 points, name this author of “Tradition and the Individual Talent” and the poem *The Waste Land*.  
ANSWER: T. S. **Eliot**  
*<Literature British Non-Shakespeare - French>*

**2019 National All-Star Academic Tournament**

**Round 16 – Bonuses**

1. In the essay “The Study of Poetry,” this thinker argued that the value of poetry was found in “high seriousness”. For 10 points each:  
[10] Name this author who argued that great cultures are defined by their beauty and intelligence, which this thinker referred to as “sweetness and light.” This author divided the society of England into barbarians, philistines, and populace in his most famous essay collection.  
ANSWER: Matthew **Arnold**  
[10] In his *Essays in Criticism*, Matthew Arnold describes the explulsion of this Dutch philosopher from the Jewish community in Amersterdam. This thinker was called a pantheist for his views of God laid out in his book titled *Ethics*.  
ANSWER: Baruch **Spinoza** [accept Benedito de **Espiniosa** or Benedict de **Spinoza**]  
[10] In his *Ethics*, Spinoza argued that there was only one of these entities with several facets, a position called monism. A type of dualism named for these entities states there are different mental and physical kinds of these entities  
ANSWER: **substances**  
*<RMP Philosophy/Thought - McLain>*

2. Answer the following about Ronald Fisher's contributions to evolutionary genetics. For 10 points each:  
[10] Fisher modeled change in gene frequencies and fitness with his average excess theorem and fundamental theorem, respectively. Both of those theorems can be derived from this equation, which has selection and transmission terms.  
ANSWER: **Price** equation  
[10] Fisher described many genes of small effect in his infinitesimal model, which clarified the relationship between evolution and this man's studies of pea genetics. This scientist developed the Law of Independent Assortment.  
ANSWER: Gregor Johann **Mendel**  
[10] Among other benefits, Fisher's geometric model can help describe the selective effects of this phenomenon, in which the phenotypic effect of one gene is dependent on others.  
ANSWER: **epistasis** [or **epistatic**; do NOT accept “epigenetic”]  
*<Science Biology - Kothari>*

3. The first novel to be published in the language of this people is framed a hunter telling stories of his exploits in the title *Forest of a Thousand Daemons*. For 10 points each:  
[10] Name this ethnic group. A writer from this ethnic group described a man who travels to Dead’s Town to retrieve his deceased tapster.  
ANSWER: **Yoruba** people [*Forest of a Thousand Daemons* is by D.O. Fagunwa.]  
[10] Amos Tutuola drew on Yoruba folklore for his novel titled for a “drinkard” of this substance. In *Things Fall Apart*, Unoka is considered lazy in part because he consumes too much of this substance.  
ANSWER: **palm wine** [prompt on wine or alcohol]  
[10] *Forest of a Thousand Daemons* was translated into English by this Yoruba playwright of *Death and the King's Horseman.*  
ANSWER: Wole **Soyinka**  
*<Literature World - French>*

4. Answer the following about ethnic assimilation in late antique China. For 10 points each:  
[10] After this clan established the Northern Wei Dynasty, their advisor, Cui Hao, encouraged them to adopt Chinese culture, leading them to convert to Buddhism and take a Chinese surname. After breaching the Great Wall to invade northern China themselves, this clan built a new section of the Great Wall to keep out the Rouran.  
ANSWER: **Tuoba** [accept **Tabgatch**, **Toba**, prompt on Xianbei, Hsien-pi, Mongols]  
[10] This modern country, which rebelled against Chinese domination under the Trung sisters, had its language banned in administration and its dress customs suppressed while it was under Chinese control. This modern country was invaded several times from the North by various Chinese dynasties.  
ANSWER: **Vietnam**  
[10] Several groups of non-Han people who quickly adapted to Chinese culture invaded China and established states during a period named for this many dynasties and ten kingdoms, which succeeded the Tang Dynasty and preceded the Han.  
ANSWER: **Five** [accept **wu**, **Five dynasties and ten kingdoms**]  
*<History World - Myers>*

5. In a chapter told in the second-person, the alcoholic Thomas Frank gets fired from the Indian Center in this city after crushing a bat to death with his bare hands. For 10 points each:  
[10] Name this city, where many characters converge at a powwow that falls victim to a botched robbery in Tommy Orange's *There There*. That novel's title was inspired by a Gertrude Stein quotation about this city that “There is no there there.”  
ANSWER: **Oakland**, California  
[10] A square in Oakland is named after Jack London, who wrote this novel about the sled dog Buck and his many owners, who include the outdoorsman John Thornton.  
ANSWER: *The* ***Call of the Wild***  
[10] This writer's novel *Telegraph Avenue* is also mainly set in Oakland and nearby Berkeley. In another novel, this writer imagined an alternate history in which Sitka, Alaska became a large, Yiddish-speaking metropolis.  
ANSWER: Michael **Chabon**  
*<Literature American - Kothari>*

6. The reporter Mortimer Thomson traveled incognito to cover the largest one of these events in US history, which occurred in Savannah in 1859 and was known as the “weeping time”. For 10 points each:  
[10] Identify these events, frequent occurrences in the cities of Norfolk and New Orleans. The Exchange and Provost building was the site of these events in Charleston.  
ANSWER: **slave auction**s  
[10] The aforementioned 1859 slave auction came about following this man's divorce from the actress Fanny Kemble. This man's grandfather of the same name introduced the Fugitive Slave Clause into the draft of the Constitution and served as South Carolina's first senator.  
ANSWER: Pierce M. **Butler**  
[10] The night prior to the Butler slave auction, two enslaved people named Dembo and Frances got a minister to perform this action to ensure they weren't sold to separate owners. Masters often encouraged this practice to reduce the likelihood of men running away and to produce more children.  
ANSWER: **marriage** [or **wedding**; or equivalents]  
*<History American (pre-1865) - Bentley>*

7. If two materials have different values of *k*, then this quantity must be discontinuous at their interface, because the heat flux is always continuous. For 10 points each:  
[10] Name this quantity. Heat flux is equal to minus *k* times this quantity, according to Fourier's law.  
ANSWER: **temperature gradient** [or **gradient of temperature**; accept **spatial derivative of temperature** or ***x* derivative of temperature**; prompt on gradient, derivative, or derivative of temperature; do not prompt on “temperature derivative” or just “temperature”]  
[10] The *k* is Fourier's law represents this quantity. The thermal diffusivity is the ratio of this quantity and volumetric specific heat.  
ANSWER: thermal **conductivity**  
[10] The thermal conductivity appears in the denominator of the Nusselt number, which quantifies the relative rates between conduction and this other method of heat transfer, in which heat is transferred through the movement of a fluid.  
ANSWER: **convection** [or **convective** heat transfer]  
*<Science Physics - French>*

8. In 2017, a car parked in the parking spot reserved for the current holder of this post was spotted with a bumper sticker reading “Bollocks to Brexit” on it. For 10 points each:  
[10] Identify this non-partisan position in British politics currently held by John Bercow.  
ANSWER: **Speaker** of the House of Commons  
[10] Bercow blocked a plan for this politician to speak before the House of Commons. This head of state has also objected to wind farms off the coast of one of his branded golf courses in Scotland.  
ANSWER: Donald **Trump**  
[10] After a sexual harassment scandal in the House of Commons, Bercow was asked to resign in October 2018 by this Conservative House of Commons leader, who dropped out of the running to replace David Cameron after saying that being a mother gave her more of “a real stake” in Britain's future than Theresa May.  
ANSWER: Andrea **Leadsom**  
*<Current Events Non-US - Bentley>*

9. After being born when his mother Coatlicue **(co-aht-lee-cue)** was impregnated by a ball of feathers, this god killed his sister and his 400 brothers for conspiring to kill their mother. For 10 points each:  
[10] Name this god. In the Aztec mythos, this deity's killing of his sister, Coyolxauhqui, **(coh-yohl-shaw-kwee)** and 400 brothers is analogized to the sun chasing the moon and stars every night.  
ANSWER: **Huitzilopochtli** **(wee-tsee-loh-pohch-tlee)**  
[10] In another violent act, Huitzilopochtli **(wee-tsee-loh-pohch-tlee)** tore out his nephew Copil's heart and threw it into this lake. After the Aztecs left Malinalco, Huitzilopochtli told them to find this lake, where an eagle would be perched upon a cactus, and build their new city there.  
ANSWER: Lake **Texcoco** [That city was Tenochtitlan.]  
[10] Huitzilopochtli's bloodthirstiness was represented in this symbol of his. The Aztecs analogized this animal's feeding to the practice of human sacrifice, and the name “Huitzilopochtli” translates to this bird “of the South” or “on the left.”  
ANSWER: **Hummingbird**  
*<RMP Non-Greek/Roman Myth - Husar>*

10. This relative of the tanpura has moveable frets called *thaat*. For 10 points each:  
[10] Name this instrument with between 18 and 21 strings, most of which are not played but run under the frets and vibrate due to sympathetic resonance.  
ANSWER: **sitar**  
[10] This sitar player popularized the instrument with his score to the *Apu Trilogy*, as well as through his association with George Harrison of Beatles fame.  
ANSWER: Ravi **Shankar**  
[10] This Western violinist collaborated with Ravi Shankar on *West Meets East*. That album's B-side is a violin sonata by George Enescu, who mentored this violinist.  
ANSWER: Yehudi **Menuhin**  
*<Arts Music - Smith>*

11. In a profile of Jeremy Bentham, this writer quipped “His works have been translated into French.They ought to be translated into English.” For 10 points each:  
[10] Name this essayist who profiled twenty-five influential figures of the early 19th century in *The Spirit of the Age*. Essays “On Effeminacy of Character” and “On the Pleasure of Painting” appear in his *Table-Talk*.  
ANSWER: William **Hazlitt**  
[10] Hazlitt was close friends with this other author, who wrote of Bo-bo's invention of the art of broiling in one of the essays he wrote under the pseudonym “Elia”. This author collaborated with his matricidal sister Mary on *Tales from Shakespeare*.  
ANSWER: Charles **Lamb**  
[10] This is the first play adapted in the Lambs' *Tales from Shakespeare*. When reviewing Coleridge's lecture on this play, Hazlitt disputed the former's assessment of Caliban as a “Jacobin” usurper of Prospero.  
ANSWER: *The* ***Tempest***  
*<Literature British Non-Shakespeare - Smith>*

12. One proof that this problem is NP-hard associates to a nondeterministic Turing machine *M* on input *x* a tableau of snapshots of the computation of *M*-of-*x*, then maps that tableau to a CNF formula. For 10 points each:  
[10] Name this problem, which asks whether a given formula evaluates to one on at least one assignment. This problem is NP-complete by the Cook-Levin theorem.  
ANSWER: Boolean **satisfiability** problem [or **SAT**; or unrestricted **satisfiability**; or 3-**SAT**]  
[10] Since SAT is NP-complete, a famous open problem about whether this set is equal to NP is equivalent to the question of whether SAT is in this set.  
ANSWER: **P** [or **PTIME**]  
[10] This man is the first namesake of a theorem stating that, if SAT is in the class P/poly, the polynomial hierarchy must collapse to its second level. Reductions named for this man transform instances of one problem to instances of another with the same answer, and are not to be confused with Cook reductions.  
ANSWER: Richard **Karp** [or **Karp**-Lipton theorem; or **Karp** reduction]  
*<Science Computer Science - Morrison>*

13. Jonathan Schmitz offered this legal defense after killing his friend in 1995 because he was humiliated by revelations on *The Jenny Jones Show*. For 10 points each:  
[10] Name this controversial legal defense usually used to rationalize murders committed against people who supposedly made sexual advances against them. A judge refused to allow this defense in the murder trial of Matthew Shepard.  
ANSWER: **gay panic** defense [accept **trans panic**]  
[10] After Shepard's death, Congress passed a 2009 law imposing harsher penalties on this sort of crime, which is directed against someone purely for reasons such as a victim's race or sexual orientation.  
ANSWER: **hate** crime  
[10] The 2009 hate crime law was co-named for Shepard and James Byrd Jr., who was also murdered in 1998. White supremacists in this state killed Byrd by dragging him behind a pickup truck on an asphalt road.  
ANSWER: **Texas**  
*<History American (1945-present) - Cheyne>*

14. This artist wrote the note “And all being is flaming agony” on the back of a painting that was later damaged in a fire. For 10 points each:  
[10] Name this artist. A blue deer at the center is about to be struck by a falling burning tree in this painter's *Fate of the Animals*.  
ANSWER: Franz **Marc**  
[10] Franz Marc's *Fate of the Animals* is a work from this early expressionist movement, which also included August Macke and Wassily Kandinsky.  
ANSWER: Der **Blaue Reiter** [or The **Blue Rider**]  
[10] After the right third of *Fate of the Animals* was burnt, Paul Klee restored it, although the restored section is distinguishable from the rest of the painting since it has this visible property. A general description is fine.  
ANSWER: the **colors** are **muted** [accept anything that indicates that the **colors** are **less** **bright** or **vibrant** or that the restored portion is **darker** or more **brown**]  
*<Arts Painting - French>*

15. This novel's contentious last section is usually published under either the title “Into the Millennium” or “The Criminals” and involves the protagonist's incest with his sister Agathe. For 10 points each:  
[10] Name this novel. Its protagonist is an indifferent mathematician who, having given up civil engineering, takes a year out from his normal life to try and find 'an appropriate application for his abilities', eventually helping to organise a 70-year jubilee.  
ANSWER: *The* ***Man without Qualities*** [or *Der* ***Mann ohne Eigenschaften***]  
[10] The author of *The Man without Qualities*, Robert Musil, wrote a memorial speech for this other author, who wrote that “beauty is nothing but the beginning of terror” in a work written while staying with Princess Marie von Thurn und Taxis.  
ANSWER: Rainer Maria **Rilke**  
[10] Musil was an author from this modern-day country, which he refers to as “Kakania” in *The Man Without Qualities*. Another author from this modern-day country, Joseph Roth, wrote the historical novel *Radetzky March*.  
ANSWER: **Austria**  
*<Literature European - Krol>*

16. This aria was based on a Sebastian Iradier piece that the composer believed to be a folk song. For 10 points each:  
[10] Name this aria which opens with a spoken introduction answering the query “When will I love you?” It goes on to compare love to a “gypsy child” which has “never known the law.”  
ANSWER: “**Habanera**” [or “*L'****amour est un oiseau rebelle***”; or translations such as “**Love is a rebellious bird**”]  
[10] That “Habanera” is sung by the title woman of this opera, which also includes the “Toreador Song.”  
ANSWER: ***Carmen***  
[10] Carmen is seen as a precursor to such characters as the title woman of this opera, who sings “Adieu, notre petite table.” This French opera was based on a novel by the Abbé Prevost.  
ANSWER: ***Manon*** [by Jules Massenet; do NOT accept ***Manon Lescaut***]  
*<Arts Opera - Smith>*

17. Answer the following about medieval European noblemen named Fulk. For 10 points each,  
[10] Five different Fulks, including Fulk the Black, a robber baron who had his wife burned at the stake in her wedding dress after she was accused of adultery, served as counts of this French region, which names an English dynasty that included Henry II and Richard I.  
ANSWER: County of **Anjou** [accept **Angevin** Dynasty]  
[10] The first Fulk, named for this color of his hair, expelled the Normans from Anjou and helped the rise to power of Hugh Capet. A viking explorer named Erik and the German emperor Frederick I were both named for having hair of this color  
ANSWER: **Red** [accept Erik the **Red** or Frederick **Barbarossa**]  
[10] Fulk V, who later became King of Jerusalem, died in a hunting accident in this city, after which he was succeeded by his daughter, Melisande. This city was the last Crusader outpost in the mainland Levant to come under Muslim rule, doing so in 1291.  
ANSWER: **Acre** [accept **Akko**, **Akke**]  
*<History European to 1400 - Myers>*

18. The practice in this kingdom of driving nails into *nkisi nkonde* figures to commemorate important community events may have inspired the Haitian use of voodoo dolls. For 10 points each:  
[10] Name this kingdom where indigenous practices were syncretized into Catholicism after its king, Mvemba a Nzinga, was converted by Portuguese missionaries and changed his name to Afonso.  
ANSWER: Kingdom of **Kongo**  
[10] Existing Kongolese concepts of a king associated with the sky assisted the adoption of Christianity, as did the fact that this religious diagram, segments of which symbolized phases of the day, colors, and stages of life, was already shaped like a cross.  
ANSWER: ***dikenga*** [accept ***yowa***, prompt on Kongo cosmogram]  
[10] The worship of this saint from Padua was especially prominent in Kongolese Catholicism, culminating in an episode in which Dona Beatriz Kimpa Vita rebelled against the king while claiming to be a reincarnation of this patron saint of lost objects.  
ANSWER: St. **Anthony** of Padua [accept **Toni**]  
*<RMP Non-Christian/Bible Religion - Myers>*

19. Answer some questions about Lewis acid-base theory, for 10 points each:  
[10] Combining a Lewis acid and base that cannot adduct classically due to steric hindrance forms a Lewis pair described by this adjective.  
ANSWER: **frustrated** (Lewis Pair)  
[10] Lewis acids and bases form this type of bond when generating an adduct. In general, this type of covalent bond results in one atom donating both electrons to the other participating atom.  
ANSWER: **dative** bond [or **coordinate** (covalent) bond; accept **dipolar** bond]  
[10] Ralph Person used the equilibrium constants of Lewis acids and bases to create his hard-soft acid base theory. That theory is particularly important in describing complexes made from these elements, which have a partially-filled d orbital.  
ANSWER: **transition** metal [or **transition** element, prompt on metals]  
*<Science Chemistry - Etzkorn>*

20. In *Delusions of Gender*, Cordelia Fine denounced this researcher's empathizing-sympathizing theory as “neurosexist.” For 10 points each:  
[10] Name this researcher, who extended his empathizing-sympathizing theory to formulate the “extreme male brain” theory of a certain mental condition.  
ANSWER: Simon **Baron-Cohen**  
[10] Baron-Cohen is a researcher on this condition, one variant of which is named for the German physician Hans Asperger.  
ANSWER: **autism** spectrum disorder [prompt on being on the spectrum]  
[10] Baron-Cohen theorized that autistic people have this inability to attribute mental states to others. He contrasts this state with the “theory of mind” exhibited by neurotypicals and attributes it to a dysfunction in mirror neurons that was later proven not to exist.  
ANSWER: **mind-blind**ness [or word forms]  
*<Social Science Psychology - Smith>*

21. In this procedure, the creation and annihilation operators are introduced to transform different Fock states. For 10 points each:  
[10] Name this procedure, which is also called occupation number representation. Unlike a similar procedure, this procedure applies to fields.  
ANSWER: **second quantization** [prompt on quantization]  
[10] First quantization, on the other hand, defines the properties of a system as operators acting on this complex-valued function. The squared modulus of this function is the probability of finding a particle at a given point.  
ANSWER: **wave function**  
[10] Dirac performed first quantization by replacing the Poisson bracket with this operation. For two operators *A* and *B*, this operation returns *AB* minus *BA*.  
ANSWER: **commutator**  
*<Science Physics - French>*