**2021 National All-Star Academic Tournament**

**Round 16 – Tossups**

1. The narrator realizes what he believed to be the sound of ghosts playing this activity was actually a rat running around the ceiling in Rudyard Kipling's "My Own True Ghost Story." The arrival of strangers prevents Marianne's mother from hanging her like her younger brother in a novel titled for this activity where Johanna plots to shoot a gym teacher. In *The Cherry Orchard*, Gaev's "hands tremble" from imagining to play this activity, which he frequently references. In a novel titled for this activity, an architect convinces an army officer to destroy St. Anthony's Abbey to spite Nazi "buffaloes." For 10 points, name this activity played by Robert Faehmel at the Prince Heinrich Hotel in a Heinrich Böll novel titled for it at *Half-Past Nine.*  
ANSWER: playing **billiards** [or playing **pool**; or ***Billiards*** *at Half Past-Nine*; prompt on playing games or less specific answers]  
<Literature European - Ganon Evans>

2. On Radonitsa **(rah-dohn-it-sah)**, it is traditional to place these objects on the graves of the departed. These objects are "tapped" against each other in a traditional English holiday game. According to legend, when Mary Magdalene tried to convert the emperor, one of these objects turned red. They are not candles, but in Orthodox churches these objects are blessed and then given to congregants at the end of a Great Vigil. During an annual race at the White House, children roll these objects down the lawn using long spoons. Highly decorated examples of these objects were made for the Romanovs **(ROH-mah-nahvs)** by the House of Faberge **(fah-bair-jAY)**. For 10 points, name these objects often dyed and hunted by children during Easter celebrations.  
ANSWER: Easter **egg**s [or Paschal **egg**s; or **egg**s of Easter; accept **egg**-tapping]  
<RMP Christian/Bible Religion - Clark Smith>

3. Nitrogen can replace this element in the "pincers" of pincer ligands. Percent buried volume can describe the sterics of ligands containing tertiary atoms of this element, which Tolman characterized with his namesake cone angle. In one reaction, this element attacks a carbonyl's **(carbon-EEL's)** oxygen at the same time that an adjacent carbanion attacks the other half. This element is bound to sulfur in the central four-membered ring of Lawesson's reagent. This element has a positive charge in the ylide **(ILL-id)** reagent of the Wittig reaction, which is prepared from its triphenyl derivative. This non-metallic pnictogen **(NICK-toe-gen)** forms a pentachloride with ten valence electrons because it is in the nitrogen group. For 10 points, name this element with atomic number 15.  
ANSWER: **phosphorus** [or **P**; prompt on triphenylphosphine or diphosphines]  
<Science Chemistry - Kevin Wang>

4. French arm smuggling to this war began when Jean-Christophe Mitterand introduced Pierre Falcone to Arcadi Gaydamak. Mislabeled "Warning" and "Drop" buttons in aircraft on one side of this war led to paratroopers being dropped into a river during Operation Reindeer. The Lusaka Protocol decreased tensions during this war. South African troops defended a dam in this war in Operation Savannah and aided Cassinga, but were stopped at Cuito Cuanavale **(KWEE-to kwan-uh-VAL-ay)** by Cuban volunteers. The assassination of Jonas Savimbi ended this war, as the Ovimbundu and Bakongo peoples UNITA party lost to the Soviet-backed MPLA. For 10 points, name this Cold War buffer conflict resulting from decolonization of Portugal's African colonies.  
ANSWER: **Angola**n **Civil War** [prompt on the South African Border War, the Namibian War for Independence, or the Angola Bush War]  
<History World - Ganon Evans>

5. After extensive torture, a son of this man told a convincing lie that caused the Trojans to allow the Trojan Horse into their city. This man's wife was one of the Pleiades **(play-ah-dees)** but she was rarely seen in the night sky due to the shame of marrying a mortal. He's not Laertes **(lay-air-tees)** but some sources claim that this man's seduction of Anticlea **(an-tee-clay-ah)** led to him being the father of Odysseus **(oh-dis-see-us)**. That relationship with Anticlea was as revenge for Autolycus's **(aw-toh-lie-cus)** theft of this man's cattle, which he discovered after branding them. This founder of the Isthmian **(iss-th-mee-ahn)** games instructed his wife Merope **(mehr-oh-peh)** not to place a coin under his tongue as one of his attempts to cheat death. For 10 points, name this king of Corinth who is forced to roll a boulder up a hill forever.  
ANSWER: **Sisyphus**  
<RMP Greek/Roman Myth - Matt Weiner>

6. One organization of this name lost a battle which began with the construction of earthworks by the Hakkapeliitta **(HAH-kep-el-EE-tah)** and included the wounding of its second-in-command, Johann von Aldringen. A group of this name had its weapons seized and turned against them at another battle where its troops were caught in crossfire from Lennart Tostensson's cannon. Soldiers fighting for a group of this name brutalized the city of Magdeburg and were commanded by the Count of Tilly. Another group of this name opposed King Henry III and took power during the Day of the Barricades. That group of this name opposed the Huguenots and sought to revive its namesake religion in France. For 10 points, give this name of a "League" led by the Guise family which supported Pope Sixtus V's influence.  
ANSWER: **Catholic League** [or **Katholische Liga** or **Ligue catholique**; accept **Holy League**; accept **Catholic** League after "League" is read]   
<History European 1400-1914 - Matt Weiner>

7. In June 2021, the Philadelphia Museum of Art was loaned a Thomas Cole painting of this city that the Newark Museum had deaccessioned. A man modeled on Michelangelo's *Isaiah* sits in front of a statue of Justice in a painting set in this city. A woman in a white dress throws out her hands to stop soldiers fighting in a painting set in this city, intended as a sequel to a Nicholas Poussin painting. A man from this city sits on a klismos **(KLIZ-moss)** while soldiers carry a dead man in the background in one painting. One artist saw the Temple of Paestum on a French Academy sponsored residency in this city. In one painting, three distraught women watch three brothers from this city take swords. For 10 points, Jacques-Louis David depicted Brutus is a painting set in what city?  
ANSWER: **Rome**, Italy [accept **Roma**, Italia or the Prix de **Rome**] (The other paintings mentioned are Thomas Cole's *The Arch of Nero*, David's *The Lictors Bring to Brutus the Body of His Son*, and David's *Intervention of the Sabine Women*)  
<Arts Painting - Hari Parameswaran>

**Note to moderators: Please read the answerline to this tossup carefully**

8. A team led by Yingming Zhao found that modification of histones by this non-acetyl molecule promotes gene expression. Phenformin **(fin-four-men)** may cause build up of this molecule in the bloodstream, so metformin **(met-FOUR-men)** is used instead. This molecule is transported by MCT1, which is heavily expressed in tumors. Conversion of this molecule to pyruvate is coupled to the conversion of NAD+ to NADH by a namesake dehydrogenase. The tumor microenvironment's acidity is mostly due to this molecule's production. This molecule is transported from the muscles to the liver to be converted into glucose in the Cori cycle. Muscles produce this acidic molecule in anaerobic respiration. For 10 points, name this acid responsible for muscle soreness after exercise.  
ANSWER: **lactate** [or **lactic acid**]  
<Science Biology - Geoffrey Chen>

9. *Composer and type of work required.* In the third movement of one of these works by this composer, the performer must use the right hand to simultaneously play a trill on G and a melody beginning "G, long G, short E, D, low G, C." Hans von Bülow's critical edition of these works by this composer ranks them by difficulty and calls them "The New Testament." One of these works by this composer opens with a deceptive cadence with the word "Lebewohl" written above it. The performer is instructed to hold the sustain pedal for the entirety of the first movement of another of these pieces by this composer that is marked "Quasi una fantasia." For 10 points, name this set of 32 pieces, including "Waldstein" and "Moonlight," by the composer of "Ode to Joy."  
ANSWER: **piano sonata**s by Ludwig van **Beethoven** [both underlined parts required; prompt on partial answers]  
<Arts Music - Shan Kothari>

10. This character claims that she will not marry "til God make men of some other metal than earth," as it would "grieve a woman to be overmastered with a piece of valiant dust." This character claims, "I had rather hear my dog bark at a crow than a man swear he loves me." A man greets this character as "my dear Lady Disdain" and is later outraged when she describes him as "the king's jester, a very dull fool" at a masked ball. This character begs her lover to kill a man who humiliates her cousin for alleged infidelity. After the success of Don Pedro and Leonato's plot to match this woman with a man, she marries him in a double wedding with Claudio and her cousin Hero. For 10 points, name this woman who has a "merry war of wits" with Benedick in *Much Ado About Nothing.*  
ANSWER: **Beatrice**  
<Literature British (Shakespeare) - Julia Tong>

11. This man invented the character of Fray Agapida to present the "monkish zealot" perspective in one of his narrative histories. In a story by this author, a man who always carries two Bibles finds an apron holding a heart and liver tied to a tree. In that story by this man, an ominous lumberjack, who is harvesting trees with the names of famous families written on them, makes a deal to share the treasure of Captain Kidd. This author of the *Chronicle of the Conquest of Granada* and "The Devil and Tom Walker" described "The Spectre Bridegroom" under the pen name of Geoffrey Crayon. For 10 points, name this author who depicted Brom Bones's rivalry for Katrina Van Tassel with Ichabod Crane in "The Legend of Sleepy Hollow."  
ANSWER: Washington **Irving**  
<Literature American - Matt Weiner>

12. A member of this family pioneered the first state unemployment compensation law. With Mike Monroney, a senator from this family spearheaded the Legislative Reorganization Act. A senator from this family had his office ransacked while leading the first Public Lands investigations into Teapot Dome. This family names a 1915 Seaman's Act and a newspaper which was edited by Belle Case. A governor from this family advocated for a "laboratory for democracy" by integrating professors into the bill-writing and regulation process via his state's namesake idea. This family's patriarch ran for President with Burton Wheeler and the backing of the Farmer-Labor Party. For 10 points, name this family of Wisconsin politicians whose patriarch was the 1924 Progressive Party candidate "Fighting Bob."  
ANSWER: **La Follette** [or Robert M. **La Follette**; or Robert M. **La Follette**; or Philip **La Follette**; or Fighting Bob **La Follette**; or Young Bob **La Follette**]  
<History American (1865-1945) - Ganon Evans>

13. This sea was home to two rival micronations called the Kingdom of Humanity and the Republic of Morac-Songhrati-Meads. The DK1 rigs operate around this sea's Rifleman Bank. A mythical golden cudgel is said to be have been found in the world's deepest blue hole in this sea. About two million square kilometers of this sea is governed from a town on Woody Island called Sansha. The Macclesfield Bank and Scarborough Shoal are demarcated by this sea's "nine-dashed line," near which one country is building a "Great Wall of Sand" with fortified manmade islands. For 10 points, the Paracel **(PAR-uh-sel)** and Spratley islands are some of the many disputed parts of which Pacific sea that borders Vietnam, the Philippines, and its namesake country?  
ANSWER: **South China** Sea [or **Nán** (Zhōngguó) Hǎi; or Bien **Nam Trung Quoc**; or Bien **Dong**, or Dagat **Timog Tsina**; accept **Laut China Selatan**; prompt on the Champa Sea, Dagat Luzon]  
<Geography - Joseph Krol>

14. This anthropologist demanded but never received a co-authorship for a Lilias Armstrong phonetics book based on his voice recordings. John Arthur had this anthropologist expelled from the local Church of Scotland for alleged dishonesty while talking about "irau" among his ethnographic subjects. This anthropologist abandoned his Christian name, which was "Johnstone," upon publishing a book that defended traditional circumcision rites for men and women. He holds a spear while dressed in skin on the cover of that book, which opens with an introduction by his teacher at the London School of Economics, Bronislaw Malinowski. For 10 points, an ethnography of the Kikuyu titled for *Facing* a certain mountain was written by what first president of Kenya?  
ANSWER: Jomo **Kenyatta** [or **Kamau** wa Ngengi; or Johnstone **Kamau** before mention of "Johnstone"]  
<Social Science Anthropology - Clark Smith>

15. The concentrations of rare earth elements are often normalized with respect to a "post-Archean" collection of this rock. While not clay, predicting whether a fault will seal can be done by calculating this rock's namesake smear ratio or gouge ratio. Anoxic extinction events such as the Hangenberg event often correspond with a "black" carbonaceous form of this rock. This rock is fissile, unlike the related mudstone. Fossils like *Anomalocaris* **(uh-NAH-moh-loh-KAH-ris)** are described in Stephen Jay Gould's *Wonderful Life*, which describes discoveries in the Burgess formation of this rock. This rock undergoes contact metamorphism to form slate. For 10 points, fracking is used to extract kerogens and other liquid hydrocarbons from the "oil" form of what rock?  
ANSWER: **shale** [or black **shale**; accept Burgess **shale**, oil **shale**, or post-Archean average **shale**]  
<Science Earth Science - Geoffrey Chen>

16. The *Heart Sutra* declares that the five skandhas have this property in a passage that declares "[this property] is form, form is [this property]." In the Mādhyamaka tradition, since all phenomena are dependently arisen, they possess this property, which is the *paramartha-satya*, or the "ultimate truth." The world is formed by its "absolute" variety according to the Kyoto School. Nāgārjuna argued that all things possess this property because they lack *svabhāva*. In Buddhism, this property is referred to as *śūnyatā*. This property is the second title concept in a book which uses a waiter who moves a little too quickly and eagerly as an illustration of "bad faith." For 10 points, identify this property which a Jean-Paul Sartre book contrasts with "being."  
ANSWER: **nothingness** [or **voidness**; or **emptiness**; accept **not-being** but do not accept or prompt on just “being”; accept ***śūnyatā*** before mentioned]  
<RMP Philosophy/Thought - Geoffrey Chen>

17. An essay by this author discusses their idea that "death was not the natural end of life but one phase of an infinite cycle." This author included the essays "Dostoevski: The Devil and the Ideologue" and "Considering Solzhenitsyn: Dust After Mud" in their collection *On Poets and Others.* This author describes "a journey in the galleries of sound" in a poem whose halfway point is the line "Madrid, 1937." A hybrid work by this author imagines visiting a shrine at the temple city of Galta. This author wrote a biography of the nun Sor Juana in *The Traps of Faith*. For 10 points, name this Mexican author who included the essays "The Conquest and Colonialism" and "The Day of the Dead" in the collection *The Labyrinth of Solitude.*  
ANSWER: Octavio **Paz** (Lozano)  
<Literature World / Classical / Misc - Caroline Mao>

18. A producer from this country founded the production company Decla, which was later absorbed by UFA. In response to the question "how long will I live?," a character in a film from this country is told "until dawn!" In a film from this country, a young girl bounces a ball off a poster as the main character's shadow enters the frame. A film from this country uses set designs with jagged lines and curved forms to depict places like an asylum where sleepwalking experiments occur. A man rubs chalk on his hand, then slaps the overcoat of a murderer, played by Peter Lorre, to mark him with the title letter in a film from this country. For 10 points, name this country where *The Cabinet of Dr. Caligari* and *M* were respectively directed by Robert Wiene and Fritz Lang.  
ANSWER: Federal Republic of **Germany** [or Bundesrepublik **Deutschland**; or the **Weimar** Republic] (the opening sentence refers to Erich Pommer)  
<Arts Film - Tim Morrison>

19. This man had to be restrained from attacking a rival who wore a broadcloth suit in defiance of this man's resolution mandating legislators wear homespun cloth. This man led an organization that employed Robert Stockton, who forced a Gola king nicknamed "Peter" to cede land to the U.S at gunpoint. The presence of James Birney's Liberty Party cost this man an election where he chose Theodore Freylinghausen **(FREE-ling-how-zen)** as his running mate. This president of the American Colonization Society advocated the construction of the Maysville Road as part of his American System. John Quincy Adams made this man secretary of state in exchange for his support in the "Corrupt Bargain." For 10 points, identify this Kentucky Whig nicknamed the "Great Compromiser."  
ANSWER: Henry **Clay** Sr.  
<History American (pre-1865) - Jakob Boeye>

20. The mass-energy of states that can undergo this process contains an imaginary part equal to i times its rate. Like resonances, these relativistic processes are parametrized by a quantity with units of energy equal to the full width at half maximum of the Breit-Wigner **(BRAYT VIG-nurr)** distribution. The tau-theta puzzle concerned a difference in the products of two modes of this process. By violating baryon number conservation, the proton may hypothetically undergo a form of this process despite being the lightest baryon. Observing CP-violation in one of these processes in kaons **(KAY-onz)** earned Cronin and Fitch the 1964 Nobel Prize in Physics. Neutral pions typically produce a pair of gamma rays in this process. For 10 points, name this process undergone by unstable particles.  
ANSWER: particle **decay**s [accept **decay** width, **decay** mode, or answers which refer to the **decay** of a specific particle, such as kaon **decay** or proton **decay**; prompt on quantum transitions; do not accept or prompt on "radioactivity", "radioactive decay", "nuclear decay", "alpha decay", "beta decay", or "gamma decay"]  
<Science Physics - Geoffrey Chen>

21. One creature from the legends of these people is a round bear that explodes when exposed to fire, called the Gumberoo. A book by William T. Cox catalogued the known creatures from the stories told by these people. These people's legends describe a creature with an enormous upper lip and no knees known as the Hugag. The most famous legends from these people were popularized by advertisements created by William B. Laughead **(logged)**. In one story, a group of people with this profession tied ham to their feet to go skating across a giant stovetop. Monsters described by people of this profession are known as "fearsome critters." Fakelore characters based on the legends of this profession include Babe the Blue Ox. For 10 points, name this profession held by Paul Bunyan.  
ANSWER: **lumberjack**s [or **woodsmen**; or **loggers**; prompt on "Americans" or "Canadians" by asking "what profession of Americans/Canadians?"]  
<RMP Non-Greek/Roman Myth - Bradley McLain>

**2021 National All-Star Academic Tournament**

**Round 16 – Bonuses**

1. Collisions between particles in a plasma are governed by and named after this law. For 10 points each:  
[10] Name this law that describes an inverse-square relation for the force between charged particles.  
ANSWER: **Coulomb**'s law [or **Coulomb**’s inverse-square law]  
[10] The proportionality constant in Coulomb's law is equal to 1 over the quantity vacuum permittivity times this constant.  
ANSWER: **4 pi** [or other equivalent formulations]  
[10] When integrating to find the cumulative effect of Coulomb **(coo-LAWM)** collisions, the upper bound of this variable is roughly set to the Debye **(DEH-by)** length. This quantity represents the smallest perpendicular distance between the undeflected trajectories of two particles.  
ANSWER: **impact parameter**  
<Science Physics - Steven Liu>

2. Answer the following about Parisian train stations and Impressionist art. For 10 points each:  
[10] This Paris museum, home to the largest impressionist and neo-impressionist gallery in the world, occupies a former train station. Gae Aulenti designed this museum's white marble main hall.   
ANSWER: Musée d'**Orsay** [accept Gare d'**Orsay**]  
[10] A mother stares towards the viewer while her daughter clutches a gate and stares into this train station in Manet's painting *The Railway*. Émile Zola's story *The Beast Within* was inspired by touring a gallery of Claude Monet paintings of this train station.  
ANSWER: Gare **Saint-Lazare** [or **St. Lazarus** Station; accept Paris-**Saint-Lazare**]  
[10] A large pillar of smoke from Saint-Lazare appears in the background of this painter's *The Bridge of Europe*. He depicted the title men hunched over with a bottle beside them in his *The Floor Scrapers*.  
ANSWER: Gustave **Caillebotte** **(kye-BUTT)**  
<Arts Painting - Ganon Evans>

3. Holy Roman Emperor Louis IV helped Michael of Cesena escape imprisonment in this city after he had been summoned to dispute the poverty of Christ. For 10 points each:  
[10] Name this city, which was bought from Joanna I of Naples for 80,000 florins. The scientists Johannes de Muris and Guy de Chauliac **(SHOOY-loch)** worked in the court of one of this city's rulers during a period allegedly named by Petrarch.   
ANSWER: **Avignon**  
[10] Guy de Chauliac was the court physician to a pope with this name during his reign in Avignon. A pope of this name took refuge in the Castel Sant'Angelo during Charles V's Sack of Rome.   
ANSWER: **Clement** [accept **Clement** VI or **Clement** VII]  
[10] Johannes de Muris posited that this event occurred due to the conjunction of Saturn, Mars, and Jupiter in Aquarius. Clement VI passed two bulls that condemned violence against Jews during this European pandemic.  
ANSWER: the **black death** [accept ***Y****ersinia* ***pestis*** epidemic, **black plague**, prompt on bubonic plague]  
<History European to 1400 - Hari Parameswaran>

4. At the end of this short story, Ted is turned into a "great soft jelly thing" by a being whose name derives from Rene Descartes's statement "I think, therefore I AM." For 10 points each:  
[10] Name this short story in which the last five humans on Earth search through a series of ice caves for food after eating a frozen elephant.  
ANSWER: ***I Have No Mouth, and I Must Scream*** (by Harlan Ellison)  
[10] The godlike being AM is a sentient one of these devices synthesized from the Adaptive Manipulator and Aggressive Menace. One of these devices named HAL 9000 terrorizes the crew of the Discovery One in Arthur Clarke's *2001: A Space Odyssey*.  
ANSWER: a **computer** [accept master**computer**; accept **AI** or **artificial intelligence**; prompt on a thinking machine or electronic brain]  
[10] In Ellison's story, the scientist Benny is turned into a sex-driven one of these animals. In another short story, one of these animals named Red Peter chooses the Music Hall over the garden after learning to mimic human behavior.  
ANSWER: **ape** [accept specific types of **ape** such as a **gorilla**, **orangutan**, **chimpanzee**, or a **gibbon**; do not accept or prompt on monkeys] (the other short story is Franz Kafka's *A Report to an Academy*)  
<Literature American - Ganon Evans>

5. Answer the following about famous Peppers in jazz music, for 10 points each.  
[10] This early jazz pianist from New Orleans led a band called the Red Hot Peppers. The last track on Charles Mingus's album *Mingus Ah Um* is titled for this composer of the "King Porter Stomp."  
ANSWER: **Jelly Roll** **Morton** [accept either underlined portion; or Ferdinand Joseph **LaMothe**]  
[10] Sonny Stitt and Paul Gonsalves, who both played this instrument, collaborated on the 1964 album *Salt and Pepper*. Other players of this instrument include Charlie Parker and John Coltrane.  
ANSWER: **sax**ophone [accept specific forms, such as alto **sax**ophone or tenor **sax**ophone]  
[10] Saxophonist Art Pepper frequently performed music in this subgenre of jazz popular with West Coast musicians like Stan Kenton and Gerry Mulligan. An album in this style of jazz includes tracks like "Venus de Milo" and "Boplicity."  
ANSWER: **cool** jazz [accept *Birth of the* ***Cool***]  
<Arts Jazz - Tim Morrison>

6. This man recommended some "books to hang out with" in the section "Painted Cakes Do Not Satisfy Hunger" from his book *Be Here Now*. For 10 points each:  
[10] Name this American spiritual teacher who went to India to study under Neem Karoli Baba **(neem kah-roh-lee bah-bah)** after being fired from Harvard for his work with Timothy Leary on psychedelics.  
ANSWER: **Ram Dass** [or Richard **Alpert**]  
[10] Leary, Alpert, and Ralph Metzner collaborated on *The Psychedelic Experience*, a book based on this work from the Nyingma **(nee-ng-mah)** tradition that explains one's passage through states called *bardos* after death.  
ANSWER: *The* ***Tibetan Book of the Dead*** [or ***Bardo Thodol***; prompt on *The Book of the Dead*]  
[10] While studying with Neem Karoli Baba, Ram Dass **(rahm dahs)** became a devotee of this Hindu god. In *Be Here Now*, the aphoristic section "From Bindu to Ojas" is bookended by illustrations of this monkey god tearing his heart open to reveal Rama **(rah-ma)** and Sita **(see-ta)** inside.  
ANSWER: **Hanuman**  
<RMP Non-Christian/Bible Religion - Shan Kothari>

7. Robert Marin created an 18-item scale used to assess this state. For 10 points each:  
[10] Identify this mental state. This state is a result of an inundation of information from mass media in a 1946 theory proposed by Paul Lazarsfeld **(LAA-zurz-feld)** and Robert Merton.  
ANSWER: **apathy** [or answers referring to **apathy** directed towards specific things, such as social issues; prompt on Narcotizing dysfunction; prompt on related concepts like passivity]   
[10] This book describes the stages of shock, apathy, and depersonalization experienced by people in concentration camps. It claims that a title concept is found at "every moment of life, to the very last," and it introduced the method of logotherapy.  
ANSWER: ***Man's Search For Meaning***  
[10] Apathy is a cause of this phenomenon in which people are less likely to intervene in an emergency when they are in a large group.  
ANSWER: **bystander** effect  
<Social Science Psychology - Geoffrey Chen>

8. This doctor performed over thirty unconsented surgeries on Anarcha Westcott to repair the vesicovaginal **(VES-ik-o-vaj-in-ul)** fistula without anesthesia. For 10 points each:  
[10] Name this American "father of gynecology" who modified shoemaker's tools into a namesake catheter during terrible experiments on his own slaves.   
ANSWER: James Marion **Sims** [or **Sims** catheter]  
[10] The Public Health Service withheld treatment from sharecroppers with "bad blood" and studied its effects for 40 years in a controversial syphilis study centered at this institution. Booker T. Washington founded this black land grant university.  
ANSWER: **Tuskegee** University [or **Tuskegee** Institute; or **Tuskegee** Syphilis Study]  
[10] Dr. George Gey of Johns Hopkins University discovered that this woman's cells indefinitely reproduce and thus could be used in place of historical experiments. After she died of cervical cancer, this woman's family received no money from biotechnology made from her cells.  
ANSWER: Henrietta **Lacks** [or Loretta **Pleasant**; prompt on HeLa cells]  
<History American (1865-1945) - Ganon Evans>

9. This novel's structure is inverted in a book in which Mustafa Sa'eed murders his wife Jean Morris before drowning in the Nile. For 10 points each:  
[10] Name this novel, which contains a scene where the narrator watches a "creature" described as "bundles of acute angles" drink water from a river. Earlier in this novel, the image of that river on a map fascinates the narrator "as a snake would a bird."  
ANSWER: ***Heart of Darkness***[10] Tayeb Salih's inversion of *Heart of Darkness*, titled *Season of Migration to the North*, is written in this national language of Sudan. This language was used by Egyptian writer Tawfiq al-Hakim.  
ANSWER: **Arabic**[10] Many postcolonial readings focus on Mustafa Sa'eed's claim to be similar to this character as they are each both “Arab and African.” An Egyptian charmer gives this character’s wife an object she claims can help men fall in love with her.  
ANSWER: **Othello** [prompt on the Moor of Venice]   
<Literature World / Classical / Misc - Noah Sheidlower>

10. No single parameter can unambiguously order the strength of these compounds. For 10 points each:  
[10] Name these classes of compounds, which are described quantitatively by the E and C parameters of the ECW model. Members of these two classes of compounds are considered borderline if they have intermediate values of Mulliken electronegativity.  
ANSWER: **acid**s AND **base**s [accept Drago-Wayland **acid-base** parameters or hard-soft **acid-base** theory; accept, but do not otherwise reveal Lewis **acid**s AND Lewis **base**s or Lewis **acid-base** theory; accept answers which include "hard" or "soft", like Lewis **acid**s; prompt on HSAB]  
[10] The hardness of an acid or base depends on how localized their charge density is and their value for this quantity, which measures how easily an electron cloud is distorted. This quantity times the electric field yields induced dipole moment.  
ANSWER: **polarizability** [do not prompt on or accept "polarization"]  
[10] Hard-soft acid-base theory is an extension of this scientist's concept of a base as a compound which donates an electron pair to an acid.  
ANSWER: Gilbert (Newton) **Lewis** [accept **Lewis** acids, **Lewis** bases, or **Lewis** acid-base theory]  
<Science Chemistry - Vishwa Shanmugam>

11. Answer the following about the English conman Gregor MacGregor. For 10 points each:  
[10] After leaving Edinburgh, MacGregor was inspired to fight the Spanish under Francisco de Miranda, a dictator of this country. This country declared its independence after forces under Miguel de la Torre lost the Battle of Carabobo.  
ANSWER: Bolivarian Republic of **Venezuela** [or República Bolivariana de **Venezuela**]  
[10] MacGregor proclaimed himself the "Cazique **(kaz-EE-kay)** of Poyais" after being given land by a king of this ethnicity. The British established the settlement of Bluefields in a region named after this ethnicity.  
ANSWER: **Miskito** [or **Mosquito**; accept **Mosquito** Coast]  
[10] One of MacGregor's few successful forays was taking Amelia Island while expelling the Spanish from this colony. This colony was where the Spanish founded the oldest continuously inhabited settlement by Europeans in North America, St. Augustine.  
ANSWER: Spanish **Florida** [or La **Florida**]  
<History World - Hari Parameswaran>

12. A 2013 *Realty Times* survey used data from elevator manufacturers to estimate that 85% of buildings that should have this feature do not accurately label it. For 10 points each:  
[10] Name this location in tall buildings that is often used for non-habitable space such as machinery, or given a euphemistic name such as the "mezzanine level" in order to cater to superstition.  
ANSWER: **thirteenth** floor [accept word forms like Floor **Thirteen**]  
[10] Similarly, Chinese buildings often avoid designating floors with this number, which is a near-homophone of the word for "death."  
ANSWER: **four** [or **fourth** floor; or **sì**]  
[10] Other theories of superstitions about the number 13 are tied to this figure, who was depicted spilling salt in a 1495 painting. In Latin America, the destruction of an effigy of this figure is controversially conflated with the "Burning of the Jew."  
ANSWER: **Judas** Iscariot  
<Other Academic - Matt Weiner>

13. On an inner product space, the inner product of a vector with itself gives the square of one of these functions. For 10 points each:  
[10] Name this type of homogeneous, positive definite function that takes a vector and outputs a nonnegative real number that is, in some sense, the vector's length. Like metrics, these functions must obey the triangle inequality.   
ANSWER: **norm** [antiprompt on magnitude of a vector]  
[10] The standard Euclidean norm is the *Lp* **("ell-pee")** norm, where *p* is this number. When a vector has this many coordinates, it can be plotted on the Cartesian plane.   
ANSWER: **two**  
[10] The *L0* **("ell-zero")** norm, which is not technically a norm, gives the size of this set, which is the set of indices at which the vector has a nonzero coordinate. This term also refers to the set of points at which a function is nonzero.   
ANSWER: **support** [or **supp**]  
<Science Math - Tim Morrison>

14. This woman was literally walled into a chamber at Csejte **(CHAY-it-eh)** Castle in Slovakia after George Thurzo discovered evidence she smothered people in honey and let insects eat them alive. For 10 points each:  
[10] Name this Hungarian "Blood Countess" who murdered over 600 people and allegedly bathed in their blood to cure epilepsy.   
ANSWER: **E**lizabeth **Báthory** [prompt on Báthory; prompt on Lady Nadasdy]  
[10] Elizabeth Báthory was arrested under a king of this name. An earlier king of this name used a raven crest and coined the name for hussars as part of his Black Army.  
ANSWER: **Matthias** [or **Matthias** II; or **Matthias** Corvinus, or **Matej** Corvin, or Hunyadi **Mátyás**]  
[10] Elizabeth's uncle Steven was elected to this title by the Sejm and defended Livonia against Ivan the Terrible. Jagiellon **(yaag-EL-on)** holders of this title oversaw the Union of Lublin which made them Grand Duke of Lithuania as well.  
ANSWER: **king** of **Poland** [Accept **Polish king**]   
<History European 1400-1914 - Ganon Evans>

15. Dennis Brain made the first recording of a youthful concerto for this instrument in which the soloist enters with an arpeggiated melody after the orchestra's introductory E-flat major chord. For 10 points each:  
[10] Name this instrument for which Richard **(REE-card)** Strauss wrote two concertos. Strauss' father Franz was a virtuoso performer of this instrument.  
ANSWER: French **horn**  
[10] Franz Strauss played French horn in this composer's orchestra, where he premiered operas like *Das Rheingold* and *Parsifal*. This composer's Siegfried leitmotif **(light-moh-teef)** is a French horn call.  
ANSWER: (Wilhelm) Richard **Wagner**  
[10] A challenging French horn solo, along with a melody for D clarinet, represents the title trickster of this Strauss tone poem. This piece begins with a "Once upon a time" phrase played by strings and upper woodwinds.  
ANSWER: ***Till Eulenspiegel****'s Merry Pranks* [or ***Till Eulenspiegel****s lustige Streiche*; prompt on Till]  
<Arts Music - Shan Kothari>

16. This person is "Clad in the beauty of a thousand stars" in a speech which asks her to "make me immortal with a kiss." For 10 points each:  
[10] Name this person who is called "the face that launch'd a thousand ships" in Christopher Marlowe's play *Doctor Faustus.*  
ANSWER: **Helen** of Troy [or **Helen** of Sparta or **Helen** of Greece]  
[10] Paris's abandonment of his lover for Helen of Troy is depicted in Ovid's *Heroides*, which was paraphrased by this author in *Oenone* **(ee-NOH-nee)** *to Paris.* Angellica Bianca nearly kills Willmore in this author's play *The Rover.*  
ANSWER: Aphra **Behn** **(bane)**  
[10] A New York screenwriter juxtaposes Helen with this person in an Anne Carson play titled for this person *of Troy.* This person is fictionalized as the protagonist's suicidal wife in a play whose set consists of a chair in front of a concentration camp tower.  
ANSWER: Marilyn **Monroe** [or Norma Jeane **Baker**; accept ***Norma Jeane Baker of Troy***] (the second play is Arthur Miller's *After the Fall*)  
<Literature British - Caroline Mao>

17. Robert Stalnaker argued that these things are maximally consistent sets of properties. For 10 points each:  
[10] Identify these things which actually exist according to modal realists. A teenage Saul Kripke gave a semantics for modal logic based on an accessibility relation between these things.   
ANSWER: **possible world**s [prompt on worlds]  
[10] David Lewis defended modal realism in this 1986 book which opens in "a philosopher's paradise." This book argues that concrete possible worlds can do explanatory work in theories of counterfactuals, mental content, and properties.  
ANSWER: ***On the Plurality of Worlds***  
[10] In a 1973 paper, Lewis presented a theory of this phenomenon based on counterfactual dependence. Hume used the example of billiard balls colliding to argue that this phenomenon, in which one event necessitates another, is illusory.  
ANSWER: **causation** [or **cause** and effect; or word forms]  
<RMP Philosophy/Thought - Geoffrey Chen>

18. An author wrote this language "covers me like a kind of bark" in an article which compares learning this language to Daphne's transformation into a tree. For 10 points each:  
[10] Name this language. In an article on learning this language, that author calls English a "sense of failure that is the source of almost all my anxiety" as part of their explanation for no longer writing in English.  
ANSWER: **Italian** [or lingua **italiana**; accept "Teach Yourself **Italian**"]  
[10] This author discussed their decision to write only in the title language in "Teach Yourself Italian." Previously, this author used English to write *Interpreter of Maladies.*  
ANSWER: Jhumpa **Lahiri** [or Nilanjana Sudeshna **Lahiri**]  
[10] Ann Goldstein, who translated "Teach Yourself Italian" into English, also translated this author. This pseudonymous author, who is suspected of being Anita Raja, wrote the *Neapolitan Novels*.  
ANSWER: Elena **Ferrante**  
<Literature European - Caroline Mao>

19. Labs treat water with DEPC to inactivate these enzymes. For 10 points each:  
[10] Name these enzymes, one of which was denatured with urea and beta mercaptoethanol in Anfinsen's experiment. The "A" isotype is derived from bovine pancreases and can undergo domain swapping, while reverse transcriptases have domains similar to their "H" isotype.  
ANSWER: **ribonuclease**s [or endo**ribonuclease**s or **RNAse**s **(R-N-azes)**; accept **ribonuclease** A or **ribonuclease** H or **RNAse** A or **RNAse** H; prompt on nucleases; do not prompt on or accept "RNAs" and ask the player to spell their answer if you are unsure which they said]  
[10] Monomers of RNAse **(R-N-aze)** A partially undo this process in order to swap domains with each other. Anfinsen's dogma states that only the nucleotide sequence determines the outcome of this process, which forms the tertiary structure of a protein.  
ANSWER: protein **fold**ing  
[10] Anfinsen used beta mercaptoethanol to reduce these interactions, which can also be achieved using DTT. The ER protein PDI catalyzes the formation of these interactions.  
ANSWER: **disulfide** bonds [or **disulfide** bridges; prompt on chemical bonds or covalent bonds or answers specifying bonds between cysteine residues or sulfur atoms]  
<Science Biology - Vishwa Shanmugam>

20. In Argentine folklore, the yacumama resembles an old woman before turning into one of these animals to eat lured victims. For 10 points each:  
[10] Name this animal. In Chilean folklore, the peuchen **(pay-oo-chen)** resembles one of these animals with bat wings, and a creature resembling one of these animals named El Culebrón **(koo-leh-brohn)** reproduces by dipping its hair in milk.   
ANSWER: **snake**s [accept specific types of snakes such as **anaconda**s or **python**s; accept **serpent**s]  
[10] The gaze of a peuchen stuns its prey so the peuchen can perform this specific action. The Chupacabra is named for its ability to perform this action on goats.  
ANSWER: **drinking blood** [accept **vampirism** or **hematophagy** or **bloodsucking**; do not accept or prompt on answers like "eating the body"]  
[10] In Aztec myth, Quetzalcóatl **(ket-zahl-coh-aht-ahl)** and Tezcatlipoca **(tez-kat-lee-poh-ka)** turned into snakes and ripped a goddess named for a "Divine" form of this type of animal in half to create the earth and the sky. A god in this form collected the sons of Horus in a net after they were born.   
ANSWER: **crocodile** [accept "part man, part **crocodile**", accept **Sobek**]  
<RMP Non-Greek/Roman Myth - Ganon Evans>

21. Over 600,000 of these objects were used by Kester to create a piece in which a crocodile and ibis rest near a *Tree of Life*. For 10 points each:  
[10] Name these objects, which were modeled into thrones by Mozambican artists Kester and Gonçalo Mabunda.   
ANSWER: **gun**s [accept synonyms for guns such as fire**arms**; accept specific forms of **gun**s such as a **rifle**, **pistol**, or a **shotgun**; accept specific guns models like **AK-47**s or **Glock**s; prompt on weapons or similar answers]  
[10] The Sarr-Savoy report on restitution suggests returning two wooden thrones to Mozambique from the Quai Branly institution of this type. These institutions, the primary targets of restitution, include one in Britain that controversially holds many Benin Bronzes and the Elgin Marbles.  
ANSWER: **museum**s [accept specific types of museums, like history **museum**s or art **museum**s]  
[10] Mozambican artist Naguib Elias Abdula's painting *Sacred Tree* is displayed in this location, also the home of Barbara Hepworth's *Single Form.* Marc Chagall's stained glass mural *Peace* is found at this location.  
ANSWER: the **United** **Nations** Headquarters [accept the **UN** secretariat building; accept the **UN** General Assembly or **UN** Security Council]  
<Arts Sculpture - Ganon Evans>