COLLABORATIVE ACADEMIC SPRING TOURNAMENT 2019

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PACKET 12 TOSSUPS

1. **A university in this city has ethnically-themed Nationality Rooms in its 535-foot-tall Cathedral of Learning. This city is home to a set of bridges called the Three Sisters, named for Roberto Clemente, Rachel Carson, and Andy Warhol. Residents of this city use the second-person plural pronoun (*)** "yinz." A park known as The Point is located where the Ohio, Allegheny, and Monongahela Rivers meet in this city, where Heinz is headquartered. Andrew Carnegie helped start this city's massive pre-war steel industry. For 10 points, name this city, which, after Philadelphia, is the largest city in Pennsylvania.
ANSWER: **Pittsburgh** <WG>

2. **A piece by this composer opens in 5/2 time and features a solo cello evoking the liturgical *Obikhod* chant. A solo violin playing sixteenth note triplets over harp arpeggios represents the title female character in a work by this composer. This composer included Asturian folk songs and two "Alborada" movements in his *Capriccio Espagnol*. This composer included "The Kalendar Prince" and "The (*)** Sea and Sinbad's Ship" in a four-movement symphonic poem inspired by the *Arabian Nights*. For 10 points, identify this composer of *Russian Easter Festival Overture* and *Scheherazade* whose opera *The Tale of Tsar Saltan* includes his "Flight of the Bumblebee."
ANSWER: Nikolai **Rimsky-Korsakov** <NS>

3. **In this colony, the Apalachee Indians were raided by members of the disastrous Narváez ("nar-VYE-es") expedition. The Treaty of Moultrie Creek forced natives in this colony to move, angering Chief Osceola ("OSS-ee-oh-la"). The upper boundary of this colony was set by Pinckney's Treaty. James Monroe signed an 1819 agreement giving the United States control of this colony, called the (*)** Adams-Onís Treaty. Juan Ponce de León attempted to find a Fountain of Youth in this colony. The oldest continuously inhabited European settlement in the U.S. is in its city of St. Augustine. For 10 points, name this colony where the Seminole Wars were fought.
ANSWER: Spanish **Florida** <WG>

4. **This man is said to have arrived at Mount Judi in the 71st *sura* of the Quran, which is named for him. Mormon theology states that this man is the same as the archangel Gabriel. After planting a vineyard, this man became the first person to discover wine. This man condemned the descendants of his grandson Canaan to be slaves after his son (*)** Ham saw his "nakedness." This father of Japheth and Shem was given an olive branch by a dove he dispatched to look for land, eventually leading to the Rainbow Covenant with God. For 10 points, name this Biblical patriarch who created a namesake ark with two of every animal during the Great Flood.
ANSWER: **Noah** <GP>

5. **In this novel, two children hide inside of a statue of an elephant after a maid is arrested. After rescuing him from being crushed by a cart, a character in this novel employs Fauchelevent as a gardener. In this novel, barricades are constructed by the revolutionary group the Friends of the (*)** ABC, whose members include the boy Gavroche and Marius. This novel's protagonist tells the prostitute Fantine that he will adopt her daughter Cosette. Inspector Javert jumps into the Seine River after pursuing a reformed criminal for decades. For 10 points, Jean Valjean is the protagonist of what novel by Victor Hugo?
ANSWER: _**Les Misérables**_ [or The _**Miserable Ones**_; or The _**Miserables**_; prompt on _Les Mis_] <WG>

6. **When this quantity is infinitely low, it approximates activity, which is an "effective" form of this quantity. This quantity is equal to absorbance over path length times extinction coefficient according to Beer's Law. While not pressure, equilibrium constants are commonly written in terms of (*)** powers of these quantities, denoted by using brackets. The partial pressure of a gas in a mixture is equal to the total pressure times the gas's value for this quantity, according to Dalton's law. It's not chemical potential, but diffusion results from a gradient in this quantity. For ten points, name this quantity, often measured using molality or molarity.
ANSWER: **concentration** [accept **mole fraction**; accept **molarity** or **molality** before mention] <AG>

7. **Following the consecration of four priests against his orders in Econe, this man excommunicated Marcel Lefebvre ("luh-feb-vruh"). This man began the celebration of World Youth Day. He refuted Liberation Theology at the Puebla Conference, and he survived an assassination attempt by the Grey** (*) Wolves member Mehmet Ali Agca. This man criticised a growing "culture of death" and opposed euthanasia in the encyclical _Evangelium Vitae_. Joseph Ratzinger succeeded this man, who was the first non-Italian to hold his position since Adrian VI, as Benedict XVI. For 10 points, name this first Polish pope who reigned from 1978 to 2005.
ANSWER: Pope **John Paul II** [Accept Karol Józef **Wojtyła**; prompt on John Paul; do NOT accept or prompt on "John" or "Paul" by themselves] <GP>

8. **For constant elasticity of substitution, the total amount of this process is given by the Leontief ("lee-ON-tee-ef") function, and another function of this process is named after Cobb and Douglas. The tradeoff between "guns" and "butter" is often shown with a curve named for this process's "possibilities frontier." Classical economists identified land, labor and capital as the three** (*) factors of this process. The cost of this process decreases as more occurs in economies of scale. Karl Marx defined the bourgeoisie ("boor-jwah-ZEE") as those who owned the means of this process. The development of the assembly line allowed for the "mass" form of this process. For 10 points, name this process in which goods are created.
ANSWER: **production** [accept **production** function, accept mass **production**, accept word forms like **producing** goods, prompt on descriptions that don't use the word product, such as "making things"] <GC>

9. **This man used the example of inaccuracies in the Millikan oil-drop experiment to argue for avoiding fooling yourself in his lecture "Cargo Cult Science." One approach invented by this man involves computing amplitudes by integrating over all paths. This man, along with Schwinger and Tomonaga, proposed a theory which framed the electromagnetic force as mediated by (*)** photon exchange. Wavy lines indicate photons on his namesake diagrams, which show particle decays. For 10 points, name this Caltech scientist and pioneer of QED, the bongo-playing author of a popular three-volume set of lectures on physics.
ANSWER: Richard **Feynman** [or Richard Phillips **Feynman**] <EM>

10. **This country's African territories are detailed on the Pink Map. The groups UNITA and MPLA rebelled against this European country. One explorer from this country gave low quality gifts to the king of Calicut. This country is the origin of a slender and fast ship called a caravel. It received the western portion of the land given in the Treaty of (*)** Tordesillas. An explorer from this country who rounded the Cape of Good Hope and reached India was named Vasco da Gama. For 10 points, name this home country of Pedro Cabral, who became the first European to discover Brazil.
ANSWER: **Portugal** <WG>

11. **In a novel set in this state, Magnus Derrick leads a group of ranchers against the development of a corrupt railroad. Weedpatch Camp in this state is where a group of old ladies talk about stillborn children. In this state, a man wears a glove full of vaseline and runs a farm on which two characters discuss owning "a little house" with Crooks. Lawrence Ferlinghetti founded (*)** City Lights Bookstore in this state, which propelled Beat Generation authors to publish their novels. In this state, the death of Curley's wife prompts George to shoot the mentally handicapped Lennie. For 10 points, name this state, the setting of *Of Mice and Men* by John Steinbeck and many "Hollywood novels."
ANSWER: **California** [The first clue is *The Octopus: A Story of California*] <NS>

12. **One former leader in this industry was imprisoned for his role in the Upper Big Branch disaster, thus causing him to label himself a political prisoner of the Obama administration. The 2012 Marikana massacre ended a strike of workers in this industry in South Africa, where this activity takes place near the towns of Rustenburg and (*)** Kimberley in the Witwatersrand formation. The 2010 Copiapo Accident caused 33 Chilean workers in this industry to be trapped in an underground tunnel. For 10 points, name this industry concerned with extracting precious metals like gold and silver.
ANSWER: **mining** [accept mining for **gold** or **diamond**s or **platinum** or **coal** or **copper**] <JA>

13. **This man names a "naive" set of classifiers in machine learning that use his theorem to probabilistically classify text and images. A directed acyclic ("ay-SIC-lic") graph can model networks named for this man, in which variables and their dependencies are shown. Frequentism is contrasted with this man's (*)** namesake paradigm. This man names a theorem that calculates the posterior probability as the product of a likelihood and prior probability. For 10 points, name this man whose theorem about conditional probability can be illustrated in the Monty Hall problem.
ANSWER: Thomas **Bayes** <DM>

14. **One of this author's novels is divided into six chapters including "Into the Golden Age" and one which tells the story of Prem Bodasingh's persecution. In another of this author's novels, a character grieving the death of his son and wife helps construct a village's dam and church after donating milk. This author of *Ah, But Your Land is Beautiful* wrote about (*)** Napoleon Letsitsi's visit to Ndotsheni to help James Jarvis rebuild farmland. In that novel, Mr. Carmichael defends Arthur Jarvis's murderer, a boy named Absalom. For 10 points, name this South African author who wrote about Stephen Kumalo in *Cry, The Beloved Country*.
ANSWER: Alan **Paton** [or Alan Stewart **Paton**] <NS>

15. **Strict rules for these things are described by the adjective "Ximenean." Leonard Dawe created one of these things falsely believed to have revealed classified information about D-Day. A competition involving one of these things selected people to work at Bletchley Park to try and crack the (*)** Enigma machines. Will Shortz edits these things in a newspaper where they increase in difficulty from Monday to Friday. They must have rotational symmetry and the "cryptic" variety has a higher ratio of black squares to whites. For 10 points, name these puzzles where people write in grids.
ANSWER: **crossword** puzzles [or **crosswords**] <WG>

16. **Soldiers from an alliance in this country defeated Leopold I of Austria and his knights in an ambush at the Battle of Morgarten. Heinrich Bullinger succeeded one religious leader in this country. During a series of wars between Protestants and Catholics in this country named for the Kappel monastery, Huldrych (*)** Zwingli was killed. This country was where Michael Servetus was burnt at the stake by the theocratic government of John Calvin, and a 1291 charter created a confederation of the Three Forest Cantons in this country, which was where the Helvetic Republic was formed. For 10 points, name this mountainous European country known for its historic neutrality.

ANSWER: **Switzerland** [Accept **Swiss Confederation**; or Confederation **Suisse**; or Confederazione **Svizzera**; **Svizzra**; or **Schweiz**erische Eidgenossenschaft; or Confederazione **Elvetica** before "Helvetic" is read; or Confederaziun **Helvetica** before "Helvetic" is read; or **Helvetia** before "Helvetic" is read; or **Helvetic** Confederation before "Helvetic" is read] <GP>

17. **An artist who shares her surname with this city created place settings for famous women in history in *The Dinner Party*. Marc Chagall's *Four Seasons* Mosaic is located in a building in this city. Sculptures found in this city include Henry Moore's *Nuclear Energy* and Alexander Calder's *Flamingo*. Anish Kapoor's sculpture (*)** *Cloud Gate*, which is located in this city's Millennium Park, is commonly nicknamed "The Bean." The paintings *Nighthawks* and *American Gothic* are located in this city's namesake art institute. For 10 points, name this location of Willis Tower, the largest city in Illinois.

ANSWER: **Chicago** (accept Judy **Chicago**) <WG>

18. **The first part of this work begins with 136 measures of a four-minute long E-flat major drone. In the last part of this work, a rope breaks without warning, and in an earlier part, dragon's blood allows the protagonist to read the dwarf Mime's thoughts. The "Death Curse" motif is first heard in this work following the theft of the (*)** helmet Tarnhelm. In this work, Waltraute begs Brunnhilde to return the title object which was crafted by Alberich. This work, which features the "Ride of the Valkyries," ends with the burning of Valhalla and includes over 170 *leitmotifs*. For 10 points, name this series of four operas including *Götterdämmerung* and *Siegfried*, by Richard Wagner.

ANSWER: The **Ring Cycle** [or *Der **Ring des Nibelungens***; or *The **Ring of the Nibelung***] <NS>

19. **A disease in which this process occurs excessively is caused by antibodies to orexin-producing neurons. Z-drugs like zaleplon and zopiclone can help induce this process. Some people experience hypnagogic ("HIP-nah-GAH-jick") hallucinations when entering this process. A CPAP ("C-PAP") machine is used to treat a form of (*)** apnea that occurs during this process, which is common in obese people. It occurs excessively in narcolepsy and it can be divided into REM and non-REM phases. For 10 points, name this process which is impaired in insomnia.

ANSWER: **sleep** <EM>

20. **A poem named after this figure discusses men who "ever with a frolic welcome took the thunder and the sunshine" and oppose "free hearts, free foreheads." This character who has "become a name" states that he will "drink life to the lees" and decides to "sail beyond the sunset." A woman in a novel titled for this character states "yes I said yes I will yes" to a marriage proposal and has an affair with (*)** Blazes Boylan. That novel, set on June 16, 1904, follows Leopold Bloom's journey through Dublin. A poem titled for this figure ends "to strive, to seek, to find, but not to yield." For 10 points, name this "idle king" of a Tennyson poem and the title mythical figure of a James Joyce novel.

ANSWER: **Ulysses** [accept **Odysseus**] <NS>

PACKET 12 BONUSES

1. Answer the following about Christmas in British history. For 10 points each:
[10] Celebrating Christmas was banned during the rule of this man, who served as Lord Protector after Charles I was executed at the end of the English Civil War.
ANSWER: Oliver **Cromwell**
[10] During this war, many British soldiers emerged from their trenches in a ceasefire known as the Christmas Truce.
ANSWER: **World War I** [or the **First World War**; or **Great War**; prompt on World War]
[10] Days after his coronation on Christmas Day, William the Conqueror ordered the construction of this building. According to legend, if the ravens at this location are lost or fly away, the crown and Britain itself will fall.
ANSWER: **Tower of London** <WG>

2. One of these animals "interposed" on a woman who "signed away what portions be assignable." For 10 points each:
[10] Name this animal, which made a "blue, uncertain, stumbling" sound before the poem's speaker "could not see to see."
ANSWER: **fly**
[10] In Emily Dickinson's poem "I heard a Fly buzz -- when I died," the buzzing the fly makes is an example of this literary device meant to imitate a sound.
ANSWER: **onomatopoeia**
[10] Dickinson used many of these punctuation marks to indicate pauses, such as between the phrases "I heard a Fly buzz" and "when I died." Many editors chose to ignore them when reprinting her poems.
ANSWER: **dash**es [or **em dash**es] <WG>

3. One work by this sculptor depicts six councilmen with nooses around their necks in a scene from the Hundred Years' War. For 10 points each:
[10] Name this French sculptor of *The Burghers of Calais* whose *The Gates of Hell* is based on Dante's Inferno. He also depicted a man resting his head on his hand in *The Thinker*.
ANSWER: François Auguste René **Rodin**
[10] Rodin's sculpture of this name depicts Paolo and Francesca embracing. A proto-Cubist sculpture of this name by Constantin Brâncuşi ("bran-KOOSH") depicts two geometric figures performing the title action.
ANSWER: *The **Kiss***
[10] Rodin created a sculpture of a man with no arms or head thrusting his body forward in *The Walking Man*. This Swiss sculptor created a similar work of the same name made of wiry, thin bronze with elongated limbs.
ANSWER: Alberto **Giacometti** <NS>

4. Answer the following about the Peano ("pee-AH-noh") axioms, for 10 points each,
[10] The Peano axioms rigorously define this branch of mathematics, which deals with operations like addition and subtraction.
ANSWER: **arithmetic**
[10] The axioms define this proof method, in which statements about infinite sets of numbers are proved by establishing a base case, then proving that if a proposition holds for k, it holds for $k+1$.
ANSWER: mathematical **induction**
[10] The axioms also define natural numbers to have this property, which means any natural number equals itself. Equivalence relations are symmetric, transitive, and have this property.
ANSWER: **reflexive** <VS>

5. An inscription by this monarch was translated in 1837 by James Prinsep. For 10 points each:
[10] Name this Mauryan emperor, who converted to Buddhism and commissioned several pillars known as his edicts.
ANSWER: **Ashoka** the Great
[10] Ashoka and Chandragupta ruled the Mauryan Empire, which was the largest empire in the history of this South Asian country. This country is home to the caste system, where people inherit an identity such as a Brahmin.
ANSWER: **India** [or Republic of **India**; or **Bharat**; or **Bharat**avarsha]
[10] Ashoka supposedly converted to Buddhism after seeing the carnage of this conflict in the modern-day Indian state of Odisha. This war was supposedly so brutal that the Daya River turned red with blood.
ANSWER: **Kalinga** War <GP>

6. Answer the following about ancient geographers, for 10 points each:
[10] The term "geography" was coined by Eratosthenes, who made a geometric estimation of this quantity by comparing shadows in two Egyptian cities. His estimate for this quantity was 252,000 Greek *stadia*, a figure remarkably close to the actual value of this quantity.
ANSWER: **circumference** of the **Earth** [accept equivalents for "Earth"]
[10] Ptolemy compiled a treatise on geography whose first part discusses the use of projection to create these items. Its second part collects several of these diagrams in a section often compared to a modern atlas.
ANSWER: **map**s
[10] The geographer Strabo studied at this building, where Eratosthenes once served as a superintendent. Together with Syene, this building's home city was one of the cities Eratosthenes used to measure the earth's circumference.
ANSWER: **Library** of **Alexandria** (accept **Mouseion**) <JA>

7. A dance named for this word popular in the drag community involves moving down a catwalk and striking poses. For 10 points each:
[10] Give this word which also titles a fashion magazine published by Condé Nast and edited by Anna Wintour.
ANSWER: **vogue** [or **voguing**]
[10] Every May, the magazine Vogue hosts an annual gala held at this institution in New York City. The 2018 event was inspired by the fashion of the Catholic Church.
ANSWER: The **Metropolitan** Museum of Art [or the **Met**; or **Met** Gala; or **Met** Ball]
[10] This British princess appeared on the cover of British Vogue four times during a period when she was the most photographed woman in the world. She died in a 1997 car accident.
ANSWER: Princess **Diana** [or **Diana**, Princess of Wales; or Lady Diana **Spencer**] <WG>

8. This poem's speaker runs "into the furious lashings of the tides more heedless than children's brains the other winter." For 10 points each:
[10] Identify this Arthur Rimbaud poem about an object that goes "down impassive Rivers." Its speaker exclaims "O let me go into the sea!"
ANSWER: "The **Drunken Boat**" [prompt on boat**]
[10] Arthur Rimbaud also wrote a poem titled "A Season in [this place]." Jean-Paul Sartre's short story "No Exit" states that "[this place] is other people."
ANSWER: **hell** [accept **enfer**]
[10] Rimbaud was a member of this French literary movement whose other proponents included Paul Verlaine and Stéphane Mallarmé.
ANSWER: **Symbolism** [accept word forms] <NS>

9. Thomas Jefferson sent diplomats to France in 1803 to negotiate the purchase of this city. For 10 points each:
[10] Name this city at the mouth of the Mississippi River, which was ceded as part of the Louisiana Purchase. Andrew Jackson won a battle defending this city against the British during the War of 1812.
ANSWER: **New Orleans** [or the Battle of **New Orleans**]
[10] Robert Livingston and this man were sent to France to negotiate the purchase of New Orleans. As president, this man's namesake doctrine stated American opposition to European colonial ventures in the New World.
ANSWER: James **Monroe** [or the **Monroe** Doctrine]
[10] American farmers could already store their goods in New Orleans thanks to a 1795 treaty negotiated with this country. The city of Galveston was named for a general from this country who fought in the American Revolution.
ANSWER: **Spain** [or Kingdom of **Spain**; or Reino de **España**] <GP>

10. Class switching changes these proteins' isotypes. For 10 points each:
[10] Name these Y-shaped proteins which bind to antigens. These proteins contain constant and variable domains.
ANSWER: **antibodies** [accept **immunoglobulin** or **Ig**]
[10] Antibodies are produced by the plasma variety of these immune cells, whose division is stimulated by helper T cells in the humoral response. The memory type of these cells leads to a faster secondary response.
ANSWER: **B** cells
[10] Antibodies are composed of two each of these two chains held together by disulfide bonds. One of these has kappa and lambda varieties in humans, while the other has nine subclasses and determines the isotype. Name both.
ANSWER: **heavy** chain and **light** chain <AG>

11. Answer the following about musical instruments from the Middle East, for 10 points each:
[10] This fretless, eleven-stringed instrument is called the "king of instruments" in the Arab world and is part of the lute family.
ANSWER: *oud*
[10] The ancestor of this instrument, the *shawm*, originated from the Middle East. Orchestras tune to this instrument when it plays an A at 440 Hz ("hertz").
ANSWER: **oboe**
[10] The *doumbek* is a variety of this instrument shaped like a goblet. Other examples of this type of instrument include the West African *djembe* and the Afro-Cuban bongos.
ANSWER: **drum**s [prompt on percussion instruments] <WG>

12. A man with this profession states that "Those that I fight I do not hate, those that I guard I do not love." For 10 points each:
[10] Identify this profession of a man who "knows that I shall meet my fate somewhere among the clouds above." That man "Foresees His Death" in a 1918 poem.
ANSWER: **airman** [accept **pilot**; or **aviator**; or "An Irish **Airman** Foresees His Death"]
[10] This poem by the same author imagines a "rough beast" who "slouches towards Bethlehem to be born." This poem, which envisions a Messianic arrival, begins "turning and turning in the widening gyre."
ANSWER: "The **Second Coming**"
[10] This author wrote "An Irish Airman Foresees His Death" and "The Second Coming." The line "there is no country for old men" comes from this Irish author's poem "Sailing to Byzantium."
ANSWER: William Butler **Yeats** ("yates") <NS>

13. For 10 points each, answer the following about religious practices in Vietnam.
[10] Though it sanctions other religious groups, the communist government of Vietnam officially adheres to this ideology. This ideology declares a lack of belief in any deities or higher powers.
ANSWER: **atheism**
[10] Around two million Vietnamese practice the Hoa Hao offshoot of this larger religion. In Myanmar, practitioners of this religion have persecuted the Muslim population, contradicting an image of this religion's monks as peaceful.
ANSWER: **Buddhism** [accept **Mahayana** Buddhism]
[10] In 1926, Ngo Van Chieu established this syncretic religion, whose name translates to "high place". Headquartered in Tay Ninh, this religion reveres three saints who include Sun Yat-sen and Victor Hugo.
ANSWER: **Cao Dai** [or **Dao Cao Dai**; or **Caodaiism**; or **Dai Dao Tam Ky Pho Do**] <JA>

14. A checkerboard form of this procedure is used to calibrate an ELISA, while a more common type uses phenolphthalein ("fee-nawl-THAY-leen") as an indicator. For 10 points each:
[10] Name this procedure in which a buret is used to slowly drip a standard solution into one of unknown concentration. Indicators are used in the acid-base type of this procedure.
ANSWER: **titration** ("tye-TRAY-shun")
[10] This is the point during a titration at which the moles of acid equal the moles of base. Its located at the inflection point of the curve.
ANSWER: **equivalence** point [or **stoichiometric** point; do NOT accept "endpoint"]
[10] In this kind of titration, a chelating ("KEE-late-ing") agent like EDTA is added to a solution containing metal ions, in order to determine the concentration of said ions in the solution.
ANSWER: **complexometric** titration [or **chelatometry**] <EM>

15. Characters in the short story "How Pearl Button Was Kidnapped" travel to a settlement inhabited by people of this ethnic group. For 10 points each:
[10] Identify this indigenous group central to Keri Hulme's novel *The Bone People*. Witi Ihimaera discussed Koro's participation in this culture's rituals in *Whale Rider*.
ANSWER: **Maori**
[10] This author wrote the aforementioned "How Pearl Button Was Kidnapped." This New Zealand author wrote a work in which Mrs. Scott's husband dies in a mining accident to Laura Sheridan's dismay in "The Garden Party."
ANSWER: Katherine **Mansfield** Beauchamp [or Katherine **Mansfield** Murray]
[10] New Zealand-based author Eleanor Catton, whose novel *The Luminaries* features many Maori characters, was born in this country, also home to Alice Munro who set many of her works in Huron County, Ontario.
ANSWER: **Canada** <NS>

16. One psychologist tested the effects of social isolation on these animals by confining newborns in a pyramidal cage called the "pit of despair." For 10 points each:
[10] Name these mammals that Harry Harlow used as test subjects to determine the importance of maternal affection in the development of an infant.
ANSWER: rhesus **monkey**s
[10] In another study, capuchin monkeys were presented with pairs of similar objects and shown to reject the same object each time in order to reduce this phenomenon. Leon Festinger famously studied this state in members of apocalyptic cults.
ANSWER: **cognitive dissonance**
[10] The "Invisible Gorilla" experiment shows the "selective" form of this capacity, in which subjects who focus on counting become less likely to notice a person in an ape costume. Individuals with a "deficit" of this may suffer from ADHD.

ANSWER: **attention** <JA>

17. Gallium arsenide can be doped with silicon to form an n-type example of one of these materials. For 10 points each:
[10] Name these materials that can be classified as n-type of p-type depending on the presence of excess electrons or holes. They have an electrical conductivity between that of metals and insulators.
ANSWER: **semiconductor**s
[10] One of these electrical components is formed by the junction between an n-type and p-type semiconductor. These components restrict the flow of current to one direction and fail above the breakdown voltage.
ANSWER: **diode**s
[10] These electrical components are composed of a series of semiconductors in either NPN or PNP configuration. They use a collector, base, and emitter to amplify current and have been largely replaced by a more popular "field effect" counterpart.
ANSWER: **bipolar junction transistor**s [or **BJT**; prompt on partial answer] <JA>

18. This rapper was the subject of a diss track by Pusha-T which revealed he had a secret child named Adonis. For 10 points each:
[10] Name this Canadian rapper whose recent hits include "In My Feelings," "Nice For What," and "God's Plan."
ANSWER: **Drake** [or Aubrey Drake **Graham**]
[10] On the song "God's Plan," Drake sings "She said 'do you love me?'/I tell her only partly" before apologizing for only loving two things. Name either of those things.
ANSWER: his **bed** and his **momma** [accept **mom**, **mother**, or **S**andra "Sandi" **Graham** for momma]
[10] "Nice for What" heavily samples this artist's song "Ex-Factor." This former member of the Fugees has largely kept out of the spotlight after releasing a 1998 R&B album titled for her "Miseducation."
ANSWER: Lauryn **Hill** [or Ms. Lauryn **Hill**; or Lauryn Noelle **Hill**] <WG>

19. This battle began after Atahualpa tossed down a Bible offered to him by Vincente de Valverde. For 10 points each:
[10] Name this 1532 battle in which a force of 168 conquistadors overcame 7,000 of Atahualpa's men before capturing him in a namesake Peruvian city.
ANSWER: Battle of **Cajamarca**
[10] The capture of Atahualpa marked the downfall of this massive South American empire, whose capital of Cusco was seized by the Spanish a year later. This empire is more famous for building the walled town of Machu Picchu.
ANSWER: **Inca** Empire
[10] This former companion of Vasco Nunez de Balboa led the victorious Spanish force at Cajamarca, and would go on to found the city of Lima.
ANSWER: Francisco **Pizarro** <JA>

20. This hero used a golden bridle to tame the winged horse Pegasus after King Iobates sent him to defeat a three-headed monster. For 10 points each:
[10] Name this mythological hero who slew the Chimera by hurling a lead-tipped spear into its mouth.
ANSWER: **Bellerophon** [or **Bellerophontes**]
[10] The Chimera suffocated after using this ability, causing Bellerophon's spearhead to melt and lodge in its throat. In another myth, Jason yokes a pair of bulls with this ability by using a potion to make his body heat-resistant.
ANSWER: **breathing fire** [accept equivalents]
[10] Bellerophon's story is recounted in the Iliad by his grandson Glaucus, who exchanges armor with this descendant of Bellerophon's friend Oeneus. This Greek hero later joins Odysseus in stealing the horses of Rhesus.
ANSWER: **Diomedes** <JA>