ACADEMIC COMPETITION FEDERATION

2015 ACF Nationals
Packet 1 by The Editors

Tossups

1. The first movement of Lutoslawski's symphony of this number consists of seven "episodes" each followed by "refrains" for the oboe, English horn, and bassoons; that symphony is divided into movements marked "hesitant" and "direct." Charles Ives quoted "Wake Nicodemus" and "Bringing in the Sheaves" at the beginning of the second movement of his symphony of this number, which climaxes by quoting "Columbia, the Gem of the Ocean" in its fifth and final movement. Alexander Borodin's symphony of this number includes a scherzo in 1/1 time, and was his final completed symphony. A C minor symphony of this number quotes the song "Urlicht" in its fourth movement, and begins with a movement based on the symphonic poem *Totenfeier*. The final movement of that symphony of this number quotes an ode by Friedrich Klopstock. For 10 points, give this number of Mahler's symphony nicknamed "Resurrection."
ANSWER: **second** symphonies [or Symphony no. **2**]

2. In the grand canonical ensemble, the derivative of the particle density with respect to the chemical potential equals pressure divided by the square of this quantity. The distance at which the Coulomb energy between two elementary charges equals this quantity is called the Bjerrum length. The ensemble average of the product of a generalized coordinate x and the derivative of the Hamiltonian with respect to x equals this quantity. In Flory-Huggins theory, the exchange energy is normalized by this quantity to give the interaction parameter. The phonon energy is divided by this quantity in the heat capacity integral found in the Debye model. The inverse of this quantity is the thermodynamic beta. The average energy per quadratic degree of freedom equals one-half times this quantity according to the equipartition theorem. For 10 points, name this quantity which represents a thermal energy scale, since it equals the product of the constant equal to 1.38 times 10 to the minus 23 Joules per Kelvin and a quantity measured in Kelvins.
ANSWER: **kT** [or **kBT**; or the **product** of **Boltzmann's constant** and **temperature**; or obvious equivalents; or **thermal energy** until it is read, do NOT accept or prompt on partial answers]

3. At one point in this novel, a group of characters find a bunch of graffiti, including the large circled words "ALL FORGET", on the plywood walls of a storage crate. The main character of this novel is obsessed with training himself in "absolute dispassion", while another of its characters mentally repeats the mantra "the man sets out in search of the Grand Cause; the woman is left behind". A character in this novel runs a luxury clothing boutique called Rex, Ltd, and is proposed to by another character who embarrasses the protagonist by showering in a public drinking fountain. This novel's protagonist is disgusted when he isn't severely punished for using a hole in a chest of drawers to spy on his mother having sex, which prompts him to ask "the chief", the leader of his gang of teens, to help poison his former "splendid hero", the title character. For 10 points, name this novel whose title character Ryuji Tsukazaki is the second mate on the *Rakuyo*, a work of Yukio Mishima.
ANSWER: The **Sailor Who Fell From Grace With the Sea** [or **Gogo no Eiko**; or The **Afternoon** Ship**towing**]

4. A story claims that this man played a practical joke by dressing a baboon up in a cape and having it jump out of a chest at his rival, John Montagu, who thought he was being attacked by the devil and repented his sins. This man fought a duel at the Red Lion Inn with another rival, William Talbot, but both shots missed. He wasn't as lucky when he was shot in the stomach during his duel with Samuel Martin. Several of this man's supporters, such as William Allen, were killed in the "Massacre of St. George's Fields" after Justice Gillam read the Riot Act to a crowd. Over the next year, this man was expelled from the House of Commons three times, initially because Issue #45 of his paper *The North Briton* allegedly contained "seditious libel." This member of the Hellfire Club lost the support of many extremists after he helped quash the Gordon Riots. For 10 points, name this radical English journalist who frequently parodied George III and lends his name to an American assassin.
ANSWER: John **Wilkes**

5. A poet who could summon necromantic kittens learned the entirety of this event's narrative when a ghost of one of its participants told him about it at his mist-shrouded gravestone. During this event, a character shoots a bird and a squirrel off the shoulders of people standing on opposite sides of a river. A character wounded during this event wanders across the countryside naming places before he dies. A character taking part in this event is interrupted by the interference of an eel and a she-wolf. A sword that makes rainbows when it is swung is used to slice the tops off of three hills by a participant in this event. Many warriors are unable to participate in this conflict due to a curse that plagued them with nine days of debilitating labor pains. Episodes in this conflict include the death of Ferdiad and combat with Fergus mac Roich, and it was sparked when a queen found herself less wealthy than her husband Ailill. For 10 points, Cuchulainn tried to prevent what event in which Queen Medb ("mayv") stole a brown bull from Ulster?
ANSWER: **Cattle Raid of Cooley** [or **Táin** Bó Cúailnge ("tyne bo coo-ahl-nyeh"); prompt on "**cattle raid**" or obvious equivalents]

6. These devices are used to create MISERs, which are also called nonplanar ring oscillators. An injection signal can be used by a "master" one of these devices to control the frequency of a "slave" one. It's not a QWIP, but another type of these devices contains a semiconductor superlattice with a series of quantum wells and relies on inter-sub-band transitions occurring in each well. A type of these devices contains a noble gas halide which dimerizes when exposed to an electric current. These devices are used to supply energy to a deuterium- tritium pellet to produce a high density plasma in inertial confinement fusion. These devices come in quantum cascade and excimer types, and they contain a resonator cavity that surrounds a gain medium, such as titanium-sapphire or helium-neon. Pumping is used in these devices to put more atoms in the excited state than the ground state, thus producing a population inversion. For 10 points, name these devices that produce light via stimulated emission.
ANSWER: **laser**s [or **light amplification by stimulated emission of radiation** until "light" is read]

7. At one point, the entity which puts out this publication sponsored a research effort called the "1980s project" led by Richard Ullmann and Bayless Manning. Edwin Gay and "Colonel" Edward House initially bankrolled this publication as part of a group known as "The Inquiry." Archibald Coolidge first ran it, but in order to handle its daily operation, he appointed Hamilton Fish Armstrong, who had his sister Margaret design its logo, showing a naked man riding a bucking white horse above a scroll containing the Latin word for "ubiquitous." Featuring a light blue cover, its first release described the need for an informed American public. It later contained five articles by W.E.B. DuBois including one on the problem of the "Color Line" in America, and its first contributor was Elihu Root. For 10 points, name this publication that published a version of the Long Telegram by George Kennan known as the "X Article," and several other articles on international relations.
ANSWER: **Foreign Affairs**

8. In the late 1930's, this musician recorded a number of solo pieces, including "The Crave" and "Don't You Leave Me Here," for General Records, which was released on an album titled for "Memories" of his home city. During a recording session, this bandleader once brandished a pistol against the trombonist Zue Robertson, because he refused to play the melody correctly. This man often played in a duet with King Oliver, who played the cornet when performing this man's standard "Froggie Moore." The banjoist John St. Cyr was a part of this man's group Red Hot Peppers, which would often perform the "Black Bottom Stomp," a standard he composed. In an interview, this man claimed that his predecessor Buddy Bolden played ragtime, while he himself invented jazz. For 10 points, name this early New Orleans pianist who composed the "King Porter Stomp," and who took his name from a slang term referring to female genitalia.
ANSWER: "**Jelly Roll**" **Morton** [accept either; or Ferdinand Joseph **LaMothe**; or Ferdinand **LaMenthe**]

9. A character created by this author buys a copy of *The Lives of the Saints* with money earned making boots. That character refuses to reveal who he saw digging an escape tunnel, even though the digger was responsible for planting a bloody dagger in his bag and framing him for murder years earlier. A character created by this author cuts off his own finger in order to thwart the seductive efforts of Makovkina, who joins a convent in response. Another of this man's characters falls to his death while clearing snow from a roof, shortly after his father prevents him from marrying the cook Ustinya. This author of "God Sees the Truth, But Waits" and "Father Sergius" wrote a story in which a prophetic dream is confirmed when, despite barely making it back to the Bashkirs by sunset, Pahom collapses and dies, after which his servant buries him under six feet of earth. For 10 points, name this author of "Alyosha the Pot" and "How Much Land Does a Man Need?".
ANSWER: Leo **Tolstoy** [or Lev Nikolayevich **Tolstoy**]

10. This thinker rebutted the arguments of Michael McCloskey and Howard Egeth in "Silence is Not Golden," an article stating that psychologists had a duty to testify in courts as experts. Various participants evaluated colorful advertisements featuring Bugs Bunny at Disneyworld in an experiment conducted by this researcher. With John Palmer, this social scientist found that using the word "smashed" instead of similar words, such as "collided," "bumped," or "contacted," led to people providing higher guesses about the speeds of colliding cars. In another study, this psychologist had interviewees fill out a booklet about four childhood events before informing them that one of them is false–that false event involved the subject being "lost in the mall." For 10 points, name this psychologist whose research discusses the impact of false memories.
ANSWER: Elizabeth **Loftus**

11. One religious leader in this modern nation was reportedly tossed into a furnace by his captors, but magically had a tea party in the furnace with the prophet Muhammad. Then, he jumped off his captors' ship, and a prayer mat appeared on the ocean surface to save him. Another religious leader from here, Malick Sy, became the leader of its Tijanist school, while the Layene sect originated in this nation's village of Yoff. The sighting of a Black Madonna at the Natural Reserve of Popenguine in this modern country led that town to be a pilgrimage site. Its Mouride movement is centered on its foremost religious building, the Great Mosque of Touba, built by its famed marabout Amadou Bamba. This nation, home to the Four Communes during colonial times, has its Christian population concentrated in the south in the Casamance region. The Door of No Return is a monument at its House of Slaves on Gorée Island. For 10 points, name this African nation whose Serer religious tradition was reflected in the name of its president Léopold Senghor.
ANSWER: Republic of **Senegal**

12. In this play's last scene, the main character assumes the pose of Rodin's *The Thinker* and tells a companion that we are "both members of de same club." The fifth scene of this play is set in a street where one can see a jeweler's shop featuring items whose prices are intermittently displayed in large electric characters. In its opening scene, Paddy sings "Oh, whiskey is the life of man!" repeatedly to encourage the main character to drink. The main character is imprisoned at Blackwell's Island after striking a gentleman on Fifth Avenue, though he later escapes and goes to an IWW office. However, he causes alarm when he expresses a desire to blow things up with dynamite. During a visit to the stokehold of a ship, a rich girl named Mildred Douglas calls the protagonist a "dirty beast". A scene in which a huge gorilla hugs Yank to death ends, for 10 points, what expressionist drama of Eugene O'Neill that is titled for a primate?
ANSWER: The **Hairy Ape**

13. Further reactions on the products of this process are inhibited by indolizidine alkaloids such as australine, castanospermine, and swainsonine. A defect in this process is the cause of Walker-Warburg syndrome. A defect in the PMM2 gene causes another disorder of this process called CDG-Ia. The antibiotic tunicamycin is a direct inhibitor of this process. An enzyme complex involved in this process contains two ribophorin subunits and bonds to the TRAP complex and Sec61 in the translocon. In one mechanism for this process, the OST complex transfers a certain molecule from dolichol to an asparagine residue. This process is used to tag proteins that are bound for the lysosome with M6P. Whether this process involves the formation of a bond with oxygen or nitrogen determines whether it is "O-linked" or "N-linked." For 10 points, name this post-translational modification in which molecules like mannose and glucose are bonded to proteins.
ANSWER: **glycosylation**

14. This dynasty consolidated power after its ascent by convincing the officer Liu Jinzhong (loo jin-zhong) to betray his master, leading to the death of a peasant leader called the Yellow Tiger. This dynasty further solidified its rule by defeating the army of Shi Kefa, a calligrapher who set up the Prince of Fu as a rival emperor and who insisted on being beheaded rather than joining this dynasty. An early leader of this dynasty protested the slaughter of his family in the Seven Grievances. After the previous dynasty's ruler hanged himself on a tree in the imperial garden, this dynasty's rise was aided by the defection of the general Wu Sangui, leading to a victory at the Battle of Shanhai Pass. This dynasty, which thusly defeated the rebel general Li Zicheng, then installed its first emperor on orders of the regent Dorgon. For 10 points, name this dynasty that prospered under the Kangxi Emperor, after it supplanted the Ming.
ANSWER: **Ching** Dynasty [or **Qing**; or **Manchu**]

15. A portrait at the Met by this artist features the breeches of its subject folding into a menacing mask-like face, while a pair of grotesque heads are carved onto a chair and table. In another of his portraits, the wife of sculptor Bartolomeo Ammannti is depicted in profile, and she uses two of her slender fingers to touch a book of Petrarch's sonnets. This artist's portrait of Dante features him holding an open page of his masterpiece as he gazes at Mount Purgatory. This artist of *Portrait of Laura Battiferri* depicted Cosimo I in silver armor, as he was the court painter for the Medicis until his death. After the capture of Tunis, he made a portrait of a Genoese ruler as a Roman god. He included a greybeard on the upper right of a painting in which he holds a blue fabric, while a love goddess holds a gold apple and kisses her son. For 10 points, name this mannerist artist of *Andrea Doria as Neptune* and *Venus, Cupid, Folly and Time*.
ANSWER: Il **Bronzino** [or **Agnolo di Cosimo**; or Agnolo **Bronzino**]

16. A person in this poem weaves a metaphorical net by "twining ("twy-ning") subtle fears with hope", while another person is criticized for living "reserved and austere" as if his "highest plot" was "to plant the bergamot". This poem says that "The Pict no shelter now shall find" within the "parti-colour'd mind" of its subject, who will prove to be as Caesar and Hannibal were to Gaul and Italy. An extended image in this poem compares its subject to "three-fork'd lightning, first / breaking the clouds where it was nurst" and then blasting through the laurels on "Caesar's head". Its penultimate stanza urges the title figure, "the War's and Fortune's son," to "march indefatigably on". This poem describes how a man who "could not cease / in the inglorious arts of peace" engineered the execution of Charles I. For 10 points, name this poem written in reserved celebration of the accomplishments of the Lord Protector by Andrew Marvell.
ANSWER: "An **Horatian Ode** upon Cromwell's Return from Ireland"

17. The second ruler of this name had his palace expanded by court architect Raimondo D'Aronco and handled two uprisings at Sasun, as documented by Reverend Cyrus Hamlin. According to legend, the first ruler of this name took a girl named Aimée du Buc de Rivéry as his consort after she was captured by pirates - she then took the name Nakshidil and introduced French customs to his court. During the year that ruler of this name ascended to power, his army was decimated at the Battle of Kozluca and he had to consent to the Treaty of Kuchuk Kainarji. The second ruler of this name moved his seat of government to Yildiz Palace. The Dashnak Association attempted to assassinate that ruler with a bomb-loaded carriage. That ruler of this name set up an absolute monarchy, bringing an end to the First Constitutional Era and the Tanzimat reforms. That ruler was bestowed a nickname by William Gladstone in reaction to his policies in Armenia. For 10 points, give this name of an Ottoman ruler called the "Red Sultan," who was deposed in 1909 through the effort of the Young Turks.
ANSWER: **Abdul Hamid** [or **Abdu'l-Hamid**; or **Abdulhamit**; or **Abd Al-Hamid**]

18. When knots are inserted into a curve or a tensor product surface, the Oslo algorithm modifies these functions to keep the model up-to-date. A method for evaluating these kinds of functions at a given point is given by De Boor's algorithm. The Kochanek-Bartels type of these expressions feature bias and continuity parameters so that tangents can be altered; by setting all of those parameters to zero, those expressions become the simpler Catmull-Rom type of these functions. A set of control points and a knot vector are used to define the non-uniform type of these basis functions–that type of them is often called a NURBS and is used in computer assisted design. These objects are called "natural" if their curvature equals zero at their boundaries, and their third order, or "cubic" variant is used in constructing Bézier curves. A piece of metal used by drafters gives its name to, for 10 points, what piecewise-defined polynomials often used in interpolation?
ANSWER: **spline**s [or **basis spline**s; or **b-spline**s; prompt on "**NURBS**"]

19. Two of the ten ancient tropes of this concept are "Sense organs have different constituents" and "Different animals manifest different modes of perception." In "An Apology for Raymond Sebond", Michel de Montaigne argues that this philosophical notion, which is characterized by the sentiment "I do not move," provides the best possible means of attaining happiness. In his *Outlines of Pyrrhonism*, Sextus Empiricus argues that by adopting Aenesidemus's tropes of this concept, one can be lead to a state of *ataraxia*.In its original sense, this philosophical term refers to a state of unknowing posited by Stoic philosophers; it was later used by another philosopher as a method of phenomenological reduction sometimes called bracketing. For 10 points, give this Greek term that, in the philosophy of Edmund Husserl, refers to the suspension of belief when analyzing true phenomena.
ANSWER: **epoché** [or **epokhē**; prompt on "**skepticism**"]

20. This place served as a dungeon for the Anabaptist farmer Fritz Erbe, whose signature was found carved on its walls in 1925. While living here, St. Elizabeth of Hungary built a hospital on its grounds, though she was allegedly forced out by Henry Raspe. During a festival at this location, a group of students lit a bonfire to burn items like a corporal's cane, a pigtailed military wig, and a leather cavalry corset–that festival led two years later to the adoption of the Carlsbad Decrees. This location was also home to a contest in which the sorcerer Klingsor summoned a demon, but was still bested in poetic skill by Wolfram von Eschenbach. That contest, the Sangerkrieg, became the basis for Wagner's opera *Tannhauser*. Another man was carried to this place in a burlap sack by Frederick the Wise, and thereafter translated the New Testament. For 10 points, name this Thuringian castle where Martin Luther was exiled after the Diet of Worms.
ANSWER: **Wartburg** Castle

Tiebreaker

21. The addition of hexa-methyl-ene-tetramine and water to an aryl halide can produce these compounds, which can also be produced from the hydrolysis of an oxazine. The Sommelet reaction and the Meyers synthesis create these compounds, whose simplest version is used alongside sulfuric acid in ecstasy testing kits based on the Marquis reagent. Aryl versions of this functional group can be synthesized by adding carbon monoxide, hydrochloric acid, and aluminum trichloride to a benzene ring in a variant of the Friedel-Crafts reaction named for Gattermann and Koch. These compounds produce a peak at around 9-10 ppm in proton NMR. PCC will selectively oxidize primary alcohols to these compounds, which can be oxidized again to form carboxylic acids. For 10 points, name these compounds that contain a terminal carbonyl group, which are contrasted with ketones.
ANSWER: **aldehyde**s

1. Answer the following about the history of Amish people in the United States, for 10 points each.
[10] The Peachey sect formed around 1910 and opposed the Old Order's decision to ban the telephone, invented by this Scotsman in 1876 with his assistant Thomas Watson.
ANSWER: Alexander Graham **Bell**
[10] The first Amish settlement in the New World was named for being located on this creek, on the edge of the Blue Mountains in Pennsylvania. First established in 1739, the family of Jacob Hochstetler was massacred here in 1757 during the French and Indian War.
ANSWER: **Northkill** Creek [or the **Northkill** Settlement]
[10] In 1972, this Old Order Amish man became the namesake of a Supreme Court case after he and Wallace Miller were fined five dollars each by the state of Wisconsin for refusing to send their kids to high school. The Supreme Court overturned that fine on First Amendment grounds.
ANSWER: Jonas **Yoder** [or Wisconsin v. **Yoder**]

2. Identify the following British authors who wrote about the death of Princess Diana, for 10 points each.
[10] News of Diana's death short-circuits a brewing love triangle in *Home Truths*, a novella by this author of *The British Museum is Falling Down* and such campus novels as *Changing Places*.
ANSWER: David **Lodge** [or David John **Lodge**]
[10] In *Untold Story*, the most recent novel by this author, Diana fakes her death and lives as an expat named "Lydia" in a small American town. She followed up her 2003 debut with a 2006 novel about a Portuguese village called *Alentejo Blue*.
ANSWER: Monica **Ali**
[10] This man described Diana taking her place in the "iconography of the crash" in his essay "A Mirror For Ourselves." His novels include *Money* and *Time's Arrow*.
ANSWER: **M**artin **Amis** [or **M**artin Louis **Amis**; prompt on partial answers]

3. Answer the following about volcanic eruptions, for 10 points each.
[10] Volcanic eruptions produce this substance, which can vary in size. Tiny particles of this material are called, ash, larger ones are called lapilli, and big chunks of it are called bombs.
ANSWER: **tephra**
[10] Tephra of all size is produced during this type of volcanic eruption, in which rapidly expanding steam bubbles from a gas slug induces an eruption. These eruptions never develop a sustained eruption column and are one of the two types of eruptions that creates a scoria cone.
ANSWER: **Strombolian** eruption
[10] This term refers to the event in which a volcanic eruption causes the melting of glacial ice, which in turn leads to the creation of a slushy lahar. A 1996 event of this sort at Grimsvötn destroyed a highway.
ANSWER: **jökulhlaup**

4. An anthology of essays that considers these types of questions is Niall Ferguson's *Virtual History*, which includes Diane Kunz's piece "Camelot Continued." For 10 points each:
[10] Name these types of conditional statements, which include "What if John F. Kennedy had lived?" and "What if Charles I had avoided the Civil War?" David Lewis modelled them using possible world semantics.
ANSWER: **counterfactual**s
[10] In his book *Pensées*, this philosopher counterfactually suggested that the whole world would have been different if Cleopatra's nose had been shorter.
ANSWER: Blaise **Pascal**
[10] This book argues against Quentin Meillassoux's use of counterfactuals in using physical laws to determine the "arche-fossil." This book by Ray Brassier uses the Churchlands' argument to suggest that consciousness is non-existent, thus implying that humans always have been and always will be meaningless.
ANSWER: **Nihil Unbound**: Enlightenment and Extinction

5. The best known leader of this group was Klaus Stortebeker, and they became known as the Likedeelers after their wartime activities subsided. For 10 points each:
[10] Name these pirates that supplied food to the besieged city of Stockholm. They operated in the Baltic Sea from about 1390 to 1440, at the behest of the Dukes of Mecklenburg in their war against Denmark.
ANSWER: **Victual** Brothers
[10] In 1392, the Victual brothers attacked the town of Lubeck because it was the only Danish-affiliated member of this trade confederation, which originated with Henry the Lion.
ANSWER: **Hanseatic** League [or **Hansa**; or **Hanse**]
[10] In 1400, Stortebeker and his crew were beheaded after they were captured in a sea battle at this site. This site also names a naval battle where Reginald Tyrwhitt and Roger Keyes planned an attack on German destroyers in 1914.
ANSWER: **Heligoland** [or **Helgoland** Bight; or **Helgoland** Bay]

6. This composer's oboe concerto begins with a playful "tuning game," which confuses many audience members into thinking the piece has not yet begun. For 10 points each:
[10] Name this contemporary composer, who won the 2001 Pulitzer for his second symphony. His first symphony was inspired by the AIDS crisis, and he adapted a violin concerto for Joshua Bell from his score for the film *The Red Violin*.
ANSWER: John **Corigliano**
[10] Pierre de Beaumarchais tries to appease the ghost of Marie Antoinette in this only opera by John Corigliano, in which Figaro causes mischief from an opera within the opera and tries to save Marie from her beheading.
ANSWER: The **Ghosts of Versailles**
[10] Stanley Drucker premiered Corigliano's popular 1977 concerto for this woodwind instrument. Aaron Copland's jazz-influenced concerto for this instrument was commissioned by Benny Goodman.
ANSWER: **clarinet**

7. The standard model for the macro labor market uses this approach, since it predicts frictional unemployment rather than perpetual market clearing. For 10 points each:
[10] Name this approach considered to have been founded by George Stigler to show how advertising benefits consumers. Many labor models of it feature a function that takes vacancies and unemployment as inputs.
ANSWER: **search**-and-matching [prompt on "**match**ing" or word forms thereof]
[10] This economist showed that the general equilibrium of Stigler's search model featured no price dispersion. He also developed a coconut model of search with a multiplicity of equilibria in output and employment.
ANSWER: Peter **Diamond**
[10] Search theory models situations in which agents don't have a perfect set of this concept. Michael Spence wrote a paper about solving the problem of this thing being asymmetric between employer and potential employee.
ANSWER: **information**

8. Zdenek Fibich created an operatic adaptation of this play, which is almost always published along with its prologue "On the Employment of Chorus in Tragedy". For 10 points each:
[10] Name this play in which the feuding Don Manuel and Don Cesar both end up dead after falling in love with their estranged sister Beatrice.
ANSWER: The **Bride of Messina** [or Die **Braut von Messina**]
[10] In this play by the author of *The Bride of Messina*, Terzky and Illo talk the protagonist into negotiating the Swedes. Its title characters are Octavio, secretly a spy for the emperor, and Max, who falls in love with Thekla, the main character's daughter.
ANSWER: The **Piccolomini** [or Die **Piccolomini**; prompt on "**Wallenstein**" or "**Wallenstein I**"]
[10] *The Piccolomini* is the second part of this German dramatist's *Wallenstein* trilogy. He also wrote *The Robbers* and *Wilhelm Tell*.
ANSWER: Friedrich **Schiller** [or Johann Christoph Friedrich von **Schiller**]

9. The ruler of this city, Hunac Ceel, supposedly convinced the ruler at Chichen Itza to steal the bride of Izamal, inciting a war that depopulated Chichen Itza. For 10 points each:
[10] Name this Mesoamerican site in the Yucatan that formed a namesake league of 16 city-states around 1280 AD under the Cocom family, which lasted until the revolt of the Xiu family.
ANSWER: **Mayapan** [or **Máayapáan**]
[10] The Southern Maya heartland contains potbelly architecture marked by large stone heads, similar to those of this much earlier civilization which had centers at La Venta and San Lorenzo.
ANSWER: **Olmec** civilization
[10] In addition to using other material like flint and obsidian, Mayan aristocrats conducted human bloodletting rituals using the spine of this aquatic creature. It's depicted in a Yaxchilan relief where a man pierces his penis with one of these spines, while a woman jabs a thorny vine through her tongue.
ANSWER: **stingray**

10. In the Hartree-Fock method, an initial set of these constructs is used to calculate an effective potential, which is then used to calculate a new set of these constructs, and so on, until these constructs and their energies are self-consistent. For 10 points each:
[10] Name these constructs that describe the wavefunctions of electrons in a molecule. They come in "bonding" and "antibonding" types, which are denoted with symbols such as sigma and sigma-star.
ANSWER: molecular **orbitals**
[10] The Hartree-Fock method is an example of this type of method in computational chemistry which finds its solution using only quantum mechanics. No empirical parameters are used.
ANSWER: **ab initio** methods
[10] This *ab initio* method works by writing the exact Hamiltonian as the sum of the Hartree-Fock Hamiltonian and the product of an external potential and a dimensionless parameter symbolized lambda. The energies and wavefunctions are then written as a power series in lambda.
ANSWER: **Møller-Plesset** perturbation theory [or **MP2**]

11. Answer the following about the photographer Paul Strand, for 10 points each.
[10] This photographer and principal member of the Photo-Secessionist movement displayed some of the earliest work of Paul Strand at the 291 Gallery, which he founded and managed.
ANSWER: Alfred **Stieglitz**
[10] While visiting this art colony in New Mexico, Paul Strand took the photograph *Church*. Mabel Dodge Luhan patronized it, and invited Steiglitz, Strand, and O'Keefe to visit this place named for an ancient pueblo.
ANSWER: **Taos** art colony
[10] The post-1915 work of Paul Strand is an example of this style of photography, in which objects are presented "without subterfuge or adornments." This term was most likely first used by the critic Sadakichi Hartmann, in a *Camera Work* article calling on photographers to produce works in this style.
ANSWER: **straight** photography

12. After he retired to live as an anchorite in the wilderness, a princess was brought to this man's cave by a tornado, and when he could not resist seducing her, he panicked and pushed her off a cliff. For 10 points each:
[10] Name this saint who then lived like a beast crawling on all fours until he found that same princess alive and suckling his child. That legend is known as his penance.
ANSWER: St. John **Chrysostom** [prompt on "St. **John**"]
[10] Chrysostom's enemies, like empress Eudoxia and Theophilus of Alexandria, convoked this synod in 403 AD headed by Severian, the Bishop of Gabala. Chrysostom refused to attend this synod and was deposed as patriarch, but a crowd in Constantinople forced the empress to reconsider.
ANSWER: Synod of the **Oak**
[10] John also controversially supported a group of four monks called the Tall Brothers, who came from this modern country. The largest Christian church of this country is the Coptic Church, and it is where St. Antony the Great wandered the desert.
ANSWER: **Egypt**

13. In the first installment in this series, Lester Mead creates a grower's cooperative, while in its final installment, Octavio Sansur organizes a general strike to break an organization's stranglehold over its workers. For 10 points each:
[10] Identify this series of novels that includes *The Cyclone*, sometimes translated as *The Strong Wind*, as well as its final novel, *The Eyes of the Interred*.
ANSWER: The **Banana** Trilogy
[10] *The Banana Trilogy* was penned by this Guatemalan author, who wrote the dictator novel *El Senor Presidente*.
ANSWER: Miguel Angel **Asturias**
[10] This other Guatemalan author wrote unconventional short stories, such as "The Concert," which is entirely written in the future tense, and the one-sentence long story "The Dinosaur," which reads in its entirety "When he woke up, the dinosaur was still there."
ANSWER: Augusto **Monterroso**

14. These membranes consist of a thin layer of mesothelial cells on top of a surface of connective tissue. For 10 points each:
[10] Name these types of membranes in the human body which enclose namesake cavities and secrete a namesake lubricating fluid. Examples of them include the peritoneum and the pericardium.
ANSWER: **serous** membranes
[10] This condition occurs when excess fluid builds up in the space between the pericardium and the heart, leading to excess pressure on the heart inhibiting its function.
ANSWER: cardiac **tamponade** [or pericardial **tamponade**]
[10] Another serous membrane called the pleura surrounds these organs, which contain bronchioles and alveoli.
ANSWER: **lung**s

15. This man was apparently shot by Otto Applequist, his rival for the affection of Hilda Erickson, which led him to show up at a doctor's office in Salt Lake City with a gunshot wound and then be convicted of murdering a man named John Morrison. For 10 points each:
[10] Name this Swedish labor activist who, before being executed in 1915, wrote a lot of songs for the IWW such as "The Preacher and the Slave," in which he coined the phrase "pie in the sky."
ANSWER: Joe **Hill** [or Joel Emmanuel **Hagglund**; or Joseph **Hillstrom**]
[10] This founder of the IWW known as "Big Bill" had far better luck in his trial, in which he was acquitted of ordering the murder of former Idaho governor Frank Steunenberg.
ANSWER: William Dudley "Big Bill" **Haywood**
[10] Hill's song "The Rebel Girl", sung at his funeral, was a tribute to this female IWW organizer who was a founding member of the ACLU and wrote *The Alderson Story: My Life as a Political Prisoner* after she was put in prison.
ANSWER: Elizabeth Gurley **Flynn**

16. A critic called this artist the "Prince of Mysterious Dreams." For 10 points each:
[10] Name this painter of Japanese-influenced scenes, such as *Vase with Japanese Warrior*. In *The Eye like a Strange Balloon Moves towards Infinity*, from his lithographic series *To Edgar Poe*, he depicted an eyeball embedded in a hot-air balloon.
ANSWER: Odilon **Redon** [or Bertrand-John **Redon**]
[10] Odilon Redon, along with Gustave Moreau and Fernand Khnopff, were members of this school of art, which emphasized depicting the dream world.
ANSWER: **symbol**ism
[10] This draftsman and teacher of Odilon Redon was a major influence on the Symbolists. He often made scenes depicting tormented landscapes, such as *The Comedy of Death,* which features birds with rat heads and a terrified Jesus Christ fleeing away into the sky as skeletons menacingly laugh at him.
ANSWER: Rodolphe **Bresdin**

17. Answer the following about unusual mythological animals, for 10 points each.
[10] In the *Popol Vuh*, Hunahpu and Xbalanque hide in their blowpipes during the night they spend in the house of these creatures, who are led by the god Camazotz. The discovery of bloodsucking South American animals of this type led to their association with vampires.
ANSWER: **bat**s [or **Chiroptera**]
[10] These single- or dual-horned Chinese creatures were associated with giraffes after the voyages of Zheng He. The Four Benevolent Animals in the Yellow Emperor's garden were the phoenix, the turtle, the dragon, and one of these deerlike creatures.
ANSWER: **qilin** [or **kirin**; or **ch'i-lin**; or **kilin**]
[10] Ovid's *Fasti* relates a story in which Cranae uses the *arbutus* plant to heal the infant Procas from wounds caused by these flesh-eating owl-like birds. They lend their name to the genus of "earless" owls.
ANSWER: **strix** [or **striges**; prompt on "**screech-owl**s"]

18. Answer the following about the tar-producing Finnish province of Ostrobothnia, for 10 points each.
[10] This war began in 1596 when a group of peasants, led by Jaakko Ilkka and centered in Ostrobothnia, rose up against Sigismund, the son of Johan II. The peasants in this war were supported by future king Charles IX, who they called the "Good King," and it led to the Abo Bloodbath.
ANSWER: **Club** War [or the **Cudgel** War; or **Nuija-sota**; or **Klubbe-kriget**]
[10] Around 1670, Ostrobothnia witnessed one of these events after the Devil's Sabbath allegedly caused some namesake troublemakers to fly into Finland. Mary Walcott was persecuted in 1693 during this type of event in Salem, Massachusetts.
ANSWER: **witch hunt**s [or **witch persecution**s; or obvious equivalents]
[10] The "ABC-book" written by this bishop of Turku was widely distributed in Ostrobothnia. Often dubbed the father of Finnish literature, this man brought the Lutheran faith to Finland and died negotiating a treaty with Russia.
ANSWER: Mikael **Agricola**

19. This quantity is given by half the sum of the dot product of the E and D fields and the dot product of the B and H fields. For 10 points each:
[10] Name this quantity that equals half the square of the electric field times the permittivity for the electric field and half the square of the magnetic field divided by permeability for the magnetic field.
ANSWER: **energy density** [do not accept "energy" or "density"]
[10] The time derivative of the energy density of an EM field appears in this man's theorem describing energy transfer in EM fields. He names a quantity proportional to the cross product of the electric and magnetic fields that represents the energy density of an EM wave.
ANSWER: John Henry **Poynting**
[10] The electromagnetic energy density appears on the main diagonal of this three by three matrix, which gives the momentum flux density caused by an electromagnetic field.
ANSWER: **Maxwell stress tensor** [prompt on "**stress tensor**"; do not accept "stress-energy tensor"]

20. This book's narrator travels with the herbalist Almira Todd to her native Green Island, where she picks a sprig of pennyroyal and listens to the lectures of Mrs. Blackett. For 10 points each:
[10] Identify this collection of regional sketches, which is entirely set in the fishing village of Dunnet Landing.
ANSWER: The **Country of the Pointed Firs**
[10] This Maine-born author of the oft-anthologized short story "A White Heron" wrote the stories collected in *The Country of the Pointed Firs*.
ANSWER: Sarah Orne **Jewett**
[10] This character from *The Country of the Pointed Firs* tells the narrator a tale about a town of ghosts living near the North Pole. He shares his surname with a trilogy of novels by another author that contains *The Chainbearer* and *The Redskins*.
ANSWER: Captain **Littlepage** [or the **Littlepage** Manuscripts]