**CHICAGO OPEN 2017: -.. --- -. - / ..-. --- .-. --. . - / - --- / -.. .-. .. -. -.- / -.-- --- ..- .-. / --- ...- .- .-.. - .. -. .**

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**Packet by Matt Bollinger, Will Nediger, Auroni Gupta, and Will Alston**

1. This man titles--and is the speaker of--a poem, in which he states “I jumped from the tower of Chapultepec / into the sea of fame”; that poem by the Great “Corky” Gonazles opens with this character opining that he is “lost in a sea of confusion.” He is imagined to be born in Chile in Pablo Neruda’s only play, which is about the “splendor and death” of this man. In a novel, a journalist writes articles about this historical figure under the name Jacob Freemont; the protagonist of that novel is mistaken for a gay man by Joe Bonecrusher’s travelling brothel while looking for this man. Eliza Sommers finds this historical figure’s shrunken head in San Francisco at the conclusion of the novel *Daughter of Fortune*. A book by John Rollin Ridge about this man inspired Johnston McCulley to create the nobleman Zorro. For 10 points, name this hero of the California Gold Rush, known as the “Mexican Robin Hood”.

ANSWER: Joaquin **Murrieta** Carrillo [or Joaquin **Murieta**]

2. This historian’s analyses of Abraham Lincoln include a 1982 Fortenbaugh Memorial Lecture titled “Lincoln’s Philosophic Vision” and a book about Lincoln’s “Literary Genius.” With Lionel Trilling, he taught the class “The Colloquium of Important Books” and advocated the core curriculum at Columbia; there, protests broke out after he published an attack on U.S. schools entitled *The American University*. The first two sections of one of his books open by analyzing the Protestant revolution and the “Monarch’s Revolution,” That book uses the abbreviation c, as in 15c, to designate centuries. At age 93, this author of the introductory book *The Modern Researcher* published his magnum opus, which examines modern cultural decline at the close of “500 Years of Western Cultural Life.” For 10 points, name this French-American historian, the author of *From Dawn to Decadence*.

ANSWER: Jacques **Barzun** [or Jacques Martin **Barzun**]

3. Complexes with this ligand tend to undergo substitution reactions where they simultaneously lose a halide and are de-protonated by a hydroxide, according to the SN1CB mechanism. Four of these ligands are bonded to copper in a reagent used to dissolve cellulose and named for Schweizer. A bridging pyrazine ligand, ten of these ligands, and two ruthenium atoms comprise a complex used to study inner-sphere electron transfer and named for Creutz and Taube. Alfred Werner did his pioneering work on coordination chemistry with a compound consisting of six of this ligand coordinated to copper. Two of these ligands and two chloride ligands are present in cisplatin. Because this neutral ligand is slightly stronger than water on the spectrochemical series, metal-aquo complexes are rare. For 10 points, name this compound, which is oxidized in the Ostwald process to produce nitric acid.

ANSWER: **ammonia** [or **ammine** ligand (pronounced the same as amine), accept **NH3**; do not accept or prompt on “imine”]

4. One monument built by this ruler was originally flanked by two libraries and contains reliefs that Carol Twombly used as the basis for a typeface. In the 12th century, several militia towers were built atop a semi-circular brick market complex that was constructed during this ruler’s reign; that building on a hill is often considered the world’s first shopping mall. The tallest rock relief in Europe depicts an enemy of this ruler, and can be found nearby a natural feature called the Iron Gate. The last imperial forum, which was built under this ruler, contained the Basilica Ulpia. After a fire, this emperor began, but did not finish, the reconstruction of Agrippa’s Pantheon. Sixtus IV added a statue of Saint Peter to a sculpture commissioned by this ruler, which was designed by Apollodorus of Damascus. For 10 points, name this emperor whose conquest of Dacia is commemorated by his namesake column in Rome.

ANSWER: **Trajan** [or Marcus Ulpius **Traianus**]

5. In a 2015 article on “Razing” this method’s formulator, Harold Anthony Lloyd unfavorably compares it to “Cartesian dualism” and claims that the method of “framing” shows the faults of this method. Grant Gilmore argued that this method’s formulator made decisions fit a Procrustean bed in his book *The Death of Contract,* claiming that the inventor of this method practically invented contract law by trying to reduce it down to scientific principles. This method’s formulator was made a dean by Charles Eliot and implemented it in part by supposedly being the first to institute “blind grading.” This methodology devised by Harvard professor Christopher Columbus Langdell applies the “Socratic Method” to texts that feature material like the “Hairy Palm” decision. For 10 points, name this widely-used method of teaching in law school, in which judicial opinions are read from the namesake texts.

ANSWER: **casebook** method [accept the **case** method or **case law** method; accept the Legal **Socratic Method** before “Socratic”]

6. After this politician voted against appropriations for HUAC, his early rival Homer Adkins purchased ads accusing him of coddling Commies. The CBS documentary *The Selling of the Pentagon* was based on this man’s anti-Vietnam book *The Pentagon Propaganda Machine*. He entered the Senate by unseating Hattie Carraway, the first woman ever elected there. He interrupted a NATO debate on nuclear arms to protest trade sanctions on U.S. chicken, as chairman of the Senate Foreign Relations Committee. He was defeated in a primary by his state’s then-governor Dale Bumpers. Known for his 83-day filibuster against the Civil Rights Act, in 1946, he introduced legislation to create a program under which the Bureau of Educational and Cultural Affairs sponsored American students. For 10 points, name this Arkansas Senator who names a grant for international educational exchanges.

ANSWER: James William **Fulbright** [or J. William **Fulbright**]

7. On a website called “the truth about” this woman, a man named Richard Wagner details his theory that this woman’s most famous creation is actually a puzzle which uses Francis Bacon’s numerological methods to hide Rosicrucian and Masonic symbols. Supposedly, this woman was ridden with guilt from the death of her daughter Annie from marasmus malnutrition; that caused her to consult a possibly non-existent spiritualist named Adam Coons, who inspired her obsession with the number 13; for example, she added a thirteenth light to a chandelier and used windows that had 13 panes while constructing a landmark named for her. When her husband died, this woman had a building constructed that was filled with oddities, such as staircases that lead to nowhere and windows between rooms. For 10 points, name this heiress to a firearms company who built a “mystery house” in San Jose.

ANSWER: Sarah Lockwood **Winchester** [or Sarah Lockwood **Pardee**]

8. A study by Peter Wiseman, the possible model for Albus Dumbledore, argued that this event was originally close to the story of the Battle of Sentinum before distortion by Patrician sources. This event is commemorated by a holiday in which Romans chanted “With these beans I redeem me and mine” nine times after throwing those beans behind their shoulders. This event, which is the origin of the *Lemuria* ghost-dispelling festival, occurred by the use of a spade by a man named Celer in a version invented by Ovid. This event was the escalation of a contest in which one participant claimed to have seen six animals earlier than the other, who claimed to have seen twelve. This action was taken as retribution for its victim’s insolence in jumping over the newly-begun walls of Rome. For 10 points, identify this violent action that in most accounts was perpetrated by Romulus against his brother.

ANSWER: Romulus’s or Celer’s **murder** of **Remus** [accept obvious equivalents that mention **Remus being killed**]

9. The sine function of the Julian Date minus the current epoch appears in Knocke et al's formula for calculating the contribution of this phenomenon from the Earth. This phenomenon’s effects on bodies is often studied using Rodriguez-Solano's adjustable box-wing model. The CERES satellite provided the first measure of a form of this phenomenon caused by the Earth, while many models of it include a conical "shadow function" to quantify how much Earth contributes against it. This phenomenon is modeled using the constant 1353 watts per meter squared in GWS satellites. This phenomenon affects the trajectory of large asteroids in the YORP effect. Interstellar dust is subject to this phenomenon in Poynting-Robertson drag, though on larger bodies, it causes an orbital perturbation. For 10 points, name this physical force caused by EM waves, and which can be used to power a solar sail.

ANSWER: **radiation pressure** [prompt on radiation; prompt on pressure]

10. A poem dedicated to T.P. Flanagan analogizes “our unfenced country” to one of these areas “that keeps crusting / Between the sights of the sun.” The speaker observes Edmund Spenser, “encroached upon by / geniuses who creep / out of every corner” in a poem set in one of these areas; another poem, which begins: “I lay waiting / between turf-face and demesne wall, / between heathery levels / and glass-toothed stone,” is titled for a “Queen” of one of these places. An elegy for a “nameless, terrible” girl in one of these places who “outstar[es] / What had begun to feel like reverence,” is titled “Strange Fruit.” The speaker's “grandfather cut more turf / Than any other man” in one of these places in a poem that begins: “Between my finger and my pen / The squat pen rests; snug as a gun.” The 1975 collection *North* includes poems set in, for 10 points, what peat-filled areas found in Seamus Heaney's poetry?

ANSWER: **bog**s [or **swamp**s; or **marsh**es]

11. After one of this artist's students destroyed his own painting depicting the Widow of Nain made for a contest, this artist broke the news to his student that the judges were about to award him the first prize. That student compared this artist's influence to the blinding radiance of the title general of the painting *Marius at Minturnae*. A group of painters who were once part of this artist’s workshop were led by a so-called “Agamemnon” and were called “The Bearded Ones” ,or Barbus. A painter in this artist's workshop made a historical work in which Ossian receives the ghosts of France's fallen heroes, and an illustration in which Chactas holds his fallen lover after she has poisoned herself in a cave, *The Death of Atala.* Jean Germain Drouais and Anne-Louis Girodet were part of the workshop of, for 10 points, what neoclassical artist, for whom Girodet helped create *The Oath of the Horatii?*

ANSWER: Jacques-Louis **David**

12. A set of these molecules built from L-ribose units are enantiomers of biological polymers of D-ribose, and are consequently prefixed with “Spiegel,” the German word for mirror. One of these molecules, HD22, improves upon the TBA one by adding a duplex motif to its G-quadruplex structure, allowing it to recognize a different exosite of thrombin. These molecules are usually generated by creating and subsequently filtering an oligonucleotide library in a process called SELEX. Altering a nucleotide in position 74 of a domain named for these molecules allows the purine riboswitch to toggle between guanine and adenine sensitivity. Because they can infiltrate tissues and be modified at either the 5’ (“5-prime”) or 3’ (“3-prime”) end, these molecules are sometimes preferred to monoclonal antibodies in drug design. For 10 points, name these synthetic oligonucleotides or peptides that are specifically designed to bind to target molecules.

ANSWER: **aptamer**s [prompt on oligonucleotides until mentioned]

13. The journalist William Nessen came to support this political cause after his best man Marhaban was murdered, as recounted in the documentary *The Black Road*. A political party devoted to this cause was founded by a man who lived much of his life in exile in Sweden, and who was accompanied by his minister of health Zaini Abdullah. Hasan de Tiro founded a political party that advocated for this cause, which was largely abandoned in favor of autonomy after the former Finnish Prime Minister Martti Ahtisaari introduced regional elections for the GAM. President Megawati sent an army to suppress insurgents in favor of this cause, which centered on an oil-rich “special province” that called for the implementation of *sharia* law. This cause was largely hampered after a tsunami in 2004 caused much devastation in the Indian Ocean. For 10 points, name this goal that would have given freedom to a province on Sumatra.

ANSWER: **Aceh Independence** [prompt on independence from Indonesia]

14. Richard Gombrich’s interpretation of this passage suggests that a word usually translated as “clinging” may have been originally read as “fuel.” In this passage, it is explained that concept of “name-and-form” is at the root of a chain which produces the sensations of craving and aversion through dependent origination. A proper follower becomes “disenchanted” with the eye, forms, eye-consciousness, eye contact, ear, nose, tongue, and body according to words in this passage spoken to a gathering atop Mount Gaya. This text inspired the depiction of a soulless sexual encounter with a “small house agent’s clerk”, which is narrated by a man who has “sat below Thebes before the wall / and walked among the lowest of the dead.” This *sutta* states suffering, can be ended through detaching. The Pali Canon contains, for 10 points, what sermon, which provides the title to the third section of *The Waste Land*?

ANSWER: the **Fire Sermon** [only **fire** is needed after “sermon” is read; or **Adittapariyaya** Sutta]

15. This book contains instructions for making a carp fish dish instantly following a summary of Moby Dick. This book’s backstory talks of a man who is slain as a ramification of a jinx that was got from purloining that jinx from his own dad, and having his fish start masticating on that jinx. Possibly as a ramification of that Zahir black magic jinx, a woman says “Maldiction” and is slain during a stay at Azincourt in this book. A cop with an ID of Aloysius Swann is a villain in this book, and that cop kills Savorgnan using a Smith-Corona wordsmith at its abrupt climax. This book has a translation of a John Milton work with “On His Glaucoma” as its ID, and it follows Olga and Ibn Abou's hunt for a missing man, who has a library that has a group of six by four, plus two books, but with that fifth book missing. This lipogram was put into a U.S.-lingo by a man that has "Adair" as a patronymic. For six plus four points, say this book, in which Anton Vowl is missing, by an Oulipo author.

ANSWR: *A* ***Void*** [or *La* ***Disparition***]

16. In an early opera from this country, the aria “May the terrible jaws of Hades open wide” is sung by Testor as he transforms a forest grove into a desert. Three-bar phrases played *in moto perpetuo* alternate with a slow bridal song in the first orchestral work from this country based entirely on native music. The earliest known explication of the circle of fifths appears in a 17th-century treatise from this country, titled *A Grammar of Musical Singing*. During his decades of service to its court, Francesco Araja wrote the opera *Cephal and Procrys* in its native language. The *de facto* founder of modern classical music in this country composed an anthem known as the *Patriotic Song*, which was long mistaken for the closing chorus of an opera in which Susanin intentionally leads a Polish army away from one of its rulers. For 10 points, name this country whose folk dances inspired *Kamarinskaya*, by Mikhail Glinka.

ANSWER: **Russia** [or **Rossiya**; accept **Russia**n Empire]

17. The existence of this class of objects is defended by constructing Cantor Regions in a topological argument advanced by Frank Arntzenius. In possible worlds comprised entirely of this class of objects, there can be no virtual objects according to Peter van Inwagen’s book *Material Beings*; Inwagen rejects a form of "nihilism" that holds this class of objects cannot exist, instead favoring a “universalism*.*”Alfred North Whitehead’s argument that planes, lines, and points are merely abstractions of the true nature of space is said to be an early defense of the existence of this class of objects. This class of objects is introduced by name in David Lewis's book *Parts of Classes,* which states this class of infinitely divisible objects has proper parts that can be infinitely subdivided into more unique objects. For 10 points, give this term for a class of atomless objects studied in mereological philosophy.

ANSWER: **gunk**

18. For a spin polaron, this quantity varies exponentially with the polaron radius. An approximation or theorem named for this quantity is shown by applying the Schrodinger equation to just the envelope function. When calculating conductivities in an anisotropic medium, one uses a value of this quantity equal to the harmonic mean of its values for each spatial coordinate. This quantity can be calculated from the second-order term in the series expansion of the energy in k dot p perturbation theory. This quantity's sign is given by the curvature of the parabolic dispersion curve formed when plotting energy vs momentum for an energy band. It is defined as one over h-bar squared times the second derivative of the energy with respect to the wavenumber. For 10 points, the behavior of an electron in a lattice can be approximated as that of a free electron by using what quantity denoted m-star?

ANSWER: **effective mass** [prompt on just mass]

19. Henri Lapeyre estimated this ruler expelled roughly 4% of the empire’s population with a decree that removed the peasantry of Alicante. As an ally of the ineffectual Emperor Mathias, this ruler’s armies intervened against rebels in Aachen during the War of the Julich Succession. He recognized the United Provinces as a republic under the Twelve Years’ Truce. Through the secret Oñate (oh-NYAH-tay) treaty, this king renounced claims to Bohemia and Hungary and, in return, agreed to back his relative Ferdinand II, leading to his intervention against the “Winter King”. Known as “the Pious,” this king exercised power through his favourite, the Duke of Lerma, and issued a decree expelling all *moriscos*. His armies joined the Count of Tilly in defeating the Bohemian Estates at the Battle of White Mountain. For 10 points, name this monarch whose father of the same name built the Spanish Armada.

ANSWER: **Philip III** of Spain [or **Felipe III**; or **Philip the Pious** until “Pious” as read, prompt thereafter; prompt on Philip or Felipe]

20. A character in this novel gives a speech citing Professor Enoch Mebane, stating that some people “strive for development” because they don’t have "billions" of monads in their brain. The final section of this novel, in which the narrator repeats “Surely I come quickly,” is titled “It Is Done…”. Its protagonist steals a copy of *The Life and Death of Mr. Badman*, and has a vision of a mysterious white temple. Samuel naively thinks this novel’s protagonist will get along well with Reverend Eppes, who instead tries to seduce him and talks about how attractive young boys are. Its protagonist has fantasies about Margaret Whitehead, whom he ends up being goaded into murdering by an unhinged character named Will. A man named Hark joins this novel’s protagonist in his “work of death,” which he recounts to the lawyer Thomas Gray. For 10 points, name this William Styron novel fictionalizing a slave rebellion.

ANSWER: *The* ***Confessions of Nat Turner***

1. Weinberg names one of these quantities, which is used to relate the masses of the W and Z bosons. For 10 points each:

[10] Name these quantities, which measure how certain sets of particles, such as the neutral bosons or neutrinos, convert between different eigenstates via the weak force. The PMNS matrix contains three of them.

ANSWER: **mixing angle**s [prompt on angles]

[10] The CKM matrix contains three mixing angles and one complex phase parameter, which is the source of this effect, in which the weak force does not preserve a combined symmetry between charge conjugation and parity inversion.

ANSWER: **CP violation** [or **charge-parity violation**]

[10] This Swedish female particle physicist names a parameterization-invariant quantity calculated from the elements of the CKM matrix which quantifies the strength of CP violation.

ANSWER: Cecilia **Jarlskog**

2. This country’s Mashramani carnival is held on February 23 on Republic Day, which commemorates the Berbice slave revolt led by a man named Cuffy. For 10 points each:

[10] Name this modern-day country, which was also the site of the Jack Gladstone-led Demerara rebellion, which took place a decade after the colony of Demerara was unified with the neighboring colony of Essequibo.

ANSWER: **Guyana**

[10] This British abolitionist used the martyrdom of a named John Smith during the Demerara rebellion to stoke the anti-slavery movement. He was a member of the Clapham Sect.

ANSWER: William **Wilberforce**

[10] Disputes between a unified Guyana and Venezuela over the “Schomburgk Line” nearly erupted into a war until the intervention of this foreign leader, who argued that the line had been extended in “some mysterious way”.

ANSWER: Grover **Cleveland** [or Stephen Grover **Cleveland**]

3. For 10 points each, answer the following about bizarre cuisine in China:

[10] This substance is used to fertilize the world's most expensive tea. A cup of this kind of tea sells for approximately 300 U.S. dollars.

ANSWER: **panda poop** [prompt on dung or excrement]

[10] Another costly Chinese delicacy is bird's nest soup, which is actually made of this substance that sells for approximately 5,000 dollars a pound. In humans, this substance is produced by namesake exocrine glands and contains amylase.

ANSWER: **saliva** [or **spit** or equivalents]

[10] If you want a cheaper delicacy, you can pay about a dollar for an egg in Dongyang, China, which are boiled in this rather unique liquid. According to the article I read, eating those eggs prevents heat stroke.

ANSWER: **urine** of a **virgin boy** “preferably under the age of 10” [must give answers indicating **urine of a virgin boy**; prompt on urine; prompt on urine of a virgin; prompt on urine of a boy; accept similar synonyms for each component of the answer; such as "pee" for "urine".]

4. The protagonist calls this man “my Rosenkavalier” when he presents her with some roses. For 10 points each:

[10] Name this character who is gentler than his poker buddies, but nonetheless rejects the protagonist after learning stories about her past in the town of Laurel.

ANSWER: **Harold** “**Mitch**” **Mitchell** [accept any of the underlined names]

[10] Harold Mitchell appears in this play, which ends with Steve announcing that the game is "seven card stud" after Blanche Dubois collapses after she is about to be committed to a mental hospital.

ANSWER: *A* ***Streetcar Named Desire***

[10] *The Poker Game,* the third act of *A Streetcar Named Desire*, is set in a "lurid nocturnal atmosphere" that the stage directions state is inspired by this artist. This man's ghost is a character in Tennessee William's *Will Mr. Merriweather Return from Memphis?*

ANSWER: Vincent **van Gogh**

5. A song on an album titled for one of these places features the line “And I will do anything for love,” repeatedly sung in a melody eerily identical to that of the Meat Loaf song. For 10 points each:

[10] Identify this type of place which titles the only album by outsider musician Y. Bhekhirst. An album intended for a sound installation in one of these places, which phases four tape loops of differing lengths to create tracks titled “1/1,” “2/1,” “1/2,” and “2/2,” is the first in the *Ambient* series.

ANSWER: **airport**s [*Hot in the Airport* and *Music for Airports*]

[10] This composer pioneered the genre of unobtrusive ambient music with his album *Music for Airports*. He collaborated with David Bowie on his *Berlin* trilogy and produced several albums by U2 and the Talking Heads.

ANSWER: Brian **Eno** [or Brian Peter George St John le Baptiste de la Salle **Eno**]

[10] In the opening scene of this opera, the baritone title character sings “News has a kind of mystery” after arriving at an airport and shaking hands with Chou En-lai.

ANSWER: ***Nixon in China***

6. This poem inquires “what should we do but sing his praise / That led us through the wat’ry maze"? For 10 points each:

[10] Identify this Andrew Marvell poem named for a remote location “in th’ ocean’s bosom unespy’d”.

ANSWER: “**Bermudas**”

[10] If Ariel’s line in this play about the “still-vexed Bermoothes” indeed refers to Bermuda, then it’s the only location in the New World explicitly named in a Shakespeare play.

ANSWER: *The* ***Tempest***

[10] This poet proclaimed "one cup shall go round to the friend of my heart" in "To Joseph Atkinson, Esq", a man from Bermuda. He also wrote the verse novel *The Fudge Family in Paris,* and a poem whose second stanza begins "It is not while beauty and youth are thine own, / And thy cheeks unprofan'd by a tear."

ANSWER: Thomas **Moore**

7. This company’s nasty disputes with its English counterpart resulted in the Amboyna Massacre, in which 10 English and several Portuguese were executed on Maluku for treason. For 10 points each:

[10] Identify this company, whose foreign ambitions helped spark a series of wars between its home country and England in the 17th century. It was largely responsible for driving Portugal out of the Spice Islands.

ANSWER: **Dutch East India** Company [or **VOC**]

[10] This Englishman served as a Dutch East Indian Company employee in Japan. An advisor to Tokugawa Ieyasu, he went on to lead Japanese “red seal” trade missions to Southeast Asia.

ANSWER: **W**illiam **Adams** [prompt on Adams]

[10] Later, the Anglo-Dutch Treaty of 1824 settled whether this region fell under the sphere of influence of the Dutch or British companies. Stamford Raffles negotiated its sultan, Hussain Shah for the land of Singapore.

ANSWER: **Johor**

8. Hannah and Andy are a semi-observant Jewish couple who have recently adopted a puppy. For 10 points each:

[10] Their action may, in some ways, be considered a form of this concept of justice with a Hebrew name, commonly used to refer to charity. Hannah and Andy’s volunteer work for a literacy program for refugees at their local synagogue may also be considered a form of this practice.

ANSWER: **tzedakah**

[10] Since Hannah and Andy are trendy, they will celebrate a Bark Mitzvah for the puppy when it turns this many months old. Traditionally, a Jewish boy celebrates a normal Bar Mitzvah after he turns this number of years old.

ANSWER: **thirteen** months/years

[10] Bark Mitzvahs, like Hannah’s and Andy’s, are commonly held around Purim, which falls during this month of the liturgical calendar. Moses is traditionally held to have born and died during this month.

ANSWER: **Adar**

9. Most of this artist’s work consists of abstract self-portraits and paintings based on masks used in Santeria rituals. For 10 points each:

[10] Name this artist, who demonstrated loyalty to communism by painting *The Third World* on the walls of Fidel Castro’s presidential palace. After returning to his homeland in the 1950s, he declared that he refused to paint “cha cha cha” of the type designed to please American tourists.

ANSWER: Wifredo **Lam** [or Wifredo Óscar de la Concepción **Lam** y Castilla]

[10] Lam’s most famous painting is titled for one of these places. A largely self-taught artist who set his most iconic paintings in these locations was mocked by his colleagues as “le douanier” [doo-ahn-yay] or “the customs officer” and invited to a banquet in his honor in 1904 by Picasso.

ANSWER: **jungle** [or **rainforest**; or **tropical forest**; accept *The* ***Jungle***; prompt on forest]

[10] This is the other aforementioned artist, who set most of his iconic works in rainforests and jungles of various sorts, aside from his *The Sleeping Gypsy*.

ANSWER: Henri **Rousseau** [Henri Julien Félix **Rousseau**]

10. Lavoslav Ruzicka invented a type of this reaction which uses a thorium oxide catalyst. For 10 points each:

[10] Name this general type of reaction, whose favorability among aliphatic compounds is predicted by Baldwin’s rules. The Pictet-Spengler reaction is a variant of the Mannich reaction which is also this type of reaction.

ANSWER: **ring closure** [or **cyclization**; accept **ring formation** or answers that clearly indicating that a new **ring** is being **created**]

[10] According to Baldwin’s rules, ring closing reactions are first classified as *endo* or *exo* according to whether the bond being broken is inside or outside the ring, and then as one of three abbreviations depending on the hybridization of the electrophilic carbon. Name any.

ANSWER: **tet**, **trig**, or **dig**

[10] The *endo* transition state is favored in this archetypal ring-closing reaction between a diene and a dienophile.

ANSWER: **Diels-Alder** reaction

11. The translation of this chief’s poetic response to an offer to purchase the Salish islands opens “Yonder sky that has wept tears of compassion upon my people for centuries untold.” For 10 points each:

[10] Name this chief, who was nicknamed *Le Gros* or “The Big” by members of the Hudson’s Bay Company. He partnered to found a city with the booster David “Doc” Maynard, whose wife gave his daughter the name Angeline.

ANSWER: Chief **Seattle**

[10] Chief Seattle’s speech was translated into English from a pidgin known as the “jargon” of these Pacific Northwest peoples, mixing local tongues with French and English. Chief Comcomly led a confederacy of these peoples, whose federal recognition was unusually revoked by the Bush administration in 2001.

ANSWER: **Chinook** [or **Chinookan** peoples]

[10] In later years, Chief Seattle claimed to have witnessed the expedition by George Vancouver into this body of water next to Seattle; Vancouver named it after a Huguenot sailor on the expedition.

ANSWER: **Puget** Sound

12. Rhesus monkeys punish this behavior by forming screeching coalitions against individuals who decide not to call the community upon discovering food. For 10 points each:

[10] Name this term from ethology denoting a selection-favored behavior in which an organism reaps the benefits from its community without fully participating in it.

ANSWER: **cheat**ing [accept word forms]

[10] In food-scarce conditions, this haploid model amoeba aggregates into a multicellular fruiting body wherein roughly 20% of the cells give up the ability to reproduce, enabling rampant cheating by individuals who want to keep passing on their genotypes while enjoying the hardier form.

ANSWER: ***Dictyostelium*** *discoideum* [or ***D. discoideum***; prompt on slime molds]

[10] Cheating can also occur in these inter-specific interactions; for instance, cleaner wrasses snack on the scales and mucus layers of the fish that they rid of parasites, perverting a mutualistic relationship.

ANSWER: **symbiosis** [accept word forms]

13. The last of these works darkens in mood with a trill in its eighth measure that begins on a low F and alternates between the notes G-flat and A-flat, which Alex Ross described as the “Trill of Doom.” For 10 points each:

[10] Name these works, the last three of which—in C minor, A major, and B-flat major—are so thematically knit they are often performed as a trilogy. A never-completed C major one of these was given the nickname “Reliquie.”

ANSWER: **piano sonata**s by Franz **Schubert** [prompt on Schubert sonatas or other partial answers that do not mention all three notions of **sonata**s for the **piano** by Franz Peter **Schubert**]

[10] The reputation of Schubert’s last piano sonatas suffered initially because they were seen as derivative of this other composer’s 32 piano sonatas, including the “Les Adieux.”

ANSWER: Ludwig van **Beethoven**

[10] Alex Ross’ article “The Trill of Doom” described this Hungarian-born pianist’s struggle to interpret the trill in Schubert’s sonata. In 2015 and 2016 he gave a series of “Last Sonatas” recitals highlighting the final piano sonatas of Mozart, Haydn, Beethoven, and Schubert.

ANSWER: Sir András **Schiff**

14. A ghost-heavy satirical novel in this genre titled *What Sort of Book is This?* is written primarily using a vernacular dialect. For 10 points each:

[10] Give this Lu Xun-coined term for traditional Chinese fantasy novels. They include a set of works called *The Four Journeys*, as well as the hundred-chapter *Investiture of the Gods*, which describes the rise of the Zhou dynasty.

ANSWER **gods** and **demons** fiction [or **shénmó** xiǎoshuō]

[10] *The Four Journeys* includes a *different* novel titled *Journey to the West*, distinctly different from a far more famous “gods and demons” novel by Wu Cheng’en which heavily features this mischievous monkey warrior.

ANSWER: **Sun Wukong** [prompt on Sun; prompt on Wukong]

[10] In *A Supplement to the Journey to the West*, Sun Wukong journeys to the Tower of Myriad Mirrors, and gets trapped in a dream world created by this demon. According to the book, this creature was born on the same hour as Sun Wukong, but this creature "belonged to evil."

ANSWER: **Qing Fish** [prompt on the Fish Demon or Fish]

15. E. F. Schumacher critiqued the materialistic form of this idea in *A Guide for the Perplexed*. For 10 points each:

[10] Name this idea, also critiqued in Friedrich Hayek’s *The Counter-Revolution of Science*. As this idea’s name suggests, it holds that a certain method of testing hypotheses is the only valid source of knowledge.

ANSWER: **scientism** [accept word forms]

[10] Scientism can be contrasted with this view, advocated by Stephen Jay Gould, that science and religion are completely separate domains of inquiry. It’s known as NOMA for short.

ANSWER: **non-overlapping magisteria**

[10] Mary Midgley’s debates with Dawkins about scientism was inspired by an article this moral philosopher wrote praising *The Selfish Gene* for its applicability to ethics. He argued for the “invention of right and wrong” in his book *Ethics*.

ANSWER: J. L. **Mackie** [or John Leslie **Mackie**]

16. This series’s final volume describes the outbreak of the Civil War and incorporates contemporary accounts of white people's mutilation of Sioux corpses from the 1862 Outbreak. For 10 points each:

[10] Name this set of novels, whose first volume concludes with a family's patriarch, Karl-Oskar, being awed by the Hudson River Railroad. *The Last Letter Home* is the fourth and final novel of this Wilhelm Moberg series.

ANSWER: *The* ***Emigrants*** [or ***Utvandarna***]

[10] Ole Rolvaag wrote this other novel about Nords emigrating to America; in it, Per Hansa starts a fight with his neighbors after burning some stakes that belong to them.

ANSWER: ***Giants in the Earth*** [or ***Verdens Grøde***]

[10] In this other novel, a fool named Steinar brings his family to Mormon Utah after he gives a pony named Krapi to the king of Denmark.

ANSWER: ***Paradise Reclaimed*** [or ***Paradísarheimt***]

17. A "spiral" model of the creation of this commodity proceeds through the stages of socialization, externalization, creation, and internalization according to Ikujiro Nonaka. For 10 points each:

[10] Name this concept that is the basis of a special type of business economy according to Peter Drucker.

ANSWER: **knowledge** [accept any answers that use the word **knowledge** in them]

[10] Ikujiro Nonaka distinguished explicit knowledge from this kind of knowledge, which can only be transferred through "experience" and not through verbalization. Michael Polanyi's magnum opus claims this kind of knowledge transcends what we can "tell."

ANSWER: **tacit** knowledge

[10] Peter Drucker and Ikujiro Nonaka are considered to be consultants in this practice, the process of controlling a business's workflow. A "scientific" form of this process was proposed by Frederick Taylor.

ANSWER: **manage**ment [accept scientific **management**]

18. This historian, credited with writing a book entitled “The Twelve Calamities of Emperor Frederick II,” was the primary source on the life of Frederick II and the Fifth Crusade. For 10 points each:

[10] Name this Italian historian from Parma whose 1282 *Cronica*, or *Chronicle*, describes his monastic travels as a Franciscan friar.

ANSWER: **Salimbene** of Parma [or Friar **Salimbene** di Adam]

[10] Salimbene Chronicle starts with the founding of Alessandria by this alliance of cities, which combatted the designs of Frederick Barbarossa in northern Italy until he settled the Peace of Constance with it.

ANSWER: **Lombard League**

[10] Salimbene was a devotee of this Italian theologian who founded a monastic order at San Giovanni, which was backed by Pope Celestine III. His mystical visions caused him to prophecy the coming of the final and third era of human history, the Holy Spirit time.

ANSWER: **Joachim** of Fiore [or **Joachim** of Flora or **Gioacchino** da Fiore ]

19. A shape parameter characterizes this man’s namesake lambda function, which is unusually based on its own quantile function. For 10 points each:

[10] Name this statistician who introduced the jacknife method, and who names an efficient algorithm for computing the discrete Fourier Transform with James William Cooley.

ANSWER: John **Tukey** [or John Wilder **Tukey**]

[10] This adjective denotes a type of analysis that involves summarizing the main characteristics of the data before creating models. Often contrasted with confirmatory analysis, it was first used in a John Tukey book which introduced the box plot.

ANSWER: **exploratory** data analysis

[10] The book *Exploratory Data Analysis* pioneered this technique, in which correlated variables are transformed and reduced into the namesake set of uncorrelated variables. The NIPALS algorithm is often used in this technique.

ANSWER: **principal component** analysis [or **PCA**]

20. Increases in this factor are the only way to guarantee growth in the Solow model in the long run without population growth. For 10 points each:

[10] Identify this factor, which almost always increases the productivity of both labor and capital. The total factor productivity is a measure of a change in this factor of production.

ANSWER: **tech**nology

[10] This two-word term describes “technological change” that has been linked by several economists to increases in wage inequality, such as in a 2002 paper by David Card.

ANSWER: **skill-biased** technical/technological change

[10] This MIT economist worked with Alan Krueger and Laurence Katz on the 1997 paper “Computing Inequality” analyzing the contribution of computers to skill-biased technological change. Several of his articles on trade with China are co-authored with David Dorn.

ANSWER: David H. **Autor**