Chicago Open 2013: No Subtext, Just Tacos.
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Tossups

1. **This work uses the examples of a secretary writing a love letter on company time or a cabinet maker borrowing a lathe from work as personal or "popular culture" entering and existing alongside disciplinary spaces, a subversive gesture which the author calls _la perruque_. In a chapter entitled "Making Do" the author distinguishes between "procedures of consumption" and "use." Utilizing the work of Foucault and Bourdieu this work utilizes the poetics of procedures, tactics and strategies to interpret common activities like writing, talking and the flaneur "walking in the city." It shifts the focus of its sociology from aggregate social behaviors to individual** (*) "ways of operating." For 10 points name this 1984 work of sociology, a foundational text in cultural studies written by Michel de Certeau.
ANSWER: The _**Practice of Everyday Life**_

2. **In this religion's funeral rites, the _phul_, or so-called "flowers" of a cremated body are gathered and dissolved, and a reading of its scriptures is timed to last ten days to console the bereaved. A group of warriors of this religion were named "mythical sea creatures" because their fighting resembled that of crocodiles, and participate in a three-day Olympic-like event called "tactical maneuvers" this religion deliberately holds one day after a more prominent festival. During wedding ceremonies in this religion, the bride and groom hold onto opposite ends of a scarf and circle around a holy object four times, representing the _lavan_; that marriage ceremony is literally called "Blissful Union." Temples in this religion have four** (*) doors, apocryphally to short-circuit the claim that God lies in the West or the East, and contain communal eating places called _langar_. In another rite in this religion, celebrants have drops of water put on their hair and eyes and cry, "Waheguru Ji Ki Fateh!" in front of the onlooking _Panj Piyaras_. For 10 points, name this religion whose baptism ritual involves drinking _amrit_ stirred by a double-edged sword and then going on to live by the Five K's.
ANSWER: **Sikhism**

3. **One of the most powerful kings to rule from this city, Naresuan, campaigned alongside his brother, the prince Egatosrost, and participated in a legendary elephant battle against King Mingyi Swa of the Toungoo Dynasty, which allowed this city to be restored after its first fall. The first king to take power in this city compiled a legal code known as the Dharmashastra. The second and final fall of this city came after its final king, Ekkathat, was defeated by invasion of the Konbaung Dyansty - afterwards, this city was replaced as capital by** (*) Thonburi, under the king Taksin. This city originally rose as the successor capital to the Sukhothai kingdom in circa 1350 AD, and expanded its power outwards from the Chaophraya valley. FTP, name this city which was the namesake of the kingdom that ruled Siam from 1350 to 1767.
ANSWER: **Ayutthaya**

4. **This text begins with a stunningly harsh critique of Von Haller's _Restoration of the Science of the State_ claiming that its author maintains originality, "by dispensing with thought altogether." This work revisits a Sophocles play discussed in an earlier work by the author, and suggests that _Antigone_ represents the tragic collision of two forms of the title concept. Walte**r (*) Kaufmann, in a work about the methods of mythologizing this text's author, suggests that Popper's critique of this book's author as a "false prophet" is partially based on a gross mistranslation of a phrase from this work, "the State is the March of God through the World." It locates the origin of free will and individual liberties in realized social constructions like property and contracts. For 10 points, name this 1821 text that describes a dialectical movement from moral to ethical living culminating in the state, written by G.W.F Hegel.
ANSWER: Elements of the _**Philosophy of Right**_ [or Grundlinien der _**Philosophie des Rechts**_] [do not accept "Philosophy of Right**s**," I know that German title makes it look plural, it ain't]

5. **This character's sister died after repeatedly crying "My husband, my father, and my brother!", counting to twelve, and then saying, "Hush!" After returning from a parade, this character reprimands her husband**

while tying knots in her handkerchief storing the contents of a bowl of money. In one scene, this character pins a rose in her headdress as a warning signal when she is visited by John Barsad. This character is often accompanied by a shrill woman nicknamed (*) The Vengeance, who bewails her failure to appear at a certain event. This woman is married to a wine shop owner named Ernest. This character is killed when her pistol goes off as she grapples with Miss Pross after intruding into the lodging of Lucie Manette. For 10 points, name this woman whose knitting registers those condemned to die by the guillotine during the French Revolution in Charles Dickens's *A Tale of Two Cities*.
ANSWER: **Madame Defarge** [or **Therese** Defarge; prompt on **Defarge**]

6. **A 1992 study by Korenberg demonstrates that these agents are useful as probes for chromosome painting, as well as for ordering probes along chromosomes using FISH methods. These creations are capable of being replicated and selected for in an Enterobacteriacae strain which has maltose permease, the E. coli malB gene product. The early examples of them, such as the series created by DiLella and Woo in 1987, were typically 5kb in size. First developed by John (*)** Collins and Barbara Hohn in 1978, their characteristic feature is they are able to use the lambda delivery system for efficient cloning of large passenger DNAs. Often used in constructing genomic libraries, these vectors are named for their lambda sites which allow DNA to be packaged into phage particles. FTP, name these cloning vectors which are similar to plasmids, except that they contain a cohesive end site.
ANSWER: **cosmid**s

7. **This artist served as general editor for the series *Documents of Modern Art,* which made available works of art theory like Paul Klee's *The Thinking Eye*. This artist was often influenced by poetry, such as his early paintings *Mallarme's Swan,* and *The Voyage* – the latter inspired by the Baudelaire poem – and his late series *The Hollow Men.* He evoked the horrors of World War II combat in a work which was intended to resemble blood-soaked bandages – the collage titled *Surprise and Inspiration.* Although he occasionally delved into figurative painting in works like (*)** *Spanish Prison (Window)* and *Pancho Villa, Dead and Alive,* he is better known for large series of abstract series of shapes such as the *Open* series. His most well-known series mostly consists of pieces featuring alternating black ovals and rectangles on a white background. For 10 points, name this husband of Helen Frankenthaler, an abstract expressionist painter who created the series *Elegy to the Spanish Republic*.
ANSWER: Robert **Motherwell**

8. **Some members of this group, which included Henry Swift and Consuelo Kanaga first met at "683," a gallery on Brockhorst St. This group's first show was at the M. H. de Young Memorial Museum in San Francisco. Utilizing a technique one member of this group called "previsualization," which involved a flat plane of ground glass that reflected the scene, works like *Dunes, Oceano* and *Succulent* attempted to capture sharp-detail. This group's 1932 manifesto defines their work in contrast to the (*)** "Pictorialist," which borrows principles from the graphic arts and painting as opposed to the pure or "straight" style of photography this group advocated. For 10 points identify this group formed by such figures as William Van Dyke, Edward Weston and Ansel Adams named after the smallest aperture of a large-format camera.
ANSWER: **Group f/64**

9. **Shapiro and Teukolsky have explained a possible violation of this principle by simulating sufficiently large collisionless gas spheroids by seemingly observing the effects of the hoop conjecture. The strong version of this hypothesis states that generally asymptotically flat or compact initial data have maximal Cauchy development that are locally in-extendible; that version is equivalent to the hypothesis that spacetime is globally hyperbolic and was proposed after realizing that predictability fails in the (*)** Kerr metric. Shahar Hod has refuted one challenge to this idea by noting that no amount of angular momentum added to a black hole would allow it to spin fast enough so that this principle would be violated. It was the subject of a famous bet between Kip Thorne and Stephen Hawking. For 10 points, name this idea proposed by Roger Penrose which states that a black hole's event horizon will always prevent a spacetime singularity from being observed.
ANSWER: **cosmic censorship** principle

10. **One of this group's earliest actions was to circumvent a mayor's ban of protest signs by wearing T-shirts with individual letters which spelled out "Albertz Resign." After burning down a department store as a member of Kommune I (one), one of the founding members of this group stays with media theorist Regis**

Debray in Paris. During the filming of *Bambule*, members of what would become this group decided to model themselves on Uruguay's Tupamaros. While on trial, members of this group were held in a prison during where they (*) committed mass suicide in the infamous "Death Night." The kidnapping of Hans Schleyer, the murder of Jurgen Ponto and the hijacking of the Landshut by this group in 1977 culminated a period known as the German Autumn. For 10 points, name this left-wing urban-guerilla terrorist organization active in the 1970's and named after two of its founders, also known as the Red Army Faction.
ANSWER: **Baader-Meinhof** Gang [or **R**ed **A**rmy **F**action before mentioned]

11. Albert Camus wrote of some of these works that "to sustain the legend of their author one has to be unaware of them," adding, "They are sacrilege, as the truth sometimes is." One of these works contains the ambiguous interjection, "To be continued in six minutes," and argues that merely thinking about the first letter of the alphabet will drive weak-minded people to madness. Another of these works notes, "It is wrong to say: I think. One ought to say: I am thought…I is another." In one of these works, the author states, "the poet is truly the thief of fire," after advocating a "long, immense, and deliberate (*) derangement of the senses" in order for the poet to achieve a certain state. Those addressed to Georges Izambard and Paul Demeny are known as the ones "du Voyant," or "of the Seer." For 10 points, name these works, the most famous of which expounded the philosophy of a sixteen-year-old poetic prodigy at the time of his writing "The Drunken Boat."
ANSWER: **letters** by Arthur **Rimbaud** [or **Letters of the Seer** before it is read; or **Lettres du Voyant**]

12. While this chemist was employed at the Hercules Powder Company, he collaborated with his supervisor David Breslow to discover the general mechanism for hydroformylation. A better-known reaction named for this man has an intramolecular variant named for Mori and Ban, which can be used to synthesize indoles. This man's reaction originally involved the formation of trans-stilbene from the combination of styrene and iodobenzene. In that reaction a transmetallation step is absent from the mechanism; after the universal oxidative addition step, the catalyst undergoes migratory insertion and beta-hydride elimination, followed by deprotonation. That reaction creates carbon-carbon bonds by activating an alkene with a palladium catalyst, just like similar reactions named for Negishi and Suzuki, with whom this man shared the Nobel Prize in 2010. The namesake of a reaction also titled for Mizoroki, FTP, name this American chemist who pioneered transition metal catalysis with his cross-coupling reaction.
ANSWER: Richard **Heck**

13. At one point, this character travels with her husband to a tavern owned by the drunk Jim Hartsel - while there, her husband sells his dad's violin to Hartsel's wife for 20 gold pieces. This character names her first child "Eyes of the Sky" after a villager notices both she and the child have blue eyes. This title character of a novel originally called *In the Name of the Law* was based on a real woman the author met traveling with Abbot Kinney. This character elopes with the Italian shepherd Alessandro Assis, and they nearly die in a snowstorm before settling in the San Bernardino mountains. When Alessandro dies, she returns home to marry (*) Felipe Moreno, whose mother does not approve of her, because she is half-Scottish and half-Indian. She was created as a fictional outgrowth of the author's previous book, *A Century of Dishonor*. For 10 points, name this half-breed girl who titles the most famous novel by Helen Hunt Jackson.
ANSWER: **Ramona**

14. One musical work with this title contains the movement "The Three Blind Sisters," which represents the singing of a ballad of that name. The second movement of another work with this title features an oboe melody accompanied by the strings, which represent a spinning wheel. That work with this title, along with *Shylock*, comprises the music for the "Emeralds" section of Balanchine's ballet *Jewels*. The G-minor third movement of that work is an orchestration of its composer's *Sicilienne*, op. 78, which was initially intended for his incidental music to *Le bourgeois gentilhomme*. The (*) libretto of the most famous work of this title was unusual in its extreme faithfulness to an existing prose play. That work concerns a love triangle between Prince Golaud and the two title characters and is its composer's only opera. For 10 points, give this shared title of works composed by Sibelius, Fauré, Schoenberg, and Debussy, all inspired by a Symbolist play about doomed lovers by Maurice Maeterlinck.
ANSWER: *Pelleas and Melisande*

15. A play titled after this instrument revolves around the literary genius Cai Boxie, who's compelled to marry the Prime Minister's daughter Lady Niu after he passes the imperial exams. That play is the major

work of the 14th century playwright Gao Ming. Another one of these instruments will not play until seven sons of its owner are killed in battle, and the blood of those sons enter the instrument - but that one finally plays the Dausi song, which is said to grant its owner immortality, after the fall of the kingdom of (*) Wagadu. One of these instruments provides the title of the best-known work by Father Gjergj Fishta. In the aforementioned story first collected by Leo Frobenius, this instrument is owned by Gassire, who longs to be king of Ghana. For 10 points, name this instrument which is the subject of a verse known as the national epic of Albania.
ANSWER: **lute** [accept the works in question: Lute Song, Gassire's Lute, and The Highland Lute]

16. **This man's supporters used the slogan "Rally round the flag, boys;" while O.C. Wheeler promoted him by using the slogan "That Constitution as it is, the Union as it was" after meeting him during his time as editor of the newspaper The Western Empire. Nevertheless, he was defeated in the ensuing political race by John Brough. Late in life, he was a defense lawyer for Thomas McGehan, who was accused of murdering Tom Myers at a local bar - in the course of trying to demonstrate how that murder happened, he pulled out a gun and shot himself at the courthouse, and then died the next morning. At a speech in Mount Vernon, he claimed that he didn't care about General Order Number (*)** 38; that speech caused Ambrose Burnside to arrest him and put him on trial, after which he was exiled to the South and then fled to Canada, becoming the basis for "The Man Without a Country." For 10 points, name this Copperhead who led the Peace Democrats in Ohio during the Civil War.
ANSWER: Clement Laird **Vallandigham**

17. **At one point, this figure encountered two brothers with the same name, and the older one attempts to lure him into a special hall to chop his head off with an intricate machine, but the plan backfires. Earlier, this figure encounters a god in the shape of a bear, who casts a spell that makes him and his followers fall asleep - as a result, the thunder god sends him a magical sword in his sleep. This figure was aided by a red crow with (*)** three legs, sometimes called the "sun crow" or the "eight-span crow." Early in life, his brother Itsuse was killed during the battle at Kusaka hill, and buried at Mount Kama. His name means "divine warrior" and he was sent on a quest to find new land - at last, he discovers Yamato, where he builds a palace and marries a princess. FTP, name this direct descendant of Amaterasu who, according to the *Kojiki*, was the legendary first emperor of Japan.
ANSWER: Emperor **Jimmu** Tenno

18. **One city in this nation hosts a carnival which begins with performance of the Daiblada, or "Dance of the Devils." Another city here is home to Palacio Quemado or the Burned Palace, which has earned its nickname after being set on fire five times, as well as Tiwanaku Square. It's also home to the indigenous territory of Isiboro Sécure, and both an airport and soccer club named for Jorge Wilstermann. This country's highest point, the extinct volcano Nevado Sejama, is located in a region which also contains Lake Uru Uru, fed from the north by the (*)** Desaguedero River. This country's larger cities include Oruro and Cochabamba, while several of its noted sights including Lake Poopó are located on the eastern edge of the Altiplano. The Cerro Rico in this nation is the source for its silver mines at Potosí. For 10 points, name this nation that also features urban hubs at Sucre and La Paz.
ANSWER: **Bolivia**

19. **One paper that attempted to solve this problem first introduced the creation of a sequence of numbers beginning 15, 4697, and 5548, which the paper's author called genitores, and eventually led to Kochanski's approximation. Martin Gardner's construction was accurate to six decimal places; Srinivasa Ramanujan's to eight. One result important to this problem involved showing that if a complex number z is the root of an integral polynomial(*)**, then e to the z plus one cannot equal zero. That result is known as the Lindemann-Weierstrass theorem. Earlier attempts to solve it included the Lune of Hippocrates and Antiphon's side-doubling arguments. For 10 points, name this problem, which along with doubling the cube and trisecting the angle perplexed ancient Greek mathematicians, whose goal was to create a geometrically regular four-sided polygon of the same area as a given circle within a finite number of steps.
ANSWER: **Squaring the Circle** [accept **Quadrature of the Circle**]

20. **One conflict during this period began when Tullius Menophilus, governor of Moesia Inferior, refused to pay bribes to the Carpi tribe. Another conflict during this period was stirred up by the assassination of an official in Thyrsdus, leading to a rebellion which was put down at Carthage by Capelianus, governor of Numidia. The figure who eventually held power at the end of this period was long a puppet of his father-in-**

law, Timesitheus. The bloodshed in this period began when the city of Aquileia revolted against an emperor who was known for being very large. After that emperor's death, Balbinus and Pupienus reigned during this period, along with a relative of the aforementioned rebels in (*) Africa, Gordian III. For 10 points, name this year that began with the murder of Maximinus Thrax, kicking off the Crisis of the Third Century, whose name refers to the multitude of emperors in that year.
ANSWER: **Year** of the **Six Emperors** (accept reasonable equivalents, accept **238 AD** or **238 CE,** prompt on less-specific time periods (e.g. "Crisis of the Third Century", "Third Century AD") until 'Timesitheus', after which point they are just wrong)

TIEBREAKER

The penultimate poem in this collection was based on studies of Adam's son Seth by Esther Quinn and is titled "Oleum Misericordiae". Three short poems titled 'Farm' appear in this collection, preceding a poem where the speaker meets a woman in a 'dark dream', 'the necklace of wishes alive and breathing around' her throat – that poem is 'Hop 'o my Thumb'. The first poem in this collection describes an evening outside a childhood country home and a summer storm and originally titled the work in which it appears. In addition to 'As One Put Drunk into the Packet Boat', this collection includes a poem that asks 'Is anything central?' and 'Are place names central?', that poem being 'The One Thing That Can Save America'. The title poem in this collection describes (*) Pope Clement 'stupified' over the title object which is described as 'glazed, embalmed, projected at a 180 degree angle'. 'The right hand, bigger than the head, thrust at the viewer.' describes, for 10 points, the title object of this poetry collection written by John Ashbery, named for a painting by Parmigianino.
ANSWER: *Self Portrait in a Convex Mirror*

Bonuses

1. The title character of this play falls in love with the poor Prussian major Tellheim. For 10 points each:
[10] Name this play, the first comedy in German to deal with contemporary themes. It was written by the author of *Nathan the Wise*.
ANSWER: *Minna von Barnhelm*, [or *The Soldier's Happiness*; or *Das Soldatenglück*]
[10] This author of "Laocoon" and *Nathan the Wise* wrote *Minna von Barnhelm*.
ANSWER: Gothhold Ephraim **Lessing**
[10] This late non-fiction work by Lessing is a series of 11 pamphlets attacking a certain Lutheran pastor who considered Lessing's rationalist interpretations of the Bible to be blasphemous.
ANSWER: "**Anti-Goeze**"

2. Answer stuff about apples in Norse myth, for 10 points each.
[10] One of Odin's wish maidens became a crow and dropped an apple into this king's lap, or the lap of his queen. That resulted in the birth of this king's son Volsung, who was actually born after his dad, since he took six years to tear out of his mother's womb.
ANSWER: **Rerir**
[10] These deities - otherwise known as Urd, Verdandi, and Skuld - only allow Idun to pass into the picking field to harvest her apples of eternal youth.
ANSWER: **Norns**
[10] This goddess is attempted to be wooed by eleven of Idun's apples and by a precious ring made by Sindri, but she refuses those offers. When a sword is then pulled on her, she declares that she is a daughter of Gymir and will not be put in fear by threats, but her heart is finally softened by a speech of love.
ANSWER: **Gerd**

3. For 10 points each, name some things related to negative temperature.
[10] Negative temperature occurs when the entropy decreases as this quantity increases. For an ideal gas it is equal to 3/2 times nRT.
ANSWER: **internal energy** [prompt on "energy"]
[10] The easiest way to make a system with negative temperature is with a nuclear spin system in an applied magnetic field because entropy is minimized in either of these two conditions and maximized when energy is zero.
ANSWER: all the spins are **aligned** either up or down [accept word forms]

[10] In 2012, scientists created a negative temperature system with atoms in this type of system formed by two interfering laser beams with atoms localized in potential minimal. They are useful because they are similar to solid state systems, allowing for the controlled study of condensed matter phenomena.
ANSWER: **optical lattice**s

4. The villainous main character of this work was based on a real-life figure prosecuted by Edward Coke. For 10 points each:
[10] Name this play whose main character, Giles Overreach, is sent to a madhouse after his schemes are foiled by Frank Welborn and Lord Lovell.
ANSWER: *A New Way to Pay Old Debts*
[10] This playwright wrote *A New Way to Pay Old Debts*. Evidence that he may have been Roman Catholic can be seen in other plays such as *The Renegado, The Maid of Honour* and *The Bondman*, the last based on Plutarch's life of Timoleon.
ANSWER: Philip **Massinger**
[10] *A New Way to Pay Old Debts* was highly influenced by this Thomas Middleton work. In it, Theodorus Witgood uses the rivalry between his uncle, Pecunius Lucre, and another merchant, Walkadine Hoard, to scheme his way out of paying his debt.
ANSWER: *A Trick to Catch the Old One*

5. In the 1790s, this man established a racially-integrated school on his own property in Westport, Massachusetts. For 10 points each:
[10] Name this Quaker freedman, probably the wealthiest African-American of the late 18th century, who owned a fleet of ships. When one of his ships, the *Traveller*, was impounded during the War of 1812, he was granted a private audience at the White House with James Madison.
ANSWER: Paul **Cuffee**
[10] Cuffee was befriended by this treasury secretary who served from 1801 to 1814 under Jefferson and Madison. He also studied Native Americans and founded the American Ethnological Society.
ANSWER: Albert **Gallatin**
[10] Cuffee also founded the Friendly Society of *this place*, where he tried to grow a colony by proposing the building of a rice factory and salt works. Earlier, Granville Sharp had set up a colony here on the banks of Fourah Bay.
ANSWER: **Sierra Leone** [or **Freetown**]

6. He served as President of the Royal Society for 41 years beginning in 1778 and, late in life, worked with George Staunton to produce an account of the Macartney Embassy to China. For 10 points each:
[10] Name this botanist best known for sailing on the first voyage of Captain Cook, which led him to opine that the British should settle criminals at Botany Bay.
ANSWER: Joseph **Banks**
[10] While in Newfoundland, Banks provided a firsthand account of this bird which went extinct in 1844. Sometimes called the "Penguin of the North," or scientific *pinguinus impennis*, the last great hunt of this bird reportedly occurred on Eldey Island in Iceland.
ANSWER: the **Great Auk** (or garefowl)
[10] The Banks Peninsula is a rocky outcropping just to the south of this largest city on the South Island of New Zealand.
ANSWER: **Christchurch**

7. Its first exponent was the fictional Monsieur Aa (pronounced like the lava). For 10 points each:
[10] Name this position, advanced by such thinkers as Boris Groys and Jacques Lacan, which suggests that in contrast to sentence-like generalizations of universal truths, common acts and sensations in the phenomenological world have critical value.
ANSWER: **antiphilosophy**
[10] The aforementioned antiphilosopher Monsieur Aa was created by this Romanian born Dadaist writer of *The Gas Heart*, *The Approximate Man*, and *Seven Dada Manifestos*.
ANSWER: Tristan **Tzara**
[10] This French continental philosopher, known for asserting that "mathematics is ontology," argued that *Tractatus Logico-Philosophicus* contained an instance of antiphilosophy in *Wittgenstein's Antiphilosophy*.

ANSWER: Alain **Badiou**

8. Answer some questions about 20th century theatre movements, for 10 points each.
[10] Vsevolod Meyerhold promoted this form of theatre, whose most famous developer wrote in an essay that it was the "modern theatre," as exemplified in his plays like *Mother Courage and Her Children*.
ANSWER: **epic** theatre
[10] The audience participates in plays, taking on roles called jokers and facilitators, in the so-called "Theatre of the Oppressed" pioneered by this Brazilian whack-job, who was clearly inspired by Paulo Freire. He also created the related concepts of "invisible theatre" and "forum theatre."
ANSWER: Augusto **Boal**
[10] This French dramatist wrote a popular essay on his notion of the "People's Theatre," which supported opening the stage to the masses. He's also known for the burlesque fantasy *Colas Breugnon* and a massive *roman fleuve* about the German composer Jean-Christophe Krafft.
ANSWER: Romain **Rolland**

9. After Caesar's defeat at Gergovia, the opposing commander relocated his forces to this site. For 10 points each:
[10] Name this 52 B.C. battle, which eventually led to the Roman conquest of Gaul and the capture of Vercingetorix. ANSWER: Siege of **Alesia**
[10] In the *Commentaries on the Gallic Wars*, Caesar described the construction of two kinds of defensive walls which proved pivotal in the victory in Alesia. They are named according to the direction they faced the besieged site: name either.
ANSWER: **circumvallation** or **contravallation**
[10] An earlier adversary Caesar faced in the Gallic Wars was this Suebian chieftain, who sabotaged the Roman supply line to starve Caesar's men in the Vosges Mountains before coming out to fight. Caesar still won.
ANSWER: **Ariovistus**

10. It can be written as delta z-bar equals the covariance of character value and fitness, for 10 points each:
[10] Name this equation from evolutionary biology which describes the relative contribution of selection and fitness to the change in average value of a trait in a population.
ANSWER: **Price**('s) equation [or **Price**('s) theorem]
[10] The Price Equation reduces to this biologist's "fundamental theorem of natural selection" in the case where fitness is the limiting characteristic. That fundamental theorem named for this pioneer of ANOVA says that an increase in fitness matches an organism's genetic variance.
ANSWER: Ronald **Fisher**
[10] Comparing the maximum fitness of a genotype to the average in a population can be used to calculate this value, the average number of harmful mutations per organism.
ANSWER: **genetic load**

11. A retrospective of this duo's work was on display last year at the MOMA. For 10 points each:
[10] Name these siblings whose distinctive style of stop-motion puppet animations can be seen in such works as *On Deciphering the Pharmacist's Prescription for Lip-Reading Puppets* and *The Piano Tuner of Earthquakes*.
ANSWER: **Quay Brothers** [accept the **Brothers Quay**, or **S**tephen and **T**imothy **Quay,** or the **Quay Twins**]
[10] The Quay Brothers cite as one of their major influences Jan Svankmajr, known for a puppet adaptation of this literary work. The last film F.W. Murnau did in Germany, before coming to Hollywood, was an adaptation of this work.
ANSWER: *Faust*
[10] This Stravinsky ballet concerns a puppet that comes to life and learns how it feels to have emotions before getting killed by the Moor.
ANSWER: *Petrushka*

12. The third of these measures prevented any person from ascending to public office who had been shown to be a member of the Burschenshaft, or universal student unions. For 10 points each:
[10] Name these 1819 proclamations which grew out of a conference at a spa town in Bohemia, and which also required all publications to acquire state approval before going to press. They were a response to the death of Kotzebue.
ANSWER: **Carlsbad** Decrees

[10] These measures were decreed at a resort in Saint-Cloud by Charles X of France and his chief minister, the Prince de Polignac, in 1830. They also suspended the liberty of the press, and dissolved the chamber of deputies.
ANSWER: **July Ordinances** or the **Four Ordinances** of Saint-Cloud
[10] This reactionary succeeded Felix von Schwarzenberg as Austrian minister of the interior, in which capacity he cracked down on dissidents through his "four armies:" the military, the Church, the bureaucracy, and the informants.
ANSWER: Alexander, baron von **Bach**

13. Bandwagoning is a strategy that countries can adopt to stay safe according to this theory. For 10 points each:
[10] Name this theory in international relations, partly developed by neorealist Kenneth Waltz, which suggests that in order for countries to survive in a fundamentally anarchic world-system they will attempt to achieve points of equilibria to minimize the possibility of a hegemon.
ANSWER: "**balance of power**" theory
[10] John Mearsheimer in this 2001 work seeks to rectify the "status quo bias" in Waltz's defensive realist position and suggest alternatively that nations are inherently aggressive in an anarchic system.
ANSWER: The ***Tragedy of Great Power Politics***
[10] This is another potential strategy for countries to adopt to maintain the balance of power - in this strategy, a powerful state will make itself allies by declaring an attack on a smaller country is an attack on itself. It can be dangerous if you don't know what that small country will do.
ANSWER: **chain-ganging**

14. Answer the following about theologies after Auschwitz, for 10 points each.
[10] Emil Fackenheim suggested adding a 614th one of these Jewish precepts, that one being to deny Hitler posthumous victories. This Hebrew term can also refer to an act of generosity or kindness.
ANSWER: **mitzvot** [or **mitzvah**]
[10] Pope Benedict XVI broached the subject after a visit to Auschwitz. Benedict's most famous theological work is this first encyclical he wrote as Pope, which distinguishes between *eros*, *agape*, and *philia*.
ANSWER: ***Deus Caritas Est*** [or ***God is Love***; or ***De Christiano Amore***]
[10] This German Christian theologian of the Reformed Church argues in *The Crucified God*, that the concept of a God detached from human suffering must be rethought and rejected in the wake of the Shoah. His analysis in other works like *The Theology of Hope* gave rise to liberation theology movements.
ANSWER: Jurgen **Moltmann**

15. Answer the following about musical works influenced by J. S. Bach, for 10 points each.
[10] This set of nine works by Heitor Villa-Lobos includes one scored for an "orchestra of cellos" and another that contains a movement depicting the "Little Train of Caipira." It combines the styles of Bach and the folk music of its composer's native country.
ANSWER: ***Bachianas brasileiras***
[10] This work's composer, Paul Hindemith, considered it a modernization of the *Well-Tempered Clavier*. Like that work, it contains one fugue in each key, though unlike that work it has interludes between the fugues rather than preludes accompanying each one.
ANSWER: ***Ludus tonalis***
[10] This work begins with a chorale prelude which leads into a completion of Contrapunctus XIV from Bach's *The Art of Fugue*. This Busoni work was originally written for solo piano but due to its difficulty it was also arranged for two pianos.
ANSWER: ***Fantasia Contrappuntistica***

16. Answer the following about fluorine in chemistry, for 10 points each:
[10] Perhaps the greatest moment in Canadian chemistry history occurred in 1962, when this man produced one of the first noble gas compounds at British Columbia by combining a container of xenon with the red gas platinum hexafluoride.
ANSWER: Neil **Bartlett**
[10] In the wacky field of fluorous chemistry, this is the fun term given to the heavy per-fluoroalkyl chains that are linked by methylene or ethylene spacers to a phosphorous atom. These fluoroalkyl tags are so named because they seem to sprout off from the base in arcs that contain at least 39 fluorine atoms each.
ANSWER: **ponytail**s

[10] This isotope of fluorine, the only stable one, is the basis for a type of NMR because of its high gyromagnetic ratio and lack of a Nuclear Overhauser Effect.
ANSWER: **19**

17. Answer the following about violence in early 20th century Japan, for 10 points each.
[10] The 1905 Hibiya Riots in Tokyo were a series of protests against this 1905 treaty, which had recently ended the Russo-Japanese War.
ANSWER: Treaty of **Portsmouth**
[10] This 1910 socialist plot was an attempt to assassinate the Meiji Emperor by a group including the anarchist Kotoku Shusui and led to the enactment of the Peace Preservation Laws.
ANSWER: **High Treason** Incident [prompt on **Kotoku** Incident]
[10] This event didn't actually happen in Japan - but, you should still name this 1937 skirmish, in which a Japanese force based in Fengtai clashed with a Chinese force that didn't let them search the town of Wanping. Subsequent tensions hastened the Second Sino-Japanese War.
ANSWER: **Marco Polo Bridge** Incident

18. The main character of this book tells his life story during the "Night of the Pig," but he's undone in the end by the High Priest Khem-Usha. For 10 points each:
[10] Name this novel set in Ancient Egypt, which is about Menenhetet, a man who gets reincarnated three times. On the first occasion, he tells of his time serving as charioteer for Ramses II at the Battle of Kadesh.
ANSWER: *Ancient Evenings*
[10] This author of *Ancient Evenings* used the life of murderer Gary Gilmore for his novel *The Executioner's Song*. He also wrote *The Naked and the Dead* and a biography of Marilyn Monroe.
ANSWER: Norman **Mailer**
[10] In *Ancient Evenings*, Mailer talks a lot about the indigestible phallus of Osiris, which he earlier mentioned in the book *Genius and Lust*, his study of this author. This guy wrote about traveling in Greece with Lawrence Durrell in his book *The Colossus of Maroussi*, and wrote *The Air-Conditioned Nightmare*.
ANSWER: Henry **Miller**

19. Answer the following about memory management strategies in programming language environments, for 10 points each:
[10] First described in John McCarthy's 1960 paper*: Recursive Functions of Symbolic Expressions and Their Computation by Machine*; most implementations of this memory management technique seek to find all objects which are reachable in memory and then discard remaining objects.
ANSWER: **G**arbage **C**ollection
[10] Dijkstra's tri-colour implementation of this classic algorithm of garbage collection is used to *tag* found pointers to objects in the heap. All nodes which remain "white" after iterating recursively through the objects in the heap are disposed of.
ANSWER: **mark-and-sweep**
[10] The default serial collector in the HotSpot JVM utilizes this paradigm for collection, wherein all application threads are temporarily and completely suspended while objects are marked and disposed of. This paradigm is in contrast to more CPU intensive concurrent garbage collection.
ANSWER: **stop-the-world**

20. This man was perhaps the 2^(nd) most famous pupil of Perugino. For 10 points each:
[10] Name this painter perhaps best known for his frescoes in the Borgia Apartments, his 'Demi-Gods' Ceiling in the Della Rovere Palace in Rome, and his numerous works in the chapels of the Santa Maria del Popolo.
ANSWER: **Pinturicchio** [or **Bernardino** di Betto]
[10] Perugino himself may have been a fellow pupil of this artist, whose paintings of the coming of the Antichrist and the Last Judgment are in the Orvieto Chapel.
ANSWER: Luca **Signorelli**
[10] This other student of Perugino decorated the walls of the Chigi Chapel. He also painted the Stanza di Eliodoro and Stanza della Segnatura in the Vatican Palace.
ANSWER: **Raphael** Sanzio da Urbino

EXTRA

Purcell showed that the rate at which this process occurs can be increased by placing a light source in a resonant microcavity. For 10 points each:

[10] Name this process by which light is emitted from an object, but does not require population inversion or any external radiation.

ANSWER: **spontaneous emission**

[10] An atom in an optical cavity will continue to spontaneously emit and then reabsorb photons. This process is the 'vacuum' version of this type of oscillation, which was also observed in a modified version of the Stern-Gerlach experiment and is utilized in MRI.

ANSWER: **Rabi** oscillation

[10] This model mathematically describes the interaction between a single two-level atom and a single electromagnetic cavity mode. It is generally expressed as a sum of Hamiltonians of the free field, the atom and the interaction between them.

ANSWER: **Jaynes-Cummings** model