**Chicago Open 2016: "An Insatiable Kingpin of International Meme-Laundering"**

**Packet by Pottermore Sorted Me Into House Khnum (Jaimie Carlson, Sarita Jamil, JinAh Kim, Paul Lee, and Max Smiley)**

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**Tossups**

1. **This man's last paper says that "Philosophers and theologians have yet to learn that a physical fact is as sacred as a moral principle." This man's wife Elizabeth Cabot Cary recorded much of his work in her diaries. William James overcame his skepticism of this man to travel to Brazil with him, a trip described in Louis Menand's *The Metaphysical Club.* The Thayer and Hassler expeditions gathered data for this man, who exhorts a student to describe a decaying sunfish in a parable which opens Ezra Pound's *The ABC of Reading*. This first head of the** (\*)Lawrence Scientific School argued that different races originated independently with no common ancestor in his racist-ass theory of polygenism. A prehistoric lake that covered much of what's now Canada is named after, for 10 points, what Swiss-born celebrity professor who lectured on geology and natural history at 19th-century Harvard?
ANSWER: Louis **Agassiz**

2. **This person wrote the poetic phrase "if God had not protected me, [the] hyena would have stood on my limbs" about refusing to make an oath of allegiance, or *bay'ah*, to a human ruler. The *hadith* collection *Sahih al-Bukhari* relates an incident in which this person used a garment to collect the rings and necklaces of alms-giving women, and quotes this person on the relative location of pillars within the Ka'aba. Despite being tortured by lying on hot sand and getting a heavy rock put on his chest, this person kept saying "Ahad! Ahad!", affirming the oneness of God. The** (\*) *Iqama* was originally entrusted to this man. Umayyah ibn Khattaf once owned this slave of Ethiopian ancestry, who was freed by Abu Bakr, in part due to his beautiful voice. For 10 points, name this companion of Muhammad who in his role as *muezzin* was the first to issue the call to prayer.
ANSWER: **Bilal** ibn Rabah

3. **Melanie Sanford’s group has shown that this sort of reaction can be accomplished at room temperature under visible light using acyloxy-phthalimide initiators. The coupling discovered by Murai and Kakiuchi is a classic example of these reactions. Bis-pinacol-borane substituted on rhodium or ruthenium is a common catalyst for this type of reaction. Amines or imines are used as innate directors in directed ortho metalation, an example of this type of reaction. Shilov showed that a mix of potassium hexa-chloro-platinate mixed with potassium tetra-chloro-platinate can be used to accomplish this task, for example, to (\*)** oxidize Zeise's salt. This process is accomplished by oxidative addition or sigma-bond metathesis, and an example of it would be turning ethane into ethanol. For 10 points, name this type of reaction in which a nonpolar bond found in all alkanes is cleaved and replaced by a reactive group.
ANSWER: **C-H activation** [or **carbon-hydrogen** bond **activation**; or **C-H functionalization**; or other synonyms of the word **activation** that mention both **carbon** and **hydrogen** or **C** and **H**; prompt on borylation; prompt on amination; prompt on carbon-carbon bond formation; prompt on directed ortho metalation or DOM]

4. **This opera’s overture introduces its main theme in D-flat in the trombones, then in F in the horns, then in A in the woodwinds. In one scene in this opera, the chorus chants “We torment you” or “Wir plaugen dir” over a horn ostinato. This opera concludes with the title character kissing goodbye to a ribbon from his love interest, who unsuccessfully attempts to convince a cardinal to convert to Protestantism. In this opera, one character sings another to sleep in the forest with the song “Es** (\*) sungen drei Engel.” An analysis of part of this opera’s *Engelkonzert* prelude ends Book I of the composer’s own *The Craft of Musical Composition*. The protagonist of this opera attempts to make peace during the Peasant’s Revolt, and is transformed into St. Anthony and tempted by the opera’s other characters in various guises, during its climactic scene.For 10 points, name this opera by Paul Hindemith about the creator of the *Isenheim Altarpiece*.
ANSWER: ***Mathis der Maler*** [or ***Matthias the Painter***]

5. **One thinker criticized this theory for failing to explain how the “simplicity” of a thought can supervene on its mental representation. A book devoted to refuting this theory divides theories of science into “superb,” “useful,” and “tentative” categories. J.R. Lucas’s refutation of this position using Gödel’s incompleteness theorem was modified and endorsed in Roger Penrose’s *The Emperor’s New Mind.* One thinker dubbed the combination of this theory with Darwinian evolution and linguistic nativism The New** (\*) Synthesis. The limits of this theory are explored in *The Mind Doesn’t Work That Way* by Jerry Fodor, who nonetheless supports a modified version of this theory. This theory is defended by the “Systems Reply” to a thought experiment in which a man translates symbols in a language he doesn’t understand. For 10 points, the “Chinese Room” experiment was intended to refute what theory, which states that human minds function like Turing machines?
ANSWER: the **computational** theory of mind [or **computationalism**; or **CTM**; or **machine functionalism**; or **Strong AI**; or **Strong Artificial Intelligence**; or **True Artificial Intelligence**; prompt on “functionalism”; prompt on “representational or symbolic theory of mind”]
[Editor’s Note: Computational Theory of Mind and Strong AI are *not*, in fact, the same theory/position. However, I’ve found it pragmatically impossible to distinguish these positions in a tossup, since every major philosophical argument in the past 35 years for/against one of these positions has also been applied to the other. --JL]

6. **While a child, this man’s image was used by Edward Boyd for an ad campaign from Pepsi targeting African-Americans. He earned about $150,000 a year as a lobbyist on behalf of “Baby Doc” Duvalier while working for the law firm of Patton, Boggs, and Blow. The largest ship in the National Oceanic and Atmospheric Administration was named for this politician. Jack Cashill’s book about this man’s “body” argues he demanded bribes in order to lift the trade embargo with Vietnam. After heading Jesse Jackson’s convention team in 1988, he organized the** (\*) 1992 Democratic convention as the first black chairman of the DNC. Conspiracy theorists argue this man was shot in the head and did not actually die in an accident near Dubrovnik. For 10 points, name this first Secretary of Commerce under Bill Clinton, who died in a 1996 plane crash in Croatia.
ANSWER: Ronald “Ron” **Brown**

7. **Localized overheating of this material leads to burn-on, which can proceed by vapor penetration. Coal dust is added to this material to provide a reducing environment and improve the collapsibility. It is mixed with a resin and forced into position by a pneumatic rammer before the resin is allowed to cure in the “air set” process, which allows for an improved surface finish. This material can be mixed with bentonite to improve its refractory properties, and that** (\*) "green" type of it is used to make holding flasks, whose two halves are called the cope and drag. This raw material lies between approximately negative 1 and 4 on the phi scale of particle size, and is often mixed with sodium carbonate and calcium carbonate to lower its melting point. For 10 points, name this most common material for casting molds, which is also the main precursor of glass.
ANSWER: **sand** [prompt on quartz or silicon dioxide or SiO2 or silica, accept **green sand** before “sodium”]

8. **One of this author’s protagonists goes through a shopping mall trying on both women’s and men’s clothes, looking for her reflection in the mirrors which “frightens” and “attracts” her; that character’s most prized possessions are a pair of gold earrings with a crescent moon symbol. The protagonist of another of this author’s novels obsesses over the question “What time is it?”, and kills time by asking a salesgirl for a record he knows does not exist. One of this author’s character is given a passport by an old man named El Hadj, and is a half-deaf Moroccan girl trying to figure out her identity named** (\*) Laila. One protagonist created by this author of *The Fish of Gold* sits in a café recounting to a woman graphic recollections of raping her, an event that she refuses to confirm or deny. After Michele reports him to the police, Adam flees his house and is put in a mental institution, in that novel by him. For 10 points, name this French-Mauritian author of *The Interrogation*.
ANSWER: Jean-Marie Gustave Le **Clezio**

9. **Support intensified for this cause after the arrival of a steamer named *Constitution* led to the Battle of the Square when students insisted on staging forbidden Constitution Day celebrations. This cause grew out of resentment at concessions made in the Convention of Moss that followed a short-lived 1814 war. Support for this cause led to the 1899 abolishment of a flag known as the “herring salad” flag. After this cause succeeded, Oscar II refused to let any of his sons become king of a certain nation, while Oscar’s earlier refusal to compromise led to the resignation of (\*)** Christian Michelsen in support of this cause. The success of this cause ended the House of Bernadotte’s reign over another country, which had been in effect since the earlier Treaty of Kiel. For 10 points, what cause succeeded in 1905, marking the end of the union of Sweden and another Scandinavian country?
ANSWER: **Norwegian independence** [or the **dissolution of** the union of **Sweden and Norway**; accept obvious equivalents, accept anything about **Norway breaking away** from Sweden; do not accept the “dissolution of Denmark and Norway union”]

10. **One character in this play weighs the good omen of getting out of bed backwards that morning with the bad omen of stumbling down the stairs and encountering a weasel. In the opening scene of this play, one character asks the protagonist if Plato will pay his bail, or if Epictetus or Seneca have taught him how to pay his debts without money, shortly before they both get Trapland drunk on sack so that he won’t collect a debt. Every time his father’s lawyer enters the room, the protagonist proclaims himself to be Truth, as part of pretending to be** (\*) insane in order to avoid signing a contract that would sign over his inheritance to his sailor brother Ben. A character named Scandal attempts to cuckold the astrology-loving Mr. Foresight in this play, whose protagonist is heartbroken when Angelica becomes engaged to his father Sir Sampson. For 10 points, name this Restoration comedy about Valentine Legend by William Congreve.
ANSWER: ***Love for Love***

11. **This piece was described at its premiere as 45 minutes of “tugging and pulling” and “patching up and tearing apart of phrases and clichés” in an infamous review by Eduard Bernsdorf. In the recapitulation of this piece’s first movement, the soloist re-enters on an E 4/2** [“four-two”] **chord over a timpani roll on D. Both the first and second movements of this concerto begin in 6/4 time. The composer wrote the words *Benedictus qui venit in nomine Domini* over its *Adagio* second movement*.* Joseph Joachim claimed that the trills in the opening theme of the piece represent the composer’s reaction to hearing of** (\*) Robert Schumann’s attempted suicide. This was the piece played during the infamous concert of 1962 in which Leonard Bernstein disavowed the “remarkably broad tempi” that were about to be taken by Glenn Gould. For 10 points, name this early work for keyboard and orchestra, written 9 years before its composer’s *A German Requiem*.
ANSWER: Johannes **Brahms’ *Piano Concerto No. 1*** *in D minor, Op. 15*

12. **This fictional Michigan alum is the author of a column in a magazine handed out freely to returning veterans called "What Makes *That* News?" This character uses his discharge from the Marines due to a pancreas condition as the basis for the lost novel *Night Wing* and goes on to have some success with his novel *Blue Autumn*. This character's ex-wife, a golfing instructor, chastises him for reading Roethke's "Meditation" at a gravesite. He uncomfortably receives a kiss on the cheek from a fellow member of the** (\*) Haddam Divorced Men's Club. This man travels to Detroit with his girlfriend on an assignment to interview Herb Wallagher, a paralyzed former football player. Prior to the events of his first novel, his wife X divorces him after his son Ralph dies from Reye’s syndrome. For 10 points, name this New Jersey resident, the protagonist of *Independence Day* and *The Sportswriter* by Richard Ford.
ANSWER: **Frank** **Bascombe** [accept either name]

13. **Along with "reprocessing," this term modifies "eye movement" in the name of a treatment designed by Francine Shapiro in which the patient tracks finger movements in his/her field of view. A 2005 paper by B.D. Bartholow and B.J. Bushman argues that this mental phenomenon causes reduced P300 amplitude on EEG readouts from some undergraduate males, due to a shared hobby. A 1995 study by Mullin and Linz shows that inducing this in a lab setting can reduce sympathy for abused women for about three days thereafter. A South African therapist built on the principle of "reciprocal (\*)** inhibition" to develop a therapeutic variant of this process which starts with muscle relaxation and the determination of a "fear hierarchy." Joseph Wolpe developed a "systematic" form of, for 10 points, what gradual process of responding less to threatening stimuli, which may be common society-wide due to violent video games?
ANSWER: **desensitization** [or becoming **desensitized**; or **desensitization** to violence; prompt on exposure therapy, or descriptive answers such as "exposure to violent media" or "playing violent video games"]

14. **During the investigation of events that happened *in* this country, John Cummis put the blame on soldiers receiving the experimental, paranoia causing drug Lariam, a version of Melfloquine. While here, Brady MacDonald declined to stop playing his Game Boy to investigate the sounds of a fatal beating. After allegations that up to 24 soldiers sent to this country had connections to neo-Nazi groups, one offender’s membership in the Klan was described as “youthful folly” by a female Minister of National Defense. As a result of a scandal in this country during Operation (\*)** Deliverance when two foreign soldiers beat a teenager to death, the elite Canadian Airborne Regiment was disbanded after an investigation into the tenure of Defense Minister Kim Campbell. An attempt to capture Mohammed Farrah Aidid in this country led to a 1993 battle. For 10 points, name this African country, where two U.S. Black Hawk helicopters were shot down during the Battle of Mogadishu.
ANSWER: Federal Republic of **Somalia** [or **Somali** Democratic Republic]

15. **Michael Griesgraber's 2008 parody of this treasure of Buffalo's Albright-Knox Art Gallery includes a Dish network satellite and a TV tuned to MTV. According to the artist, a sheet in this painting "must be yellow, because … it arouses something unexpected for the spectator". The artist of this work used purple in order to create a "background of terror", and he wished "to make a chaste picture" of this "slightly indecent study of a nude". A blue (\*)** *pareo* is draped over a piece of furniture in this painting, which probably wasn't painted from a real event since its subject was a practicing Christian. The composition of this painting was inspired by the copy of *Olympia* that the artist had made before leaving France. The alternate title of this painting, *Manao tupapau*, is written on the wall in the background near the title spectre. For 10 points, name this painting of a terrified 14-year-old named Tehura by Paul Gauguin.
ANSWER: *The* ***Spirit of the Dead Watching*** [or *The* ***Spirit of the Dead Watches*** or ***Watched by the Spirit****s* ***of the Dead***; or *The* ***Spirit of the Dead Keeps Watch***; or *The* ***Spector Watches Over Her*** or *The* ***Soul of the Dead Ones is Awake***; accept ***Manao tupapau*** before mentioned]

16. **In the preface to one collection, this author mentions a man who pretends to be so cultured that he can no longer remember the common word for rake, but recalls it soon enough when he steps on one. In order to receive gold through enchantment, one of this author’s characters picks a magical red fern blossom. In one story by this author, the devil is offended by a painter’s satirical depiction of him, leading him to hide in coal sacks, along with a deacon and a** (\*) Cossack. In that story by him, the blacksmith Vakula attempts to woo the vain Oksana by getting her the Tsarina’s slippers. In another story by him, the protagonist cannot remember ritualistically slaughtering the child Ivas to cast a spell to win Ivas’ sister Pidorka. His first collection of stories is introduced by the talkative beekeeper Rudy Panko and includes the stories “Christmas Eve” and “St. John’s Eve.” For 10 points, those stories reflect the Ukrainian heritage of what author of *Evenings on a Farm Near Dikanka*?
ANSWER: Nikolai (Vasilievich) **Gogol**

17. **For a string tracing out a worldsheet, this quantity is proportional to the tension of the string times the area of the sheet, in which case it is invariant under reparametrizations. Because that version named for Nambu and Goto is difficult to quantize, another version of this quantity named for Polyakov is often used instead. A formalism that promotes this quantity to the status of operator and expresses it as the difference of two generators at different times was developed by Julian Schwinger. The exponential of i divided by h-bar times this quantity defines the propagator in the** (\*) Feynman path integral approach. When evaluated as a definite integral, Hamilton’s principal function has the same value as this quantity. According to the Euler-Lagrange equation, the actual path followed by a conservative system is the one that minimizes this quantity. For 10 points, name this functional given by the time integral of the Lagrangian along a system trajectory.
ANSWER: **action**

18. **In this city, automated clock figures named Martin and Martine use a hammer to strike the hours, a reference to a local blacksmith using his hammer to defeat the lord of Thun. An archbishop here, Francois Fenelon, was confined to this city after pissing off the king by writing the satirical *Adventures of Telemachus*. Louis XIV personally captured this city in 1677 for France in the Franco-Dutch War, ending its history of being an independent principality within the Holy Roman Empire. Louise of Savoy and (\*)** Margaret of Austria, the mother and aunt of warring monarchs, negotiated the “Ladies Peace” named for this city. It names a treaty that removed France from the War of the League of Cognac against Charles V. Representatives of two kings met in this city in 1508 to form an alliance under the “Warrior Pope.” For 10 points, what French city names a league organized by Julius II to fight Venice?
ANSWER: **Cambrai**

19. **Very early in the *Kojiki,* a pair of deities even older than Izanagi and Izanami spawn from something resembling these objects. Unkulunkulu, the chief god of the Zulu, emerged from a mass of these. According to Ovid, these objects whispered the secret of King Midas's donkey ears to passersby while he was trying to hide those ears under a cap. The armless, legless "Leech Child" of Shinto myth was placed on a bunch of this substance after death so that its body would be carried away. A central plain known for these features was ruled over by Okuninushi. In Hopi and Navajo creation myths, people used a huge one to get to the** (\*) Fourth World, which we currently inhabit, from the flooded Third World below our feet. Osiris watches over *Aaru*, a "field of" these objects in the Egyptian afterlife. For 10 points, identify this type of plant which Syrinx turned into while she was chased by Pan.
ANSWER: **reed**s [or **rush**es; prompt on wood or plant or stalk]

20. **The best-known textbook by Mark Ptashne focuses on genetic regulation in this organism. Katsura and Hendrix discovered the “tape measure protein” in this organism. Its J protein has high affinity for the maltose transporter maltoporin. An operon in this organism encodes an exonuclease, a protein that binds the RecBCD nuclease, and a protein that anneals single-stranded DNA. That operon consisting of Exo, Gam, and Beta is called** **Red. A protein in this organism binds BOXB at promoter N utilization sites, which prevents** (\*) termination of transcription in those genes. Its genome has two 12-base pair sticky ends, which were developed into cosmid cloning vectors. A binary transcriptional switch in this organism is driven by the cI and cro transcription factors, which govern its lysogenic transition. For 10 points, name this phage discovered by Esther Lederberg, which is identified by a Greek letter.
ANSWER: **lambda** bacteriophage [or **lambda** phage]

21. **This was the first molecule modelled by a potential including a hyperbolic secant raised to the fourth power, which is named for Manning. The HCTH/407+ gradient approximation was developed to model the unusual dimer of this molecule, which has a G144 symmetry group and was once thought by Nelson, Fraser, and Klemperer to have a cyclic structure. Under rotational spectroscopy, this molecule has two Q branches, and its energy splits by 23.8 GHz. Feynman's lectures introduce the** (\*) Rabi formula with the example of this system, which is the characteristic compound modelled by a double-square well potential. It is the simplest member of the C3v point group. One atom tunnels through the plane of the other atoms in this molecule’s umbrella transition, which Charles Townes used as a basis for the first maser. For 10 points, name this lightest trigonal pyramidal molecule.
ANSWER: **ammonia** [or **NH3**]

**Bonuses**

1. Answer the following about Hvergelmir, the water source from which many rivers flow in Norse mythology, for 10 points each.
[10] This dragon chews on a roots of Yggdrasil right by Hvergelmir, and also chews on corpses that show up in Niflheim or Helheim. He keeps making the squirrel Ratatosk send insults up to an eagle atop Yggdrasil. Forever.
ANSWER: **Nidhogg**r [or **Nithhӧgg**r]
[10] This text, which follows a prologue relating the Norse gods to Trojan exiles, describes Hvergelmir as utterly snake-infested. In it, a Swedish king asks three throned gods a lot of questions after Gefjon fools him.
ANSWER: ***Gylfaginning*** [or *The* ***Trick****ing of* ***Gylfi***; or *The* ***Beguiling*** *of Gylfi*; prompt on Prose Edda, of which it's the first section; do not accept or prompt on "Eddas"]
[10] According to the *Gylfaginning*, the waters of Hvergelmir comes from drops that emerge on this unusual surface, then fall and make a pool.
ANSWER: the **antler**s of a giant stag/hart/deer/elk [or the **antler**s of Eikthyrnir; prompt on horns; prompt on Valhalla since the stag stands in Valhalla]

2. This feature, which ends at the J point, occurs too “early” in Wolff-Parkinson-White syndrome. For 10 points each:
[10] Name this feature of an EKG corresponding to depolarization of the ventricles. It is usually observed as two small downward deflections separated by a large upward deflection.
ANSWER: **QRS** complex
[10] The QRS complex occurs after the P wave and PR interval, both of which are driven by the firing of this node, which regulates the heartbeat. It’s considered the natural pacemaker of the heart.
ANSWER: **sinoatrial** node [or **SA** node; or **sinus** node]
[10] What specific condition can be diagnosed by an EKG with the following features? [*Read slowly, pausing between the commas*] A secondary R wave in lead V1, a slurred S wave in leads V1 and V6, and a broad QRS complex that looks like an M in V1 and a W in V6?
ANSWER: **right bundle branch block** [or **RBBB**; prompt on bundle branch block or BBB; obviously, don’t accept or prompt on “left bundle branch block” or “LBBB”]

3. This man is the subject of an epic which begins, “Arms and the heroes...from Lisbon’s shore” in tribute to Virgil. For 10 points each:
[10] Name this character, who narrates his country’s history to the king of Melinde and is opposed by Bacchus in his quest to reach Calicut. He is the protagonist of *The Lusiads*.
ANSWER: Vasco **da Gama**
[10] In *The Lusiads*, Vasco da Gama is helped by this Muslim who greets him at Calicut. He later warns da Gama about a plot to delay his men until ships from Mecca arrive to attack them, and eventually converts to Christianity.
ANSWER: **Monsaide** [MAWN-sie-eed]
[10] This demon appears out of the sea to prophesy da Gama’s downfall, threatening that “eternal war my rocks and storms shall wage.” This “Spirit of the Cape” falls in love with Thetis, but is rebuffed.
ANSWER: **Adamastor**

4. The Franck-Condon principle states that transitions in the energy levels corresponding to this process occur simultaneously with electronic transitions if the wavefunctions overlap spatially. For 10 points each:
[10] Name this process, which is normally governed by either a Hookean potential or the Morse potential. Modes for it include stretching, bending, and scissoring.
ANSWER: bond **vibration** [or word forms; or **oscillation**; or word forms]
[10] The Franck-Condon principle is often explained as: when vibronic wavefunctions are superposed, only this type of transition, where nuclear coordinates don’t move, is favorable. This type of ionization energy is always larger than the adiabatic energy.
ANSWER: **vertical** transition [or **vertical** ionization energy]
[10] According to this rule, which is derived by symmetry considerations, vibronic relaxation by intersystem crossing is only favorable if the type of molecular orbital changes during the electronic transition.
ANSWER: **El-Sayed**’s rule

5. A genre of yellow-backed picture books called *kibyoshi* flourished during this era, as did Chinese-inspired vernacular novels called *yomihon*. For 10 points each:
[10] Name this era from Japanese history, whose major authors include Ihara Saikaku and Santo Kyoden.
ANSWER: **Edo** period [or **Tokugawa** period]
[10] This late Edo-period author of *sharebon* and *gokan* wrote about comic misadventures during a pilgrimage to Ise Grand Shrine in his picaresque novel *The Shank’s Mare*, which is considered one of the first *kokkeibon*.
ANSWER: **Jippensha** Ikku [or **Shigeta** Sadakazu; accept names in either order]
[10] The kibyoshi *Dreamers the Winners* and *Playboy, Roasted à la Edo* both have plots centering on this type of dance-heavy Japanese theatre, whose actors wear elaborate makeup rather than masks.
ANSWER: **kabuki**

6. Identify the following about some structures which were built for World’s Fairs and never taken down, for 10 points each.
[10] A Queens landmark called The Unisphere, which was the symbol of 1964-1965 World's Fair, is a steel globe surrounded by several thin rings all located inside of one of these things. An allegorical representation of the Nile is blindfolded in a celebrated structure of this type in Rome by Bernini.
ANSWER: a **fountain**
[10] The Tower of the Americas was constructed for HemisFair '68, which was held in a city in this state. An art museum in this state contains the Cy Twombly Pavilion.
ANSWER: **Texas**
[10] Bizarrely, Belgian copyright law does not allow people to share any pictures of this building. More bizarrely, it takes the form of a giant unit cell of an iron crystal, with the top sphere containing a restaurant.
ANSWER: The **Atomium**

7. The Woolf Report investigated a riot at one of these locations known as “Strangeways.” For 10 points each:
[10] What type of location was targeted by the reforms of Elizabeth Fry? A notorious example was located in Reading at Berkshire and was the subject of an Oscar Wilde poem.
ANSWER: **prison**s [or **jail**s; or **gaol**s; accept obvious equivalents]
[10] This High Sheriff of Bedfordshire was the first major prison reformer in Britain. He wrote a book called *The State of the Prisons* after touring England and Europe, and was one of the first to advocate for only placing a single prisoner in a jail cell.
ANSWER: John **Howard**
[10] This notorious prison in Southwark mostly contained debtors, such as the father of Charles Dickens, but it was also where Ben Jonson ended up after writing the satirical *The Isle of Dogs*.
ANSWER: The **Marshalsea**

8. Answer the following about the use of digital tools in the study of Greco-Roman classics, for 10 points each.
[10] Tufts University uses the name of this Greek hero for its searchable online classics library. Benvenuto Cellini sculpted this man holding a severed head aloft.
ANSWER: **Perseus** [or **Perseus** Digital Library]
[10] ORBIS, Stanford's geospatial network model of the Roman empire, can calculate how many of these silver Roman coins it cost to travel between any two cities. They were worth more than *sesterces* and inspired a modern Islamic world currency.
ANSWER: ***denarii*** [or ***denarius***][The Arabic analogue is the *dinar*.]
[10] This huge reference set of classics texts, first published in 1911 at Harvard by its namesake Jewish donor, was digitized in 2014. On paper, it exists as 500+ tiny-ass volumes with green covers for Greek texts and red for Latin.
ANSWER: **Loeb Classical Library**

9. Sometimes, religions have a small number of dedicated initiates and a much wider body of believers outside those few. For 10 points each:
[10] This secretive faith in the Levant consists mostly of unlearned *juhhal,* and keeps most of its teachings secret among initiates called *uqqal*. Their symbology uses a set of five colors.
ANSWER: **Druze** [or **muwahhidun**; or **Durzi**; or **Druzi**m]
[10] Most Manicheans were of this layperson class, which received teachings passively without having to follow the strict prohibitions of the “elect”. The *credentes* were the Cathar analogue of this class.
ANSWER: **hearers** [or **listener**s; or **auditor**es; or **audientes**; or **katechoumen**oi; or **samu’un**; or **niyoshagan**; or **nu sha yen**; or **t’ing-che**]
[10] This faith has a proselytic, public “exoteric” practice and less common, meditative “esoteric” practice, though individuals *can* do both. It teaches that we are in a “Third Age” of spiritual redemption.
ANSWER: **Cao Dai** [or **'Đại Đạo Tam Kỳ Phổ Độ**]

10. She claimed that many modern disorders were actually just manifestations of the 19th-century condition of hysteria in *Hystories: Hysterical Epidemics and Modern Media.* For 10 points each:
[10] Name this feminist literary critic, who wrote *A Literature of Their Own* and *Sexual Anarchy*, and coined the term “gynocritic” for critics “freed from the linear absolutes of male literary history.”
ANSWER: Elaine **Showalter**
[10] In this 1979 essay, Showalter divides the history of women’s literature into the feminine, feminist, and female periods. It advocates improving female representation with the dominant male tradition, and establishing a parallel female tradition.
ANSWER: “**Toward a Feminist Poetics**”
[10] In *Toward a Feminist Poetics*, Showalter praises this poet of “Song” for challenging the patriarchal idea that daughters must reject their mothers. She also wrote “Aunt Jennifer’s Tigers” and “Diving into the Wreck.”
ANSWER: Adrienne (Cecile) **Rich**

11. This kingdom’s most famous general, Gyebaek, made his heroic last stand with only 5,000 soldiers at Hwangsanbeol. For 10 points each:
[10] Name this kingdom that dominated the southwest portion of a peninsula during the Three Kingdoms period. It increased its power under king Goi.
ANSWER: **Baekje** [or **Paekche**]
[10] Baekje was founded by this former prince of Goguryeo and son of Jumong. He fled Goguryeo to found his own kingdom when his older brother, Yuri, was named as the successor to Jumong.
ANSWER: King **Onjo**
[10] Baekje was defeated in 660 by a Silla-Tang alliance. This woman was the empress consort within the Tang dynasty at the time. She later became the empress regnant during the brief Zhou dynasty that interrupted the Tang.
ANSWER: Empress **Wu** Zetian [or **Wu** Zhao; or **Wu** Hou]

12. This painting, finally completed during the reign of Pope Clement VII, contains a man in a yellow sash grabbing a column with a sign reading "IAM TANDEM CHRISTUM LIBERE PRO FITERI LICET". For 10 points each:
[10] Identify this painting, completed by Giulio Romano and Gianfrancesco Penni. This painting is located in a room which also depicts its title figure's baptism and vision.
ANSWER: *The* ***Donation*** *of* ***Constantine*** [or *The* ***Donation*** *of* ***Rome***]
[10] *The Donation of Constantine* and *The Donation of Rome* were among the paintings finished by the assistants of this Renaissance master, who also painted *The Parnassus* for the Stanza della Segnatura.
ANSWER: **Raphael** [or **Raffaello** Sanzio da Urbino]
[10] This painting, mostly the work of Romano, lends its name to another of the Raphael Rooms. A nude man carries another nude on his back away from the title conflagration on the left of this canvas.
ANSWER: *The* ***Fire in the Borgo***

13. Along with quality uncertainty, the existence of this condition can drive good cars out of the used car market and even cause similar markets to shrivel into nonexistence according to George Akerlof’s paper “The Market for Lemons”. For 10 points each:
[10] Name this situation in which at least one party to a putative economic transaction knows something the other party doesn’t know.
ANSWER: **asymmetric**al **information** [or **information**al **asymmetry**]
[10] Michael Spence proposed this strategy as a way to mitigate the harms of information asymmetry in a 1993 paper about it in the job market. James Bartholomew proposed a type of it which creates the appearance of personal virtue.
ANSWER: **signal**ing [or virtue **signal**ing]
[10] Information asymmetry can affect this type of economic transaction characterized by agency problems and costly endogenous claim enforcement. Samuel Bowles and Herbert Gintis theorized about them to critique outdated Walrasian assumptions.
ANSWER: **contested exchange**s

14. Answer the following about the diffraction of electrons in crystals, for 10 points each.
[10] This experiment recorded sharp peaks in the angular dependence of electron scattering from the surface of a nickel crystal, thus confirming de Broglie’s hypothesis of wave-particle duality.
ANSWER: **Davisson-Germer** experiment
[10] This theoretical construct is the locus of all the points in reciprocal space which satisfy Laue’s equations. The radius of this construct is inversely proportional to the wavelength of the electrons used.
ANSWER: **Ewald** sphere [or **Ewald** circle]
[10] These features which are often seen in electron crystallography arise from the inelastic scattering of electrons at the Bragg angle within a lattice. These structures occur in pairs, with one termed excess and the other deficient, and instead of becoming brighter or dimmer, they move across the image as a sample is rotated.
ANSWER: **Kikuchi** lines [or **Kikuchi** cones]

15. This essay was originally entitled “The Composer as Specialist.” For 10 points each:
[10] Name this essay by Milton Babbitt published in *High Fidelity* that claimed that “advanced music” will cease to develop if it is subject to the tastes of the public.
ANSWER: “**Who Cares If You Listen?**”
[10] Babbitt was the first to use this term to describe the property of hexachords that form aggregates with one or more of their transformations.
ANSWER: **combinatorial**ialty
[10] In the 1950s, Babbitt became the first to use the Mark II, one of these instruments located at Columbia University. One of these instruments made by Moog was used for Wendy Carlos’ album *Switched-On Bach.*
ANSWER: **synthesizer**

16. This fire was supposedly so strong that it reached 2,000 degrees Fahrenheit and caused trees to explode upon contact. For 10 points each:
[10] Name this devastating fire in eastern Wisconsin that was overshadowed by the Great Chicago Fire that took place on the same day. It currently remains the deadliest firestorm in American history by number of lives lost.
ANSWER: **Peshtigo** fire
[10] This congressman and notable pseudoscientist claimed that both the Great Chicago Fire and the Peshtigo fire were caused by Biela’s comet. He theorized civilizations were descended from the title society in his book *Atlantis: The Antediluvian World*. More seriously, he wrote the preamble for the Omaha platform.
ANSWER: Ignatius Loyola **Donnelly**

10] The Omaha platform was the program of this party in 1892, which nominated James Weaver for the presidency. It shifted to a more single-issue, pro-free silver platform four years later.
ANSWER: The **People**’s Party [or **Populist** Party]

17. Scorpus became a superstar in this activity, as did Gaius Appuleius Diocles, who won the modern equivalent of fifteen dollars by engaging in it. For 10 points each:
[10] What dangerous activity within ancient Greece and Rome frequently utilized objects known as quadrigas?
ANSWER: **chariot racing** [prompt on equestrian activities; prompt on horse racing; prompt on racing]
[10] Chariot racing was a big part of the ancient Olympic Games, as well as these other games held the year before and after the Olympics. Winners received a wreath of celery at these games, which were legendarily founded either by Heracles or to honor the death of the infant Opheltes.
ANSWER: **Nemean** Games
[10] This Spartan, a daughter of Archidamus II, is apparently the first woman to win at the Olympics, having won two chariot races. "Winning" in that case meant owning and training the chariot team, as women were strictly banned from even watching the games.
ANSWER: **Cynisca** [or **Kyneska**]

18. This poem describes “The silent courts, where night and day / Into their stone-carved basins cold / The splashing icy fountains play.” And its speaker hears a whisper that asks “What dost thou in this living tomb?” For 10 points each:
[10] Name this poem set in a Carthusian monastery in the Alps where the narrator wanders “between two worlds, one dead / the other powerless to be born.”
ANSWER: “**Stanzas from the Grande Chartreuse**”
[10] “Stanzas from the Grand Chartreuse” is by this Victorian poet of “The Scholar-Gipsy,” who popularized the modern usage of the term “Philistine” in *Culture and Anarchy*.
ANSWER: Matthew **Arnold**
[10] These lectures by Arnold advocate for the use hexameter meters in English poetry, and attack versions of *The Iliad* produced by the likes of Alexander Pope and F.W. Newman.
ANSWER: ***On Translating Homer***

19. All second-order linear ordinary differential equations can be put into this equation's form by multiplying by an integrating factor. For 10 points each:
[10] Name this equation which can be written in terms of p of x, q of x, a density function r of x, and an eigenvalue lambda. It is named for two French mathematicians.
ANSWER: **Sturm-Liouville** equation [accept either order]
[10] Sturm-Liouville equations have boundary conditions which satisfy a property by this name, in which each boundary condition involves only one of the boundary points. A technique of a similar name used to solve the heat equation allows for the equation to be rewritten so that the two variables are on opposite sides of the equation.
ANSWER: **separability** [accept word forms involving **separation** of some sort]
[10] A straightforward way to find solutions to the Sturm-Liouville equation is to use this numerical method, which is equivalent to applying variation of parameters to a space of functions.
ANSWER: **Galerkin** method [accept more specific answers, such as **Ritz-Galerkin** method or **Petrov-Galerkin** method]

20. A paper titled for “the conscience” of this character argues that Jonathan Edwards’s moral code was worse than Heinrich Himmler’s. For 10 points each:
[10] Name this character, the subject of a 1974 Jonathan Bennett paper which examines what happens when “bad morality” comes into contact with sympathy.
ANSWER: **Huck**leberry **Finn** [accept either]
[10] Hume argued that moral sentiments derive from sympathy in this 1740 work, which includes the section “Of Morals.” It was partly cannibalized into the later *An Enquiry Concerning Human Understanding*.
ANSWER: *A* ***Treatise of Human Nature***
[10] In “Of Morals,” Hume argues that moral evaluations are not ideas, but these other forms of perception, with which ideas are contrasted.
ANSWER: **impression**s

21. A conspiracy theory suggests this man was poisoned by a British spy named Edward Bancroft. For 10 points each:
[10] Name this first U.S. envoy to France. This Connecticut politician was recalled to the U.S. amid questions about his finances and was further embarrassed when his private letters suggesting the American Revolution was hopeless were published.
ANSWER: Silas **Deane**
[10] Deane was accused by Arthur, a member of this notable Virginia family. Another member, Harry, eulogized George George Washington as “first in war, first in peace, and first in the hearts of his countrymen.”
ANSWER: **Lee**
[10] While an envoy, Deane recruited numerous soldiers residing in France to the American cause. This Bavarian born major general was a mentor to Lafayette and died at the Battle of Camden, where he was shot multiple times and bayoneted by British troops.
ANSWER: Johann de **Kalb** [or Johann **von** **Robais**]