

Stevenson Memorial Tournament 2018

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Packet 14 (Finals Packet 1)

Tossups:

1. These structures can be “black boxed” and linked through “punctualization” according to a theory developed in part by John Law. Yochai Benkler wrote about the “wealth” of these things, and Bruno Castell’s *The Information Age* discusses the rise of a society based around them. Nonhuman “artifacts” can appear in these structures as part of a theory developed by Michel Callon and Bruno Latour that is named for actors and these systems. The (*) size of these structures was investigated in an experiment that asked Midwesterners to forward a package intended for a Boston address. That “small world” experiment conducted by Stanley Milgram found the average path length in these structures to be five and a half. For 10 points, name these systems of connections between people, exemplified by Facebook.

ANSWER: social networks [or more specific answers such as small-world networks or actor-networks; prompt on related answers such as groups or connections or social systems]

<JB Social Science>

2. The high housing prices caused by this event led to the practice of providing music and bathtub gin to paid guests at “rent parties.” Railroad workers secretly distributed copies of the *Chicago Defender* newspaper in order to promote this event. Isabel Wilkerson’s *The Warmth of Other Suns* is the most popular history of this event. The most serious of the riots resulting from tensions due to this event began after a boy was stoned to death while swimming at a Chicago beach. This process is often compared with the earlier (*) exodusters movement, and its “second” wave lasted from 1940 to 1970. This event is the subject of a Jacob Lawrence painting sequence, which depicts sharecroppers boarding trains to cities like Chicago and New York. For 10 points, name this mass movement of African-Americans from the South to Northern cities.

ANSWER: Great Migration [prompt on descriptions like African-American migration to the North]

<JB American History>

3. This word describes a form of light scattering which occurs due to the divergence of a systems compressibility and the consequent density fluctuations acquiring magnitudes close to the wavelength of light. According to the van der Waals equation, the parameter $\frac{8A}{27RB}$ gives a temperature described by this word. The spinodal and binodal curves intersect at temperatures described by this word. In aerodynamics, this word describes an angle also known as the (*) “stall angle” which gives the maximum lift coefficient. Caffeine is often extracted from coffee beans using carbon dioxide which is above a point described by this word. At that point, the liquid and vapour phases of a substance become indistinguishable. For 10 points, give this word which describes an angle of incidence above which total internal refraction occurs.

ANSWER: critical

<AR Physics>

4. An essay titled for this theory argues that concepts about private experiences are essentially intersubjective by imagining a tribe of “Ryleans” who have no words for mental states. A philosopher opposed this theory’s belief that all sentences have their own verification conditions with a view now called “confirmation holism.” This school of thought’s belief in a foundation of non-inferential knowledge is dubbed the “myth of the given” in a Wilfrid Sellars paper titled for this theory (*) “and the Philosophy of Mind.” A 1951 paper attacks this theory’s use of reductionism and the analytic–synthetic distinction. W. V. O. Quine discussed “two dogmas” of this theory, whose proponents oppose the concept of “innate ideas.” For 10 points, name this theory supported by John Locke, which holds that knowledge derives from sense experience.

ANSWER: empiricism [accept word forms]

<JB Philosophy>

5. Seven bishops of these people legendarily fled their homeland after an invasion and set up seven settlements on the mythical island of Antilia. These people temporarily diverted the river Busentus and executed the captives whom they had dig a grave in its bed in order to hide the tomb of one king. The Balti Dynasty ruled these people. These people were defeated by Tariq ibn Zayid at the Battle of Guadalete, where their king Roderic was killed. (*) Pelayo, a nobleman of these people, was victorious at the Battle of Covadonga and carved out the Kingdom of Asturias. A few years before they established a capital at Toulouse, this people besieged a capital city under their leader Alaric. For 10 points, name these people who ruled a kingdom on the Iberian Peninsula and sacked Rome in 410.

ANSWER: Visigoths [prompt on Goths]

<GP European History>

6. *Description acceptable.* In a film based on one of these texts, the protagonist screams as a barrage of real arrows shot by trained archers thud into the wall behind him. In another film based on one of these works, a character demonstrates the importance of unity by showing that three arrows are more difficult to break together than separately. A film about the warlord (*) Hidetora Ichimonji is based on one of these texts, and includes a scene where Saburo is exiled before reconciling with his father. Akira Kurosawa’s *Throne of Blood* and *Ran* are based on these works, as is a musical that includes the song “Somewhere” and is about two lovers caught between the Sharks and the Jets. For 10 points, *West Side Story* is based on one of what kind of texts that include *King Lear* and *Romeo and Juliet*?

ANSWER: plays by Shakespeare [accept works of Shakespeare or anything indicating something written by William Shakespeare or the Bard of Avon; prompt on plays]

<JK Other Arts (Film)>

7. In order to convince this character to capitulate to their will, women tell this character stories of Cleopatra reducing generals “to the servility of slaves.” Madame de Breville allows this Bonapartist character to use her charcoal foot warmer. This character responds to a man’s request by exclaiming “I never will... never! Never! Never!”, although two nuns referred to as “the Sisters” tell this character that “the end (*) justifies the means” in regards to that same request. At the end of the short story titled for this character, Cornudet whistles the Marseillaise as this woman weeps because no one will share their lunch with her. For 10 points, name this rotund prostitute who is pressured into sleeping with a Prussian officer in a Guy de Maupassant short story.

ANSWER: Elizabeth Rousset [accept either underlined name; or Boule de Suif; or Ball of Fat]

<OL European Literature>

8. **It's not tumorigenesis, but expression of miRNA-146a is upregulated during this process. Receptors for TNF-alpha and IL-1 can induce this process via an NF-kappa-B dependent pathway. An important class of drugs against this process act by inhibiting the conversion of arachidonic acid to prostaglandins by (*) cyclo-oxygen-ases.** The binding of antigens to the paratopes of IgE on the surface of mast cells causes the release of histamine and other mediators of this process. Aspirin and ibuprofen are examples of NSAIDs ["EN-seds"] that act against this process. Conditions involving this process are denoted by the suffix "-itis." For 10 points, name this non-specific immune response where tissue becomes hot, painful, red and swollen.

ANSWER: inflammation

<EM Biology>

9. **A group from this country, the Nazareth Baptist Church, threatens legal action against companies that try to trademark an instrument allegedly invented by its founder. Missionaries sent from Zion, Illinois, to this country by John Alexander Dowie founded its Zionist Churches. A theology developed by a clergyman from this country is named for a term he used to mean "I am because we are." Islam was introduced to this country by the (*) Malay population of one of its coastal cities. In the 1850s, a teenage prophetess promoted a mass cattle killing as part of a millenarian movement among this country's Xhosa people. Ubuntu theology was developed by an Anglican bishop from this country, Desmond Tutu.** For 10 points, name this country home to the diocese of Cape Town.

ANSWER: South Africa

<JB Religion>

10. **This writer compared the "linked chapter" and "direct portrayal" forms of prose in an essay analyzing "National Character in Fiction." In one speech, this author claimed that "literature has no duty to the masses" while advocating "cold literature." A honeymooning couple visit the Temple of Perfect Benevolence in this writer's story "The Temple." Margarethe, a Jewish woman, dates the narrator of one of this man's novels, a Francophile living in (*) Hong Kong. In a play by this man, Hothead and Glasses wait ten years before realizing their bus will never come. Characters named "I" and "You" appear in a novel based on this author's misdiagnosis of lung cancer.** For 10 points, name this author of *Buying a Fishing Rod for my Grandfather* and *Soul Mountain*.

ANSWER: Gao Xingjian

<OL World Literature>

11. **The ERNIE computer, introduced in the 1950s, was made to perform this task. The TestU01 library contains tests like "Small Crush" and "Big Crush" that judge the quality of this process. One algorithm for performing this task uses a sequence of integers such that $x\text{-sub-}n\text{-plus-1}$ equals $x\text{-sub-}n$ squared modulo some large M . In C++, this task can be performed with an mt19937 object. Linear-feedback shift (*) registers can do this task very quickly, and are the basis for a very popular algorithm for doing this, the Mersenne Twister. This process relies on a starting "seed" value. "True" methods for doing this process can involve tracking radioactive decay or atmospheric noise.** For 10 points, name this process that computers can use to simulate events like flipping a coin or rolling dice.

ANSWER: pseudorandom number generation [accept PRNG; accept any answer that conveys generating random numbers]

<DM Computer Science>

12. **Composer and type of work required. The final movement of a G minor one of these pieces was based on the opening chorus of an earlier piece by its composer, *Es wartet alles auf dich*. One of these pieces was written in its composer's efforts to become Saxony court composer and is now referred to as "for the Dresden court." One of these pieces is grouped into four divisions, the second of which is a (*) Credo titled "Symbolum Nicenum" with a symmetrical structure that includes a "Crucifixus" in 3/2 time in the center. One of these pieces includes a "Gratias agimus tibi" in its first section, which is nearly replicated in its ending movement, the "Dona nobis pacem." That piece is named for being in the key of B minor. For 10 points, name these pieces that open with Kyrie ["KEE-ree-ay"] movements and were written by the composer of *Tocatta and Fugue in D minor*.**

ANSWER: **masses** by J. S. **Bach**

<YFL Music and Opera>

13. **This character sought the hand of King Pittheus's daughter Aethra, but was exiled before the wedding because he killed his brother. Because of the principle of *xenia*, the King of Tiryns sent this man to his father-in-law in Lycia bearing a sealed letter. This hero from Corinth fled from a group of women lifting their skirts at him after Poseidon flooded the plain of Xanthus. In Book 6 of the *Iliad*, (*) Diomedes refuses to fight Glaucus after learning that he is the grandson of this man, whom Diomedes' own grandfather Oeneus had hosted. This man's hubris led to his death when Zeus sent a gadfly to sting the animal that this man found at the Pirene well and tamed with a golden bridle from Athena. For 10 points, name this tamer of Pegasus who slayed the Chimera.**

ANSWER: **Bellerophon** [or **Bellerophon**tes]

<JK Myth>

14. **A leader of this island symbolically moved the blindfold of the figure on its flag and was forced into exile after his defeat the Battle of Ponte Novu. A conflict on this island caused a namesake crisis in Britain, which was documented by James Boswell in a book titled "An Account of [this island]." Pope Boniface VII gave rights to this island to King James the Just of Aragon. This island's namesake republic was proclaimed in 1755 by Pasquale (*) Paoli, who opposed the vendettas often fought here. Andrea Doria fought the French occupation of this island in 1553 while it was owned by the Republic of Genoa. A man born on this island was once exiled on nearby Elba. For 10 points, name this French island in the Mediterranean, the birthplace of Napoleon Bonaparte.**

ANSWER: **Corsica**

<GP European History>

15. **In one novel, one of these people experiences amnesia that causes him to forget his wife Kitty and fall back in love with Margaret Grey. That novel by Rebecca West is titled for the "Return" of one of these people. In another novel titled for one of these people, the narrator learns that his wife has been lying about a heart condition that makes her unable to have sex, and is having an affair with a man she met at (*) Nauheim. In that novel titled for one of them, a girl repeats "I believe in an omnipotent God" and "shuttlecocks" after a mental breakdown. Nancy Rufford is in love with one of these people, whose expensive affairs include one with Florence Dowell, in a novel titled for him that opens "This is the saddest story I have ever heard." For 10 points, Ford Madox Ford wrote about a "good" person of what type?**

ANSWER: **soldier** [accept *Return of the Soldier* or *The Good Soldier*; accept answers like veteran until "titled for" is read, but prompt afterwards; prompt on Captain]

<JK British Literature>

16. Leticia Alonso wrote of one of this artist's paintings that "the viewer ends up identifying with the represented object, and thus the distance between both of them is dissolved." This artist depicted two lesbian lovers lying underneath vine-like branches in *Two Nudes in the Forest*, and the couple reappears in another of this artist's paintings that also shows a seashell punctured with bullets. A volcano with a skyscraper emerging from it floats in a (*) bathtub in this artist's *What the Water Gave Me*. Two seated depictions of this painter clasp hands and are connected by a vein in a double self-portrait. Self-portraits by this artist include *The Broken Column* and often feature animals like monkeys. For 10 points, name this unbrowed artist who was married to Diego Rivera.
ANSWER: Frida **Kahlo** [or Magdalena Carmen Frida **Kahlo** y Calderón or Frida **Kahlo** de Rivera]
<JK Painting and Sculpture>

17. A woman known as La Carlota was executed for planning a revolt of workers producing this commodity during the 1844 "Year of the Lash." A widely-copied system for producing this commodity, which made use of a machine called the *trapiche*, was developed by the European colonizers of West African islands such as Cape Verde and Madeira. A William Fox pamphlet spurred a 1790s boycott campaign against this commodity in England, where (*) abolitionists protested against the slave labor used to produce it in Barbados. A liquid refined from this commodity was shipped from the West Indies to Boston, where it was used to make rum, in one leg of the triangle trade. For 10 points, name this commodity extracted from namesake beets and cane, whose liquid form is molasses.
ANSWER: **sugar** cane
<JB World History>

18. In an alternate ending to this poem, a character forget her name after meeting Louis under an oak tree. That adaptation by Felix Voorhies differs from a version of this poem in which Michael the Fiddler's performance is interrupted by townspeople shouting "Death to these foreign soldiers!" In this poem, Father Felician likens two characters to the "Prodigal Son" and "Foolish Virgin" before a woman leaves Grand-Pre to "follow the Indian trails to the (*) Ozark Mountains." The blacksmith Basil's son is found at the end of this poem, which begins by introducing a "Tale of Love" in "the forest primeval." For 10 points, name this epic poem about an Acadian woman and her love for Gabriel Lajeunesse written by Henry Wadsworth Longfellow.
ANSWER: "**Evangeline**: A Tale of Acadie"
<OL American Literature>

19. This organization's leaders signed a letter telling its members that "none of us operates in a vacuum," and that "you have real power to make a difference." A member of this *national* organization quipped that Donald Trump was an asset "if you remove the E-T," and another stated that "You're grown men. Do what you want" was his stance on the American flag. This organization's current head, (*) Adam Silver, has been contrasted with another organization's leader Roger Goodell, whom people have accused of failing to protect players like Colin Kaepernick. Laura Ingraham was accused of racism after calling a player from this league "barely intelligible" and telling him to "shut up and dribble." For 10 points, name this sports league whose players include LeBron James.
ANSWER: **NBA** [or **National Basketball Association**; prompt on more specific answers like the **WNBA** or the **Eastern Conference** or teams like the **Cavaliers**]
<JK Current Events>

20. **The most common agostic interactions involve a C–H bond in a position denoted by this letter relative to the metal atom. This letter also denotes a type of elimination reaction which results in the kinetic instability of transition metal-alkyl complexes. Thermodynamic energy equals the derivative of the logarithm of its partition function with respect to a quantity denoted by this letter. That quantity is equal to one over the product of (*) Boltzmann’s constant and temperature. The top-left corner of a Ramachandran plot corresponds to a protein structural motif denoted by this letter. Antiparallel strands are connected laterally by hydrogen bonds to form that motif. For 10 points, give this Greek letter that names a type of “pleated sheet” contrasted with an alpha helix.**

ANSWER: **beta**

<EM Chemistry>

21. **In a criticism of this psychologist, one writer pointed out that this man’s definition of stimulus control, examples of which include responding to music by saying “Mozart,” leads to the term stimulus losing all objectivity. Those criticisms were responded to by a student of this psychologist, Kenneth MacCorquodale. One work by this psychologist claims that science “does not dehumanize man, it dehomunculizes him.” This psychologist created a (*) three-term contingency model for psychological observations. One work by this psychologist describes verbal modifiers called autoclitics and verbal requests called mands. This man used a cumulative recorder to observe the rate of responses and created a namesake variant of Thorndike’s puzzle box to study operant conditioning. For 10 points, name this American behaviorist psychologist.**

ANSWER: B. F. **Skinner** [or Burrhus Frederic **Skinner**]

<YFL Psychology>

Bonuses:

1. Years after leaving his highest office, this politician represented the Cherokee Nation against the State of Georgia. For 10 points each:

[10] Name this man who served as attorney general under Monroe and John Quincy Adams. At the first ever presidential nominating convention, this man was chosen as the Anti-Masonic Party candidate with Amos Ellmaker as his running mate.

ANSWER: William **Wirt**

[10] Anti-Masonic Party nominated Wirt for this presidential election. This election saw Henry Clay's second run for the president, as well as the election of Martin van Buren to Vice President.

ANSWER: **1832** Presidential Election

[10] In Henry Clay's final run for the presidency, he lost to this former Speaker of the House and Governor of Tennessee. This man's running mate in that election was George M. Dallas.

ANSWER: John Knox **Polk**

<AN American History>

2. A painting in this form oddly includes five nude men relaxing behind the Holy Family. For 10 points each:

[10] Give this term for circular artworks from Renaissance art, which include a sculptural one Michelangelo made for Taddeo Taddei and a painted one he completed for Agnolo Doni.

ANSWER: **tondo**

[10] Another circular form for painting in Renaissance Italy were the *desco da parto*, trays given as gifts after these events. Sandro Botticelli's most famous painting is titled for this sort of event "of Venus."

ANSWER: **birth** [accept equivalents]

[10] In a story reported by Giorgio Vasari, this artist sent Pope Benedict XI a perfect circle he had drawn without moving his arm. This early Renaissance painter, the student of Cimabue, did the Arena Chapel paintings.

ANSWER: **Giotto** di Bondone

<JB Painting and Sculpture>

3. The protagonist of this story enjoys browsing a dead priest's library in his spare time. For 10 points each:

[10] Name this short story in which the lovestruck narrator decides against buying something for Mangan's sister from a bazaar.

ANSWER: "**Araby**"

[10] "Araby" is included in this author's short story collection *Dubliners*. He also wrote about Gabriel Conroy watching snow fall "upon all the living and the dead" in "The Dead."

ANSWER: James **Joyce**

[10] In "Araby," the narrator stumbles upon this man's novel *The Abbot*. Characters in his "Boat Song" repeatedly exclaim "Roderigh Vich Alpine dhu, ho! Ieroe!" as they "row for the pride of the Highlands."

ANSWER: Sir Walter **Scott**

<OL British Literature>

4. Ion-exchange resins can remove a distinguishing characteristic from this substance, by removing certain ions from it. For 10 points each:

[10] Name this liquid substance, which has high concentration of multivalent cations from dissolved calcium and magnesium carbonates, and produces scum buildup on pipes.

ANSWER: **hard water** [prompt on water or H₂O]

[10] One compound which strongly binds the calcium ions in hard water is this hexadentate ligand often used in complexometric titrations.

ANSWER: **EDTA** [or **ethylenediaminetetraacetic acid**]

[10] EDTA was formerly used to separate mixtures of these ions through ion-exchange chromatography. The quarter-shell and three-quarter shell effects lead to deviations in the trend of the energies required to form these ions.

ANSWER: **lanthanide** ions

<AR Chemistry>

5. The *abhisheka*, a bathing of the central object in substances such as ghee, water, and sesame oil, is one step of this ritual. For 10 points each:

[10] Give this term for the Hindu ritual of worshipping a god, usually performed before an image at home or in a temple.

ANSWER: **puja**

[10] Food offered to a god during a puja is referred to by this Sanskrit term. It is typically eaten by the worshippers after the puja as a symbol of the divine blessing.

ANSWER: **prasada**

[10] The burning of sticks of this stuff, called *dhupa*, is a common feature of pujas. These substances that produce a sweet smelling smoke when burned include myrrh resin.

ANSWER: **incense**

<JB Religion>

6. Luster upsets this character by taking him to a golf course. For 10 points each:

[10] Name this disabled member of the Compson family. He is devastated by the marriage of his sister, who “smelled like trees,” and the child she had with Dalton Ames. He narrates the first part of a novel.

ANSWER: **Benjamin** Compson [or **Benjy**]

[10] Description acceptable. Benjy’s sister Caddy does this while playing in a tree and creek, symbolizing her impurity. Her brothers Jason and Quentin, both weirdly obsessed with her virginity, chastise her for doing this.

ANSWER: **muddying** her **drawers** [or anything that suggests getting her **underwear dirty**; prompt on less specific clothing]

[10] Both Benjy and Caddy appear in *The Sound and the Fury*, a novel by this author. This author set much of his work about the Compson family in Yoknapatawpha County.

ANSWER: William **Faulkner**

<OL American Literature>

7. This city is the site of Empress Market and the Port of Bin Qasim. For 10 points each:

[10] Name this third largest city in the world, and capital of the Sindh province. It is regularly ranked as one of the most unlivable cities in the world due to poor sanitation and crime.

ANSWER: **Karachi**

[10] Karachi is the largest city in this country, which currently disputes ownership over the Kashmir region with its eastern neighbor, India. Its capital is Islamabad.

ANSWER: Islamic Republic of **Pakistan** [accept **Islam-i-Jumhuriyah Pakistan**]

[10] This pass is a major tourist destination in Pakistan, located by the city of Peshawar and near the border with Afghanistan. It was a vital route on the Silk Road and was used by invaders to reach the Indian subcontinent.

ANSWER: **Khyber** Pass

<GP Geography>

8. In the mythology of the Fon, the Great God Mawu-Lisa sends the first humans to Earth with one of these animals to protect them. For 10 points each:

[10] Name this animal that frequently serves as a messenger for the gods in West African mythology. Agemo was one of these animals, and another of them tried to deliver the message of immortality to mankind, but arrived too late.

ANSWER: **chameleon** [prompt on lizard]

[10] Agemo is the messenger of this supreme god of the Yoruba [**YO-roo-ba**] pantheon. In one story, he helps this orisha defeat the sea goddess Olokun in a cloth-making contest.

ANSWER: **Olorun** [or **Olodumare**]

[10] Olorun sent Agemo to check up on the orisha Obatala while he was creating this thing using a snail shell and a hen. In Greek mythology, Gaia was the goddess of this thing.

ANSWER: **land** [or **earth** or the **world**; do not accept or prompt on “the Universe”]

<JK Myth>

9. This man commented “They shoot like pigs” after a failed assassination attempt. For 10 points each:

[10] Name this French president who was targeted by the OAS in a failed assassination attempt for making peace during the Algerian War. He established the Fifth Republic and led the Free French forces during World War II.

ANSWER: Charles **de Gaulle**

[10] De Gaulle’s negotiations involved Ahmed Ben Bella, the leader of this Algerian party that led the independence movement. It was the country’s only legal party until 1989.

ANSWER: **FLN** [or **National Liberation Front**; or **Front de Libération Nationale**]

[10] After de Gaulle signed the Evian accords to grant Algeria independence, many of this group of French residents of the country were massacred in Oran, helping to spur the exodus of nearly one million of them to France.

ANSWER: **pid-noirs** [or **black feet**; prompt on colons]

<GP European History>

10. Unlike atomic layer deposition, it cannot be run at low temperatures. For 10 points each:

[10] Name this common microfabrication process where a substrate is exposed to volatile precursors which react with its surface to form a thin layer.

ANSWER: **chemical vapor deposition** [or **CVD**]

[10] One method for allowing CVD at lower temperatures is to use strong electric fields to form this state of matter at the substrate surface. This “fourth state of matter” consists of an ionised gas.

ANSWER: **plasma**

[10] CVD is often used to produce these quasi-zero-dimensional semiconductor nanoparticles. They display fluorescence at a wavelength proportional to their size.

ANSWER: **quantum dots** [or **QDs**]

<EM Physics>

11. This country was the site of political protests after police shot protesters at Masan Harbor. For 10 points each:

[10] Name this country whose April Revolution forced its first president to resign. A president of this country who took power in a coup ordered the Gwangju Massacre in 1980.

ANSWER: **South Korea** [or **Republic of Korea**; prompt on **Korea**]

[10] Another April Uprising took place in this country against Ottoman rule in 1876. This country would also be the site of the Russian victory at Shipka Pass during the Russo-Turkish War of 1877 to 1878.

ANSWER: **Bulgaria**

[10] This man wrote the April Theses while returning from exile in Switzerland. During his country’s civil war, his armies crushed the Kronstadt and Tambov Rebellions, and he also introduced the New Economic Policy.

ANSWER: Vladimir **Lenin** [accept Vladimir Ilyich **Ulyanov**]

<GP World/Other History>

12. A paper on this topic imagines a situation in which the narrator needs the lifesaving touch of Henry Fonda’s “cool hand” on her “fevered brow.” For 10 points each:

[10] Name this practice, a defense of which is mounted in a Judith Jarvis Thomson paper that introduces thought experiments about people-spores flying into houses and about a person waking to find a terminally-ill violinist plugged into their body.

ANSWER: **abortion**

[10] Thomson also wrote a paper titled for “Killing, Letting Die,” and this thought experiment created by Philippa Foot in “The Problem of Abortion and the Doctrine of the Double Effect.” In it, you have the option of pulling a lever to divert the namesake vehicle so that it only kills one person instead of five.

ANSWER: **trolley** problem

[10] Foot’s solution to the trolley problem distinguishes between two types of duty described by these terms. Isaiah Berlin’s “Two Concepts of Liberty” are named for these two adjectives.

ANSWER: **positive** and **negative** [accept in either order; accept **positive** and **negative** duties or **positive** and **negative** liberty; prompt on partial answer]

<YFL Philosophy>

13. This term takes its name from a gambling strategy in which you repeatedly double your bet each time you lose. For 10 points each:

[10] Name this term for a sequence of random variables such that the expected value of each variable, conditioned on all previous variables, is equal to the variable before it.

ANSWER: **martingale**

[10] This kind of stochastic process, which can be used to model Brownian motion, is a martingale. In a two-dimensional lattice, this process consists of repeatedly choosing one of the four possible directions and moving in that direction.

ANSWER: **random walk** [prompt on “walk”]

[10] In a two-dimensional lattice, this is the probability that a random walk starting at the origin will eventually return to the origin. This is also the probability that a 2-by-2 matrix whose entries are random real numbers is invertible.

ANSWER: **one** [or **1**]

<AW Math>

14. The aria “Must the Winter Come So Soon?” from this opera has become a mezzo-soprano standard. For 10 points each:

[10] Name this opera where the title character sings the aria “Do Not Utter a Word” and Erika confesses to the Old Baroness that she had a miscarriage.

ANSWER: **Vanessa**

[10] The opera *Vanessa* was written by this American composer of an overture to *The School for Scandal* and the string orchestra piece *Adagio for Strings*.

ANSWER: Samuel **Barber**

[10] In one part of this Barber piece, the orchestra depicts “a streetcar raising its iron moan.” This piece based on a James Agee poem was described by its composer as a “lyric rhapsody” and commissioned by Eleanor Steber.

ANSWER: **Knoxville: Summer of 1915**

15. Lipinski’s rule of five evaluates whether or not a chemical compound has properties typical of these substances. For 10 points each:

[10] Name these substances, often classified as “small molecule” or “biologic,” whose discovery often involves high-throughput screening for target affinity.

ANSWER: **drugs** [or **medications**; accept **lead compounds**]

[10] The absorption, distribution, metabolism and excretion of drugs, or ADME properties, are often studied in this branch of pharmacology sometimes contrasted with pharmacodynamics.

ANSWER: **pharmacokinetics** [or **PK**]

[10] Pharmacokinetics also studies this potential property of drugs, the degree to which they can damage an organism. LD50 is a common metric for this property, which is very high for compounds such as Botox and Ricin. It is sometimes represented as a “T” tacked onto the end of the ADME acronym.

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

<EM Biology>

16. Minou's solicitation of the ghost-loving mystic Fela irritates her aunt Dede in this novel. For 10 points each:
[10] Name this novel set in the Dominican Republic, in which the aspiring lawyer Miranda and devout mother Patria are imprisoned before dying in a staged car accident.

ANSWER: ***In the Time of the Butterflies***

[10] Vladimir Nabokov describes hunting butterflies as "a pretty boy in knickerbockers" in this memoir. The fifth chapter of this book is titled "Mademoiselle O."

ANSWER: ***Speak, Memory***

[10] "Chameleon butterflies" provide clothing and food for Ayesha in this Salman Rushdie novel. Ayatollah Khomeini issued a fatwa in response to this novel.

ANSWER: ***The Satanic Verses***

<OL World Literature>

17. George Taylor presented this theory in 1926, arguing that rising stock prices were positively correlated to a certain sartorial characteristic. For 10 points each:

[10] Name this index that relates a specific aspect of clothing to the state of an economy.

ANSWER: **hemline** index [prompt on anything mentioning the length of skirts or dresses]

[10] The "men's underwear index" is used as a "leading" one of these things because a drop in discretionary consumption implies an upcoming downturn. Other types of these things include "lagging" and "coincident" ones.

ANSWER: **indicator**

[10] This quantity, symbolized M2, is considered to be a leading indicator. It includes traveler's checks and savings deposits in addition to physical currency, and an increase in it can drive inflation.

ANSWER: **money** supply

<JK Social Science>

18. Answer the following about the taiko, for 10 points each.

[10] The taiko is an instrument that originated in this country, where they are manufactured by the marginalized burakumin social class. Karaoke is a large part of this country's modern music market.

ANSWER: **Japan** [or **Nippon**]

[10] The taiko is a member of this family of instruments. The *Bachi* used to play this instrument are held in a similar manner to the western "match grip" used when playing some other members of this instrument family.

ANSWER: **percussion** [prompt on **drums**]

[10] In other forms of Japanese music, the *in* and *yo* scales have this many unique notes. This is one less than the number of notes in a whole tone scale.

ANSWER: **five** [or **5**]

<YFL Other Arts (Misc. Music)>

19. This document claimed that Romanticism has “abdicated its heroic boldness” and fallen into “senile decay.” For 10 points each:

[10] Name this essay by Jean Moréas that championed its namesake movement, which it claimed wanted to “clothe the Ideal in a perceptible form.”

ANSWER: **Symbolist** Manifesto [or “Le **Symbolisme**”]

[10] This French poet is named by Moréas as one of the leading Symbolist poets. His works include an unfinished poem for the “tomb” of his son Anatole and the sprawling “A Throw of the Dice Will Never Abolish Chance.”

ANSWER: Stéphane **Mallarmé**

[10] Barbara Johnson claims that Mallarmé’s influence was critical to Roland Barthes’s [“roh-LAWN BART’s”] theory of the “death” of this figure. That theory argues that a text should be interpreted without reference to this person’s intentions or context.

ANSWER: the **author** [or *l’**auteur***]

<JK European Literature>

20. This territory’s city of Krujë [“KROO-yuh”] was repeatedly besieged during a revolt against the Ottomans. For 10 points each:

[10] Name this eastern European territory whose modern nation with the same name has its capital at Tirana.

ANSWER: **Albania**

[10] This Albanian hero left the Ottomans at the Battle of Nis. He later led his namesake rebellion against the Ottoman Empire, and also helped the Venetians in the First Ottoman-Venetian war before his death.

ANSWER: **Skanderbeg** [or George **Castriot**]

[10] In Skanderbeg’s rebellion against the Ottomans, he led this alliance of Albanian lords. However, this league, which won the Battle of Torvill, was unable to create a long-lasting independent Albanian state.

ANSWER: League of **Lezhe**

<AN European History>

21. This constant is multiplied by t over q to get the thermal voltage used in the Shockley diode equation. For 10 points each:

[10] Name this constant that equals the ideal gas constant divided by Avogadro’s number. Its value is around 1.38 times 10 to the negative 23 joules per kelvin.

ANSWER: **Boltzmann**’s constant

[10] According to the equipartition theorem, each degree of freedom contributes this fraction times Boltzmann’s constant times temperature to the total energy of a system.

ANSWER: **one-half** [or **0.5**]

[10] Boltzmann theoretically derived the Stefan–Boltzmann law for black body radiation, whose constant of proportionality is proportional to the Boltzmann constant raised to this power.

ANSWER: **four** [or **4**]

<AR Physics>