

2020 Terrapin Open

Packet 9

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Tossups

**1. In this decade, a designer was inspired by a group of Hasidic Jews leaving a New York library to launch his “Rabbi Chic” collection, during which his muse Julia Schönberg debuted under him. In this decade, softcore pornographic images of characters like “Mistress Dita” were collected in the best-selling coffee-table book ever, *Sex*. On this decade’s first *Vogue* cover, the subtitle “[this decade]: what next?” appeared over German photographer Peter Lindbergh’s shot of several models, one of whom coined the phrase “we don’t wake up for less than ten thousand a day.” The Union (\*) Jack dress became a symbol of the “Cool Britannia” pop movement in this decade. In this decade, the music video for “Freedom” starred the “Big Five,” including Linda Evangelista and Cindy Crawford. In this decade, Jean-Paul Gaultier (“goat-YAY”) designed a conical bra for Madonna. For 10 points, name this decade in which Jennifer Aniston debuted the “Rachel” haircut on *Friends*. ANSWER: 1990s (*Sex* is by Madonna.)**

<AP, Other Arts: Fashion>

**2. The subject of these poems may be the same as a poem that describes a lost girl’s parents following her footprints through a snowstorm until they give out at a wooden bridge. In one of these poems, a maid whom there were “very few to love” lingers “beside the spring of Dove.” In another of these poems, the speaker describes how he bent his way “beneath an evening moon” to the cottage of a woman “Fresh as rose in June.” These poems are similar to a sequence about an unknown “Matthew.” One of these poems ends with the speaker declaring that his beloved has (\*) “no motion” and “no force,” describing her as “roll’d round in earth’s diurnal course.” That poem’s speaker calls the subject “a thing that could not feel the touch of earthly years.” These poems, which include “A Slumber Did My Spirit Steal” and “Strange Fits of Passion Have I Known,” may be about the author’s sister Dorothy. For 10 points, name these William Wordsworth poems whose subject is an unknown woman.**

ANSWER: Lucy Poems [prompt on William Wordsworth’s poems]

<CK, British Literature>

**3. According to Herodotus, a ruler of this non-Athenian city who convinced a group of allies not to abandon a bridge across the Danube had his embalmed head buried with full honors by Darius I after losing a battle near Malena. Another ruler of this city ignored the advice of the geographer Hecataeus and began a campaign that included a failed attempt to capture Chios. That ruler of this city was denied help after Gorgo rebuked his attempts to bribe her father Cleomenes I of Sparta. Due to the betrayal of (\*) Megabates, that ruler of this city had his siege of Naxos repulsed. The tyrants Histiaeus and Aristagoras ruled this city, which had all of its men murdered and its women sold into slavery by Darius I as punishment for leading the Ionian Revolt. For 10 points, name this Ionian city whose “Golden Age” of philosophical and scientific achievement saw the best work of Thales.**

ANSWER: Miletus

<JL, Ancient History>

**4. In one work, this thinker contrasted the “people of rhetoric” who only understand scripture allegorically with the “people of demonstration.” This thinker’s best-known book criticizes another philosopher’s argument that the absurdity of an infinite number of planetary revolutions implies that the world is not**

**eternal. That book argues that substances are natural causes, criticizing [emphasize] another thinker's occasionalist argument that God, not fire, causes cotton to burn. Boethius of Dacia and (\*) Siger ("SEE-jur") of Brabant defended this thinker's idea that all human knowledge arises from a single source, a view called "the unity of the intellect." This thinker's followers argued that demonstrative and scriptural truth never conflict, a doctrine known as "double truth." For 10 points, name this philosopher, dubbed the "Commentator" for his many Aristotle exegeses ("ex-uh-JEE-seez"), who critiqued al-Ghazālī in his *The Incoherence of the Incoherence*.**

ANSWER: **Averroes** ("ah-VAIR-oh-eez") [or 'Abū l-Walīd Muḥammad ibn 'Aḥmad **ibn Rushd**]

<CK, Philosophy>

**5. A form of this phenomenon that occurs in ultra-thin gate-oxide films consists of abrupt step-like transitions between discrete voltages and can be modeled as a Markovian telegraph process. Van der Ziel used the Hooge ("HO-khuh") parameter to unify models of one type of this phenomenon in which the power spectrum scales inversely with frequency. Another type of this phenomenon was first observed in vacuum tubes due to measured current coming as discrete electrons, and (\*) Schottky developed a formula for that type of this phenomenon assuming a Poisson distribution of carrier arrivals. A form of this phenomenon caused by thermal fluctuations has nearly constant power spectral density and is named for Johnson. This phenomenon, which is distinct for distortion and interference, is often quantified by the ratio of signal power to its power. For 10 points, name this undesirable random phenomenon that adds error to electronic signals.**

ANSWER: electronic **noise** [accept telegraph or popcorn **noise**; accept flicker **noise**, pink **noise** or  $1/f$  **noise**; accept thermal **noise** or Johnson–Nyquist **noise**]

<GR, Other Science: Engineering/Mixed>

**6. To help assassinate this man, the FBI hired mob bosses Sam Giancana and Santo Trafficante, but cancelled the attempt after their contact demanded a higher payment. In an aborted attempt to provoke an uprising against this leader, star-shells were shot from a submarine to convince people that it was the Second Coming of Christ. *Guajiro* ("gwa-HEE-ro") farmers and this leader's former ally William Alexander Morgan rose against him during the Escambray rebellion. This leader came to power after a revolution that inspired Regis Debray's (\*) *foco* theory of guerrilla warfare. This leader tasked a fellow revolutionary with purging an army at La Cabaña fortress. This leader was unsuccessfully attacked by the all-exile Brigade 2506. This leader, whose regime was the target of Operation Mongoose, was unsuccessfully targeted by a plot to poison his cigars with Botox. For 10 points, name this Cuban leader who overthrew Fulgencio Batista.**

ANSWER: Fidel **Castro**

<EL, World History>

**7. A common test for overidentification in this technique is the Sargan–Hansen test. When weakness of variables prevents using this regression technique, you can use the limited-information maximum-likelihood estimator instead. If this technique's input variables are binary, you can use an estimator equal to the ratio of the difference of sub-sample averages named for Wald to find the local average treatment effect. In a 1991 paper, Joshua Angrist and Alan Krueger used this technique to analyze whether compulsory (\*) school attendance policies had an effect on future earnings. A simple version of this regression technique that is often used in model estimation is the two-stage least-squares method. To use this regression technique, the eponymous variable must be correlated with the endogenous explanatory variables, and must satisfy a condition commonly called "exclusion restriction." For 10 points, name this regression technique usually used when an explanatory variable is correlated with the error term and cannot be directly regressed.**

ANSWER: **instrumental** variable regression [or **IV** regression; prompt on **regression**]

<AE, Social Science: Economics>

8. In this story, a priest rebuts the protagonist's skepticism about a legend, pointing out about the wind: "it kills, it whistles, it sighs, it roars. But have you ever seen it?" This story's protagonist is shocked when a rose mysteriously snaps in his garden as if it had been picked by an invisible hand. After she is hypnotized, the protagonist of this story cannot convince his wealthy cousin that her husband does not need a loan of five thousand francs. Its protagonist rubs pencil lead onto his lips and beard to test whether the strange disappearance of (\*) water and milk from his bedroom is due to him sleepwalking. This story begins with the protagonist feeling overjoyed at the appearance of a Brazilian three-master on the Seine. The protagonist decides to kill himself, suspecting the title character is not dead, after he sets his house on fire, killing all his servants. For 10 points, name this Guy de Maupassant ("ghee duh moh-pah-SAWN") story whose protagonist is possessed by a vampire.

ANSWER: "Le **Horla**" [or "The **Horla**"]

<CK, European Literature>

9. A 2012 exhibition titled for these things consists of massive heads sculpted by Phillip Haas. Before commissioning an artist for a series depicting the four elements, Maximilian II commissioned the artist for two series titled for these things; that artist depicted them "In One Head" in another work. A [emphasize] series titled for these things includes a painting showing a woman picking fruit on a ladder that seems to appear from a bunch of grapes and one showing a (\*) snake ominously slithering on a rock on the left. The Duc de Richelieu commissioned a series titled for these things whose final painting depicts the Deluge; that series was Nicolas Poussin's last. Rudolf II is depicted as a god who governs these four entities in a portrait by Giuseppe Arcimboldo. In a painting titled for one of these things, a red-clad Mercury waves away clouds with a caduceus as Venus stands in an orange grove. For 10 points, Botticelli's *Primavera* depicts an allegory of one of what four time periods?

ANSWER: the four **seasons** [anti-prompt on specific seasons or *Primavera* until read by asking "can you be less specific?"] (The Philip Haas heads were sculpted based on Arcimboldo's heads.)

<VS, Painting/Sculpture>

10. In anion coordination chemistry, a portmanteau of "square" and this functional group names a motif with hydrogen bond donation capabilities up to 10 times stronger than thiourea. In the Liberty Blue apparatus for automatically forming these functional groups, scavenger trialkylsilanes like TIPS can ensure the product does not reattach to a substrate such as a Wang resin. Hünig's base and HATU are common additives in reactions that aim to form this functional group. Hard-to-separate dicyclohexylurea byproducts are a downside of using (\*) DCC as an activator for forming these functional groups. In IR spectroscopy, this functional group can be observed through its C–O stretch around 1670 wavenumbers. Nylons contain many of this functional group, one of which is also found in DMF. For 10 points, name these functional groups that link amino acids in polypeptides.

ANSWER: **amides** [or **peptide** bonds until read; prompt on squaramide motif]

<EM, Chemistry>

11. The 1933 execution of Eul Lee in this state led to outcry over discriminatory sentencing towards African Americans. This state's chapter of the Congress of Racial Equality was chaired by a man who led opposition to the discriminatory housing policies of landlord Morris Goldseker. Walter P. Carter was a major civil rights leader in this state, where much of the city of Cambridge was destroyed in a 1967 race riot. A 1955 sit-in in this state occurred when (\*) seven students from Morgan State University occupied Read's Drug Store. A governor of this state was endorsed by the NAACP for implementing housing equality measures, but lost favor with this state's black residents after arresting protesting students at Bowie ("BOO-ee") State College. After H. Rap Brown gave a speech that incited a race riot in this state, he was arrested on the orders of Governor Spiro Agnew. For 10 points, name this state where the NAACP is headquartered in Baltimore.

ANSWER: Maryland  
<EL, American History>

12. A misanthrope who walks on all fours and lives with the French nun Ma Françi narrates a fictionalization of this event, pinned on the Kampani leader Peterson, in *Animal's People*. During this event, Pablo Bartholomew and a protégé of Cartier-Bresson took, respectively, color and black-and-white versions of an iconic photo that was rather inaccurately described as a “dead boy buried neck deep in a grave of debris” in *The Ministry of Utmost Happiness*. This event is depicted in a movie subtitled *A Prayer for Rain* featuring Martin Sheen in the role of CEO Warren Anderson. In this disaster, lax (\*) safety measures permitted unmitigated thermal runaway after water was improperly introduced to tank E610, resulting in pressure venting of MIC, or methyl isocyanate, from a carbaryl pesticide plant in Madhya Pradesh (“MUD-yuh pruh-DAYSH”). For 10 points, name this 1984 industrial disaster in which toxic gas killed thousands in a central Indian city.

ANSWER: Bhopal gas disaster [or Union Carbide gas disaster; accept anything describing a gas leak in Bhopal or from a Union Carbide, UCC, UCIL, sevin, or carbaryl plant; accept MIC or methyl isocyanate disaster or leak]  
<JS, Other Academic>

13. A transformation of this name occurs before movement 5 of Brahms's Handel Variations and movement 8 of Mozart's Variations on “Ah! vous dirai-je, Maman” (“AH voo dee-REZH ma-MON”). Mode mixture and borrowed chords add chromatic variety by briefly using this transformation. With L and R, it forms a group of three dual transformations in neo-Riemannian theory. Chords undergo a motion of this name in harmonic planing (“PLANE-ing”). A surprising final modulation via a transformation of this name is a (\*) Picardy third, while in the other direction, it flattens the third, sixth, and seventh scale degrees. Common-practice voice leading promotes melodic independence by discouraging consecutive fifths or octaves whose motion has this name. Keys in this relationship do not share a key signature, unlike relative keys. For 10 points, C major and C minor have what musical relationship between two keys with the same tonic, which can be abbreviated P?

ANSWER: parallel [accept parallel major or parallel minor; accept parallel modulation; accept modulating or moving to the parallel key; accept parallel fifths or parallel octaves; accept parallel motion or parallel movement or harmonic parallelism; prompt on P; prompt on altering, raising, or lowering the third scale degree until “third” is read by asking “what is the name of the relationship between the keys?”; prompt on modulating or moving between major and minor or into major or into minor by asking “what is the name of the relationship between the keys?”; prompt on changing keys or changing modes; prompt on mode or modal transformation until “Mode” is read]  
<OL, Classical Music>

14. In this work's final poem, its author states “I have tried to write Paradise,” but admits “do not move / let the wind speak / that is paradise.” The speaker remembers a “Buccentoro twenty yards off, howling ‘Stretti’” in a poem from this work that begins, “I sat on the Dogana's steps / For the gondolas cost too much, that year.” In a book about its author's “era,” Hugh Kenner argues that its author's deteriorating health prompted him to ask in a fragment near its end, “I have brought the great ball of (\*) crystal; Who can lift it?” It includes an arc about a condottieri who built “a temple so full of pagan works” named Sigismondo Malatesta and an arc in which Plotinus guides the author through Hell. The phrase “with usura” is repeated in a poem railing against money-lending from this work's section “Fifth Decad.” Its author described Benito Mussolini “hung by the heels” in a poem from this work written while he was imprisoned in Pisa. For 10 points, name this magnum opus of Ezra Pound.

ANSWER: *The Cantos* [accept *The Pisan Cantos*]  
<CK, American Literature>

15. Much of K. H. Burrell's work deals with shear stabilization and resulting transport in devices named for this process. The edge pedestal is a feature in H-mode profiles, which are named for more strongly exhibiting

**this process than L-modes. Neutral beam injection is a heating method used in devices named for this condition. A longitudinal current creates this condition in Z-pinch devices, and mirror devices achieve it through a high density of field lines. Lyman Spitzer proposed a device to achieve this condition using a figure-eight shape to counteract drift, called the (\*) Stellarator. The product of ion density with the time named for this condition must exceed certain numerical values for the Lawson criterion to be satisfied. In tokamaks, this condition is provided by superconducting magnets, resulting in a toroidal high-temperature plasma. For 10 points, name this condition in which a plasma is contained by magnetic fields, allowing for sustained fusion.**

ANSWER: magnetic **confinement** [accept magnetic **confinement** fusion; magnetic **containment**; prompt on **fusion**; do not accept or prompt on “inertial confinement”]

<GR, Physics>

**16. Individuals who have undergone the *upanayana* (“oo-puh-NAY-uh-nuh”) ritual are prescribed to place torn sacred threads on these objects rather than discarding them. In Maharashtra (“ma-ha-RAHSH-truh”), one of these objects worshipped daily by housewives and placed in the center of one’s house is “married” to Vishnu to mark the beginning of the traditional wedding season. The third Vedic stage of life, *vānaprastha* (“VAH-nuh-pruh-stuh”), involves living in a place filled with these objects, whose varieties used in Vedic rituals include *darbha* and *kuśa* (“KOO-shuh”). In Vedic mythology, the wish-granting (\*) *Kalpavriksha* (“KULL-puh-vrik-shuh”) is one of these objects, and lingams are often worshipped using the *bilva* or bael type of these objects. In the *Gīta*, Krishna invites the offering of fruit, flowers, water, or these objects. Āyurvedic (“AH-yoor-vay-dik”) treatments use types of these objects like neem and tulsi to make toothpaste and medicine, and these objects are also used to make henna. For 10 points, sacred varieties of what objects in Hinduism include the banyan and bodhi?**

ANSWER: **plants** [accept **trees** or **leaves** or **grasses** or **herbs**; accept **bael**; accept **peepal**; accept **darbha**, **kuśa**, **bilwa**, **bael**, **tulsi**, **neem**, **banyan**, **bodhi**, or **fig tree** until they are read; prompt on **branches**, **roots**, or **twigs** by asking “what objects do they come from?”; prompt on **forests**; do not accept or prompt on “fruits” or “flowers”] (The marriage of the tree to Vishnu is called *Tulsi Vivaha*.)

<AP, Religion: Hinduism>

**17. The third section of Edmund de Waal’s history of this good titled *The White Obsession* chronicles William Cookworthy’s Plymouth factory, the first large-scale producer of one type of this good in England. The Medici family patronized the first European efforts to create this good, whose production in Southern Italy was headquartered at Capodimonte. To compete with production of this good in Saint-Cloud (“san-CLOO”), Louis XIV (“the fourteenth”) founded a manufactory in Vincennes (“van-SEN”), which became the premier producer of this good in Europe after moving production to (\*) Sèvres (“SEV-ruh”). Letters authored by François Xavier d’Entrecolles (“don-truh-CULL”) helped spread knowledge of how to produce this good to Europe. European mass production of this good began after Johann Böttger (“BOOT-ger”) and Ehrenfried von Tschirnhaus (“CHURN-house”) opened a factory in Meissen (“MICE-in”), which produced the hard-paste variety of this good. For 10 points, name this ceramic material that is often painted blue and white and known as “china.”**

ANSWER: **porcelain** [accept **china** until read; prompt on **pottery** or **ceramics**]

<AE, European History>

**18. Description acceptable. The protagonist learns that this action was successfully performed when he is given gross-tasting 5- and 10-year-old wines and a delicious, ambrosia-flavored 30-year-old wine. A man voluntarily puts his head on a chopping block and gives a speech defending this action while dressed in a borrowed beggar’s costume. A woman demonstrates the ease of performing this action by gently untangling a ball of wool in front of a magistrate. A man retaliates against charcoal burners who interrupt a celebration of this action by (\*) threatening a basket of charcoal with a knife. Lamachus intervenes in a fight between several groups arguing whether Dicaeopolis was right in performing this action in *The Acharnians*. Characters advocating**

for this goal dump water on a chorus of angry old men who try to use torches to drive them from the Acropolis. Erect men swear an oath over a wine bowl to finalize this action after lusting for Peace. For 10 points, women withhold sex from men to achieve what goal in *Lysistrata*?

ANSWER: **ending the Peloponnesian War** [accept Athens **making peace with Sparta** or Athenians **making a peace treaty with Sparta** or equivalents; prompt on making **peace** or of **ending war** or **not fighting** by asking “which war?” prompt on **withholding sex** or going on a **sex strike** or similar by asking “for what political goal?”]  
<CK, World/Other Literature>

19. **The barbituric acid derivative BMP inhibits an enzyme in this pathway that is encoded by the yeast gene URA3, mutants of which are auxotrophic for a product of this pathway. Rheumatoid arthritis can be treated by inhibiting the fourth step in this metabolic pathway with low doses of leflunomide, which acts on the enzyme DHODH. In its first committed step, ATCase catalyzes condensation of the urea cycle intermediate carbamoyl phosphate and aspartate. During this pathway, orotate combines with PRPP to form (\*) OMP.** The products of this pathway complete ring formation before being added to ribose 5-phosphate, unlike their larger imidazole-containing counterparts. For 10 points, name this pathway that generates the nucleobases uracil, thymine, and cytosine, which pair with purines.

ANSWER: *de novo* **pyrimidine biosynthesis** [or **thymine synthesis**; or **cytosine synthesis**; or **uracil synthesis**; accept equivalents in place of “synthesis,” such as **pyrimidine formation**; prompt on nucleobase **synthesis**, **nucleoside synthesis**, or **nucleotide synthesis**]  
<JS, Biology>

20. **Frank Habineza is the leader of this country’s opposition Democratic Green party, and one of only two members of its parliament not from the ruling party. This country’s former intelligence director, Patrick Karegeya, was assassinated in 2013 after being forced out of the government for criticizing this country’s current president, who *de facto* ruled this country despite only holding the title of vice president until 2000. It’s not Sierra Leone, but the last Saturday of every month in this country is a mandatory (\*) community cleaning day.** In the late 1990s, this country invaded and overthrew the government of its western neighbor across Lake Kivu, the Democratic Republic of the Congo. This country, which is sometimes dubbed the “Singapore of Africa,” is led by the Patriotic Front under president Paul Kagame. For 10 points, name this country whose capital is Kigali, a neighbor of Burundi that suffered a 1994 genocide of its Tutsi population.

ANSWER: **Rwanda** [or Republic of **Rwanda**]  
<GR, Modern World>

## Bonuses

1. This event titles a poem whose narrator declares, “O friend, while the moon’s bad, and the king’s gone, and the queen’s at her wit’s end, the bar fly ought to sing!” For 10 points each:

[10] Name this event described as “that ride home with our boy” in a poem titled for it that ends by calling a woman: “O tiny mother, you too! O funny duchess! O blonde thing!”

ANSWER: Sylvia **Plath’s suicide** [or “**Sylvia’s Death**”]; accept equivalents; prompt on suicide or death by asking “of whom?”; prompt on partial answers]

[10] This poet’s collection *Live or Die* includes the poem “Sylvia’s Death.” She wrote “suicides have a special language. Like carpenters they want to know which tools” in her poem “Wanting to Die.”

ANSWER: Anne **Sexton**

[10] The speaker declares she has “gone out” as one of these people in Sexton’s poem “Her Kind.” One of these people declares “I am lost, I am lost, in the robes of all this light” in a Plath poem describing her burning.

ANSWER: **witch** [accept “**Witch Burning**”]

<CK, American Literature>

2. Systems with the complete form of this property can be described in terms of action-angle coordinates. For 10 points each:

[10] Name this property. A dynamical system with  $n$  degrees of freedom has this property if it has  $n$  unique constants of motion, meaning that there are  $n$  functions whose Poisson (“pwah-SAWN”) bracket with the Hamiltonian is zero.

ANSWER: **integrability** [or **integrable**; or Liouville (“lyoo-VEEL”) **integrability**; accept complete Liouville **integrability**]

[10] Trajectories of integrable systems are confined to an  $n$ -dimensional shape of this type in phase space. According to the KAM (“K-A-M”) theorem, weak perturbations only deform these shapes slightly for most trajectories.

ANSWER: invariant **torus** [or invariant **tori**]

[10] Systems with strong nonlinearity are not integrable and thus exhibit this contrasting type of dynamics, meaning that they are extremely sensitive to initial conditions.

ANSWER: **chaos** [or **chaotic** dynamics]

<GR, Physics>

3. One of these two characters casts protective spells in his namesake dance, while the other casts spells on Airlangga’s soldiers that make them stab themselves with their own daggers. For 10 points each:

[10] Name these two characters who represent the struggle between good and evil in Balinese myth. One of them is a lion-like creature, while the other is a demon queen who is an incarnation of the witch Calon Arang.

ANSWER: **Barong** AND **Rangda** [accept in any order]

[10] Calon Arang angered King Airlangga by kidnapping a girl whom she sacrificed to this goddess. Some traditions depict Kālī (“KAH-lee”) springing from the forehead of this goddess when she is angry.

ANSWER: **Durgā** [prompt on Shakti; prompt on Pārvati]

[10] Barong is usually depicted accompanied by two of these animals, whose King Sugrīva helped Rāma invade Lanka in the *Rāmāyana*.

ANSWER: **monkeys** [accept **vānaras**]

<CK, Mythology>

4. Logistical concerns derailed an attempt to perform this action against the UK, which was followed shortly by a temporary operation after the demotion of Alfred Naujocks (“NOW-yox”). For 10 points each:

[10] Name this task, the aim of Operation Bernhard. Jewish artists such as Adolf Burger were sent to Sachsenhausen concentration camp to work on this task under the direction of Bernhard Kruger.

ANSWER: **counterfeiting** [accept any answer indicating **forgery** or **counterfeiting** of **money** or **currency**; accept British **pounds** or US **dollars** in place of “money”]

[10] The UK first identified the counterfeit notes at a bank in this country. The Allies announced their intent to accept nothing less than “unconditional surrender” at the Casablanca Conference in this country.

ANSWER: **Morocco**

[10] While the attempts to collapse the British economy were unsuccessful, the counterfeit money was allegedly used to pay this man for his work rescuing Benito Mussolini in the Gran Sasso raid. During Operation Panzerfaust, this man kidnapped Miklós Horthy’s (“MEEK-lohsh HOR-tee’s”) son and forced Horthy to resign.

ANSWER: Otto **Skorzeny**

<EL, European History>

5. This man’s theory that consecutive sonatas in the same key were intentionally grouped into complementary pairs, or rarely triptychs, is dubious. For 10 points each:

[10] Name this pioneer of the mid-20th-century harpsichord re-revival. This American musicologist’s 1953 monograph *Domenico Scarlatti* catalogued 555 keyboard sonatas in rough chronological order.

ANSWER: Ralph **Kirkpatrick** [accept **Kirkpatrick**’s pair theory]

[10] Kirkpatrick’s “Anatomy of the Scarlatti Sonata” defines the crux as the climactic point in each half of a binary sonata after which expository material returns unaltered, usually marked by this symbol that looks like a semicircle over a dot and means to hold for longer.

ANSWER: **fermata**

[10] In *Sonata Theory*, Hepokoski and Darcy redefine the crux, and define the medial caesura (“suh-ZHUR-uh”) as a “punctuation” or gap between the transition and secondary theme, usually prepared by this weak type of cadence that lands on a dominant chord.

ANSWER: **half** cadence [prompt on **HC**; prompt on **imperfect** cadence]

<OL, Classical Music>

6. Concerns that the coronavirus pandemic came from this country have led to an uptick in Google searches for “beer virus.” For 10 points each:

[10] Name this country that is not the origin of the Wuhan coronavirus, but is the origin of Corona beer.

ANSWER: **Mexico**

[10] Beer has gained market share in Mexico at the expense of this drink made from agave (“uh-GAH-vay”) sap. This drink, which was historically Mexico’s most popular alcoholic beverage, is much less alcoholic than tequila.

ANSWER: **pulque** (“POOL-kay”)

[10] Mexico’s largest beer producer is Grupo Modelo, a subsidiary of Anheuser-Busch. Anheuser-Busch was subjected to a hostile takeover in 2008 by this Belgian company, resulting in the creation of the largest alcoholic beverage company in the world.

ANSWER: **InBev**

<NC, Modern World>

7. At the end of this performance, the cast comes running out from behind bushes on the stage, each holding a mirror in which the audience see themselves reflected in self-conscious poses. For 10 points each:

[10] Name this performance directed by Miss La Trobe. This work’s second act features a mock Restoration comedy, while its third act depicts a Victorian police officer directing traffic in Hyde Park.

ANSWER: history **pageant** [prompt on *Between the Acts*]

[10] That history pageant appears in this author’s novel *Between the Acts*. She wrote a novel in which the shell-shocked Septimus Warren Smith commits suicide by jumping out of a window.

ANSWER: Virginia **Woolf**

[10] In *Between the Acts*, the Oliver family's heirlooms include a watch that stopped a bullet during this event. In another novel, a character sells her carriage to her cowardly brother-in-law Jos ("joss"), who is fleeing this event.

ANSWER: Battle of **Waterloo** (The novel is *Vanity Fair*.)

<CK, British Literature>

8. This bill drew upon ideas presented in Albert Gallatin's 1808 *Report of the Secretary of the Treasury on the Subject of Roads and Canals*. For 10 points each:

[10] Name this 1817 bill proposed by John C. Calhoun that would have earmarked revenue from the Second Bank for internal improvements. James Madison shocked Calhoun by vetoing this bill, claiming that Article One of the Constitution did not grant Congress the power to fund the construction of roads or canals.

ANSWER: **Bonus Bill** of 1817

[10] Andrew Jackson later cited Madison's veto of the Bonus Bill of 1817 when he vetoed funding for this proposed road, which would have linked Lexington to the namesake Kentucky town as part of the larger National Road.

ANSWER: **Maysville** Road

[10] This Kentucky Congressman proposed the construction of the Maysville Road. This "Great Compromiser" supported the construction of the National Road as part of his "American System."

ANSWER: Henry **Clay** Sr.

<JL, American History>

9. Excess illumination induces the stepwise removal of two epoxides from this class of molecules in a namesake cycle. For 10 points each:

[10] Name this group of molecules that, unlike carotenes, contain oxygen. De-epoxidized members of this group are protective against photoinhibition.

ANSWER: **xanthophylls** ("ZAN-thuh-fill") [or **phyloxanthins** ("fill-oh-ZAN-thins"); prompt on **xanthins**; prompt on **carotenoids**; anti-prompt on **violaxanthin**, **zeaxanthin**, or **lutein** by asking "can you be less specific?"]

[10] Violaxanthin de-epoxidase is specific to polyene ("poly-eeen") chains with this conformation, which lacks any *cis* double bonds. Retinoic acid in this form is used to treat APL.

ANSWER: **all-trans** [or equivalents such as **only trans**; prompt on **trans**]

[10] Lutein and zeaxanthin ("zee-uh-ZAN-thin") contribute to non-photochemical quenching of this molecule in its triplet state. Two special dimers of this essential green pigment make up the P680 photosystem 2 reaction center in chloroplasts.

ANSWER: **chlorophyll**

<JS, Biology>

10. This text replaces the Angelus in the liturgy during the Easter season until Pentecost. For 10 points each:

[10] Name this Marian antiphon whose fourth line was legendarily added by Pope Gregory the Great. It remarks "The Son you merited to bear, alleluia, / Has risen as he said, alleluia."

ANSWER: **Regina Caeli** ("ray-JEE-na CHEL-ee")

[10] Marian hymns in Eastern Christianity are named for this Greek title given to Mary at the Council of Ephesus. This title literally means "bearer of God," but in the West it was generally translated to mean "mother of God."

ANSWER: **theotokos**

[10] A more famous Marian hymn, Salve Regina, is said at the end of this set of prayers centered around sets of mysteries. People typically perform this prayer with a crucifix attached to a string of beads.

ANSWER: Holy **Rosary** [or **rosarium**]

<NH, Religion: Christianity>

11. This sculptor destroyed the head of one of his statues in a fit of rage, but when threatened with beheading by its commissioner, replied that he could return a head to a statue but that his head couldn't be returned to his body. For 10 points each:

[10] Name this artist who started that equestrian statue, which was finished by Alessandro Leopardi. The long sides of the pedestal for that statue have three pillars each, referencing a rumor that its subject, Bartolomeo Colleoni, had three testicles.

ANSWER: Andrea del **Verrocchio** ("vair-ROKE-yo") (All clues refer to his Equestrian Statue of Bartolomeo Colleoni.)

[10] Vasari claimed that Verrocchio gave up painting after this apprentice of his drew an angel in *The Baptism of Christ* more beautifully than any of Verrocchio's prior works. This artist demonstrated ideal proportions in *Vitruvian Man*.

ANSWER: Leonardo **da Vinci** [or **Leonardo**]

[10] Leonardo likely modeled for Verrocchio's statue of David, which is housed in this building. Since it was too tall for the Florence Cathedral, Michelangelo's *David* was placed outside this building, but the version currently there is only a copy.

ANSWER: **Palazzo Vecchio** ("pah-LOTS-oh VEK-yo") [or **Palazzo della Signoria**; accept **Palazzo del Popolo** or **Palazzo dei Priori** or **Palazzo Ducale** or **Piazza della Signoria**; prompt on **Old Palace**]

<VS, Painting/Sculpture>

12. A 10-year-old girl named Ellen Hooten gave testimony about the terrible conditions in these locations, describing being enchained while working, though it later turned out that she had been lying. For 10 points each:

[10] Name these locations, many of which were owned by the "Oldham Limiteds" during the Victorian era. The Ancoats neighbourhood of Manchester was called the "Cradle of the Industrial Revolution" due to its high concentration of these locations.

ANSWER: **cotton mills** [accept **textile factories** or **textile mills**; prompt on **factories** or **mills** by asking "what kind of factories?"]

[10] England's most prominent cotton mills were located in this English county, which experienced a namesake "cotton famine" during the American Civil War.

ANSWER: **Lancashire**

[10] Before becoming Prime Minister, this politician urged Britain to enter the American Civil War on the side of the Confederacy to end the Lancashire cotton famine. As PM, he was the liberal opponent of Benjamin Disraeli.

ANSWER: William **Gladstone**

<JH, British/Commonwealth History>

13. A text discussing this event details how the author specifically avoided talking about the feudal era in his story "The Life of a Fool," since humans are still living in the shadow of the era today. For 10 points each:

[10] Name this event, which occurred shortly after its author wrote a story in which the title mechanical objects pervade the narrator's point of view, driving him insane. It was partially explained in "A Note to a Certain Old Friend."

ANSWER: Ryūnosuke **Akutagawa's suicide** [or equivalents; prompt on **Akutagawa's death** by asking "in what manner?"; prompt on **suicide** or **death** by asking "of whom?"] (The unnamed story is "Cogwheels.")

[10] Akutagawa's final stories, including "Cogwheels" and "The Life of a Fool," appear in this collection. In its title story, the ennui ("on-WEE")-filled speaker finally finds joy when he sees a simple country girl tossing the title objects out of a train to her waiting brothers.

ANSWER: **Mandarins** [or **Mikan**; accept **Mandarin Oranges** or **Tangerines**]

[10] Akutagawa's suicide occurred on the same day as this author's birthday. Akutagawa had a longstanding debate over the importance of plot in literature with this author, who wrote *The Makioka Sisters* and *Some Prefer Nettles*.

ANSWER: Jun'ichiro **Tanizaki**

<VS, World/Other Literature>

14. Delia Graff Fara proposed a solution to this paradox, arguing that cut-off points exist only relative to the interests of speakers in her paper “Shifting Sands.” For 10 points each:

[10] Name this paradox that is often illustrated by someone removing grains one by one from a heap and asking when it ceases to be a heap.

ANSWER: **sorites** (“so-RYE-teez”) paradox [prompt on paradox of the **heap**]

[10] This philosopher used the sorites paradox to argue for the title conclusion in his paper “There Are No Ordinary Things.” This famously contrarian philosopher wrote *Ignorance: A Case for Scepticism*.

ANSWER: Peter **Unger**

[10] In the sorites paradox, predicates have this property, meaning that they admit borderline cases. A notion of “supertruth” is employed by supervaluationists to model this property without moving to non-classical logic.

ANSWER: **vagueness** [do not accept or prompt on “ambiguity” or synonyms]

<CK, Philosophy>

15. Kent Ford developed a cascading image tube spectrograph that could be used to make one of these measurements. For 10 points each:

[10] Name this measurement that compares the angular velocity of stars in a galaxy to their distance from the center.

ANSWER: galaxy **rotation curves** [accept galactic **rotation curve** or galactic **velocity curve**]

[10] This astronomer used the Doppler shift of hydrogen alpha lines to measure flat galaxy rotation curves. Her work provided comprehensive evidence for dark matter.

ANSWER: Vera **Rubin**

[10] Because it cannot lose energy through radiation, dark matter can form a halo around galaxies, providing an explanation for flat galactic rotation curves. This density profile, which was developed to universally fit halo formation simulations with different cosmological parameters, scales with the radius as one over “ $r$  over  $r$ -sub- $s$ , times the square of one plus  $r$  over  $r$ -sub- $s$ .”

ANSWER: **Navarro–Frenk–White** profile [or **NFW** profile]

<GR, Other Science: Astronomy>

16. This artist’s stunts include visiting a museum with a purse filled with ketchup and walking around Macy’s wearing clothes coated in sticky white paint with a sign warning “Wet Paint.” For 10 points each:

[10] Name this artist who, in another entry from her performance-art series *Catalysis*, rode the New York City Subway for a week with clothes doused in eggs, milk, vinegar, and cod oil.

ANSWER: Adrian **Piper**

[10] After her *Catalysis* series, Piper created the alter-ego “Mythic Ego,” wandering around New York dressed in this manner. Marcel Duchamp also dressed in this manner as his alter-ego Rose Sélavy (“air-rose say-lah-vee”).

ANSWER: **drag** [or **crossdressing**; or wearing **clothes** of the **opposite gender**]

[10] This artist employed Piper as an assistant in the 1960s. He wrote “The execution is a perfunctory affair. The idea becomes a machine that makes the art.” in his manifesto *Paragraphs on Conceptual Art*.

ANSWER: Sol **Lewitt**

<CK, Other Arts: Performance>

17. A man explains that he does not have one of these things because his cat had given birth in it, while he later claims that it had caught fire while he was reading cases by candlelight. For 10 points each:

[10] Name these things. At the climax of one play, Brigitte testifies that one of them got caught on a grapevine as its owner, a judge, fled from destroying the play’s title object.

ANSWER: powdered **wigs** [accept more specific answers]

[10] The judge Adam loses his wig and destroys the title object while attempting to seduce Eve in this German playwright's comedy *The Broken Jug*. His short stories include "The Marquise of O."

ANSWER: Heinrich von **Kleist**

[10] Kleist becomes more and more unnerved by the beauty of the Swiss countryside in this author's short story "Kleist in Thun ("toon")." He depicted life at the Benjamenta Institute in his novel *Jakob von Gunten*.

ANSWER: Robert **Walser** ("VALL-zah")

<VS, European Literature>

18. Answer the following about the autoionization of water, for 10 points each.

[10] The autoionization of water produces both the hydroxide anion and this cation, in which solvated protons bind to free water molecules.

ANSWER: **hydronium** cation [or **H3O2+**]

[10] In this mechanism, the solvation of excess protons in water forms the two interconverting Zundel and Eigen cations. This mechanism describes the diffusion of the protons through a lattice of hydrogen bonds.

ANSWER: **Grotthuss** mechanism [prompt on proton jumping]

[10] The structure of the Zundel and Eigen cations was verified in part by splitting this function for the hydronium ion into two separate components. For an ensemble, this function gives density in terms of distance to a reference particle, and it is used to derive thermodynamic quantities in Kirkwood–Buff solution theory.

ANSWER: **radial distribution function** [or **RDF**; accept **pair correlation function**; prompt on correlation function or distribution function]

<KS, Chemistry>

19. This man consolidated military forces in his country by leading a surprise attack on the Tigers Militia in the Safra Massacre. For 10 points each:

[10] Name this leader of a non-Spanish Phalange Party who, with the help of US Ambassador Philip Habib, gained American support after becoming president in 1982.

ANSWER: Bachir **Gemayel** ("bah-SHEER jem-AY-yill")

[10] During the Hundred Days' War, Gemayel's forces fought this country that occupied Lebanon until 2005. It was ruled at the time by Hafez al-Assad.

ANSWER: **Syria** [accept **Syrian Arab Republic**]

[10] The NLP Tigers Militia were a group founded and led by this man. This former president of Lebanon had his government bolstered by Dwight Eisenhower in opposition to forces supported by the United Arab Republic in Operation Blue Bat.

ANSWER: Camille **Chamoun** ("sha-MOON")

<JL, World History>

20. A 1993 study concerning this ability found that ratings given to graduate student TAs based on a 30-second video often matched the TAs' end-of-semester evaluations. For 10 points each:

[10] Nalini Ambady and Robert Rosenthal coined what term that describes the ability of individuals to find patterns based only on narrow windows of experience?

ANSWER: **thin-slicing**

[10] The accuracy of thin-slicing may be due to the fact that individuals rely on these concepts, which are overgeneralized beliefs about a particular category of people.

ANSWER: **stereotypes**

[10] Joshua Aronson and this social psychologist discovered "stereotype threat" in a 1995 study, finding that black students did worse on a standardized exam when they were told that it was "diagnostic of intellectual ability."

ANSWER: Claude **Steele**

<CK, Social Science: Psychology>

