

Fall Open 2019

Written by Itamar Naveh-Benjamin, Jason Golfinos, Aseem Keyal, Jonathen Settle, Kenji Shimizu, Klaus Llwynog, Jack Mehr, Samir Khan, and Nick Collins

Tossups

1. After retrieving wine from the cellar, this character briefly pauses by a door as an “ever-growing conviction” mounts within him that a woman is sobbing on the other side. Despite only driving fifteen miles an hour, this character nearly runs over a hen named Nellie who remains entirely unperturbed when he honks at her. At the end of the novel in which he appears, this character learns about the benefits of breathing sea air from a heavy-set retiree as the two sit and wait for the lights of a (*) pier to turn on. During a “motoring trip,” this character wades through several muddy fields to reach Mascomb, where a local activist challenges his definition of “dignity.” This character spends two hours at the Rose Garden Hotel conversing with Miss Kenton before journeying back to Mr. Faraday’s estate, which had been previously owned by the Nazi sympathizer Lord Darlington. For 10 points, name this loyal butler from Kazuo Ishiguro’s novel *The Remains of the Day*.

ANSWER: Mr. Stevens [prompt on the butler from *The Remains of the Day*]

<INB, Long Fiction>

2. A resident of this city rebuffs a marriage proposal by comparing a spurned lover to “a broken oven that fails in the cold” and to “a waterskin that is full of holes and leaks all over its bearer.” A character leaves this city after observing a maggot falling out of a corpse’s nose. According to a 2004 “version” compiled by Stephen Mitchell, this city’s “ramparts gleam like copper in the sun.” A translation by Andrew George opens by describing a ruler of this city as “wise in all matters” and as “he who (*) saw the deep.” That ruler of this city exercises his right to *prima noctis* until he is challenged by a foreigner who had just spent seven nights sleeping with a temple prostitute. A ruler of this city awaits the arrival of a “wild man” after receiving a vision of an immovable meteorite. A pair of heroes travel from this city to Lebanon to defeat the guardian of the Cedar Forest. For 10 points, identify this city ruled by the two-thirds divine king Gilgamesh.

ANSWER: Uruk

<INB, Mythology>

3. Solving the secular equations for this molecule gives two energies with coefficients equal to the golden ratio. A highly reactive substituted derivative of this molecule has a methoxy group at the 1 position and a trimethylsilyloxy (“tri-methyl-silyl-oxy”) group at the 3 position. This molecule is a monomer in a widely used thermoplastic along with acrylonitrile (“acrylo-nitrile”) and styrene. This is the simplest molecule to react with sulfur dioxide in a cheletropic (“KEE-luh-tropic”) reaction. A derivative of this molecule is often reacted with (*) maleic (“muh-LAY-ick”) anhydride and is named for Danishefsky. In the prototypical example of one reaction, this molecule’s reactivity is increased if it adopts the higher energy *s-cis* conformation. This is the simplest molecule that can donate its HOMO (“homo”) electrons to the LUMO (“LOO-moh”) in the Diels-Alder reaction. The simplest conjugated molecule is, for 10 points, what molecule with four carbons and two double bonds?

ANSWER: butadiene [or 1,3-butadiene; prompt on dienes; prompt on C4H6; do NOT accept or prompt on “1,2-butadiene”]

<AK, Chemistry>

4. In a novel, an object found in this place is described as “a sort of a substitute for explaining the kind of lives we live.” In this place, a man tries to wash his hands in a bucket of incredibly dirty water, but realizes they aren’t getting any cleaner, so he thrusts them into some sand. A character leaving this location lashes out at a pair of men with a heavy, knotted rope to prevent them from jumping aboard his boat. A prophecy that this place will be (*) reconquered by its old leader appears etched on a tombstone hidden near the back of a tea

house. The opportunity to lap up rice pudding after the removal of a filthy gag occurs six hours into a procedure that is frowned upon by this place's new Commandant. In this place, a device consisting of the "Harrow," the "Designer," and the "Bed" violently inscribes the words "Be Just!" into the skin of an officer. For 10 points, identify this title island prison visited by the Explorer in a story by Franz Kafka.

ANSWER: the Penal Colony [accept "In the Penal Colony"]

<INB, Short Fiction>

5. **This composer wrote a chamber piece whose Presto fourth movement begins with the second cello entering on the second beat, playing a fast fugal subject in eighth notes. The G minor scherzo of that piece bears the Italian-language instruction "this scherzo must always be played *pianissimo* and *staccato*" and the tempo marking "Allegro leggierissimo ("ledger-issimo")." During an 1829 performance of his Symphony No. 1, this composer replaced the minuet movement with a movement from his Op. 20 that was said to be inspired by the (*) Walpurgis-Night's Dream section of Goethe's *Faust*. This composer quoted the "Hallelujah" chorus from Handel's *Messiah* in the finale of his String Octet in E-flat major, which he wrote as a teenager eight years before his *Italian* Symphony. For 10 points, name this composer whose incidental music to *A Midsummer Night's Dream* includes a recessional wedding march.**

ANSWER: Felix Mendelssohn [or Jakob Ludwig Felix Mendelssohn Bartholdy]

<KL, Classical Music and Opera>

6. **James Shields and Horatio Newman's research on these people was criticized in a book by psychologist Jay Joseph on the "The Trouble with" those studies. Elyse Schein wrote a memoir about the ethics of Viola Bernard's study of these people in 1970's New York. The "three laws" of a certain field were devised by Eric Turkheimer, who is best known for his studies of these people. Probandwise ("PRO-band-wise") concordance is a measure often used when studying these people, who are described statistically using the ACE model. The University of (*) Minnesota is home to Thomas Bouchard ("boo-SHAR"), who conducted the largest longitudinal study of these people subject to the equal-environment assumption. *The Mismeasure of Man* discusses the studies of Cyril Burt, who was accused of falsifying data on these people to determine the heritability of IQ. For 10 points, identify these people differentiated in behavior genetic studies as monozygotic ("mono-zye-GO-tic") and dizygotic ("DYE-zye-GO-tic").**

ANSWER: twins [prompt on siblings, accept monozygotic twins, do not accept or prompt on "children" or "dizygotic twins"]

<JM, Psychology>

7. **An archaeological expedition to this country's Abanda Caves uncovered an unusual population of dwarf crocodiles whose skin turned orange due to bat guano. This country is currently battling large-scale illegal logging of its sacred kevazingo trees by Chinese companies. With its eastern neighbor, this country shares a sizable manganese deposit in the Bateke ("bah-TEH-keh") Plateau. *National Geographic* popularized the "surfing hippos" of this country's coastal Loango National Park, which is one of thirteen parks established by its (*) president in 2002. This country, which rejoined OPEC ("O-peck") in 2016 after withdrawing in 1995, bases its lucrative oil industry in Port-Gentil. This country's Oklo region is home to a deposit of uranium that unusually sustains its own nuclear fusion. This country borders two fellow OPEC members: Equatorial Guinea and the Republic of the Congo. For 10 points, name this central African country once led for over four decades by Omar Bongo from Libreville.**

ANSWER: Gabon [or Gabonese Republic; or République Gabonaise]

<KS, Geography>

8. **During an assault on this city on Christmas Day of 999 AD, part of the invading army burned down a nearby forest called Thor's Wood. Several annals describe competing groups of "dark" and "fair" foreigners arriving in this city as early as 851. This city's ruling class legislated from an artificial 40-foot-tall hill called**

the “Thingmote.” This city developed from a *longphort* (“long-fort”) established in 841, and was named for the “black pool” formed by the murky convergence of two nearby rivers. This city’s (*) King Ímar was likely the same person as Ragnar Lodbrok’s son Ivar the Boneless. Chief Turgeis established this city’s status as a slave-trading hub for prisoners secured during nearby raids. This city’s King Sigtrygg (“SIG-trig”) Silkbeard was soundly defeated by Brian Boru at the 1014 Battle of Clontarf, leading to the decline of its Hiberno-Norse line of rulers. For 10 points, identify this city whose intermittent rule by Vikings from the ninth to the eleventh centuries was recounted in the *Annals of Ulster*.

ANSWER: **Dublin**, Ireland

<INB, European History (Commonwealth, Ancient, Historiography)>

9. One type of this condition can be treated with immunotherapy developed by Dendreon known as sipuleucel-T (“SYE-puh-LOO-cell-T”). Studies of this condition led to the discovery of a recurrent chromosomal rearrangement known as chromoplexy that creates the TMRSS2-ERG fusion gene. This condition can be studied with the DU145 (“D-U-one-forty-five”) and LNCaP cell lines. This disease can be diagnosed with multi-parametric MRI (“M-R-I”) and TRUS biopsy. Two numbers from 1 to 5, corresponding to the most common and second most common histological patterns, are added together in the (*) Gleason grading system for this condition. Biomarkers for this condition include elevated levels of the zinc metalloenzyme (“metallo-enzyme”) glutamate carboxypeptidase II (“carb-oxy-peptide-ace two”) and kallikrein-3. Levels of that “specific antigen” are elevated in both a similar benign hyperplasia that squeezes the urethra and this disease, which is often screened for with a digital rectal exam. For 10 points, name this cancer of a male reproductive gland.

ANSWER: **prostate cancer** [prompt on cancer]

<AK, Biology>

10. In one painting, three *luohans* (“I’wo-han’s”) standing atop a cloud peer at one of these objects. A donkey rider and his two servants pass one of these objects in the center background of the painting *Early Spring*. One of these objects dominates the very center of the two-minute-long “night scene” in an interactive exhibit from the 2010 World Expo. Irises flank one of these objects that stretches across two six-panel *byōbu* screens housed at the Met. Dark crisscrossing lines represent a (*) “sudden shower” over one of these objects in an entry from *One Hundred Famous Views of Edo* (“AY-doh”). The mast of a boat threatens to crash into one of these objects crowded with traders in Zhang Zeduan’s scroll of the Qingming (“ching-ming”) festival. One of these objects is the focus of a stormy Ando Hiroshige (“hero-shee-gay”) painting that was copied by Vincent van Gogh. In 1895, an artist inspired by Japanese art constructed one of these objects in his garden in Giverny (“zhee-ver-NEE”). For 10 points, what sort of object spanned over Claude Monet’s (“mo-NAY’s”) lily pond?

ANSWER: **bridges** [or **footbridges**; prompt on rocks with “what do the rocks form?”]

<INB, Painting and Sculpture>

11. Several books about one of these events were produced by a team led by one-time papal employee Pirro Ligorio that convened at the court of Alfonso II d’Este (“the-second DESS-tay”). A sixty-question survey called the Parochial Memories was distributed after one of these events, which also inspired Maria I (“the-first”) to establish the Casa Pia to educate poor children. Alexander Pope’s statement that “What is, is right” is criticized in a poem about one of these events. One of these events in 1570 caused (*) Ferrara’s decline and eventual absorption into the Papal States. An assassination attempt in the aftermath of one of these events led to the execution of the entire Távora family. Joseph I moved his court to Ajuda (“ah-ZHOO-dah”) after developing claustrophobia as a result of one of these events that occurred on All Saints’ Day. The Baixa (“BYE-shah”) district was one of many areas rebuilt in the Pombaline style after one of these events. For 10 points, what kind of natural disaster leveled the city of Lisbon in 1755?

ANSWER: **earthquakes** [anti-prompt on fires or tsunamis by asking “What were they caused by?”]

<KS, European History (Continental)>

12. This conflict sparked a trend towards “introspective and highly personal, in part escapist, poetry,” according to a book by Denis Twitchett and Arthur Wright. A poem inspired by an incident in this larger conflict describes a pair of lovers who vow to be “as two birds flying wingtip to wingtip” in heaven, and “as two intertwined branches of a tree” on earth. That poem set during this conflict was adapted into the play *The Palace of Eternal Life*, and ends as its main character sends half of her golden hairpin to her lover. An oft-romanticized incident from this conflict inspired “The (*) Song of Everlasting Sorrow.” During this conflict, the author of the poem “Deer Park” was imprisoned at the Pu Di monastery. According to an apocryphal story, a poet drowned during this conflict after he tried to embrace the reflection of the moon. For 10 points, name this violent rebellion that ended shortly after the death of the poet Li Bai.

ANSWER: **An Lushan** Rebellion [prompt on the death of Yang Guifei with “That happened during what larger conflict?”]

<INB, Non-epic Poetry>

13. Koohan Paik and Jerry Mander’s book *Superferry Chronicles* recounts protests in this state in which people jumped into the water to stop the title boat from docking. The secret Vibora Luviminda society was formed by workers imported to this state called *sakadas*. Dockworkers in this state led in part by John A. Burns led a “March Inland” during massive 1954 protests against Republicans in it. A racially-charged case in this state involved the death and kidnapping of a boxer accused of assaulting Thalia Massie. In 2002, Linda (*) Lingle became this state’s first Republican governor since the power of its “Big Five” oligopoly was broken by its namesake “Democratic Revolution,” whose leaders included a future Senator who lost his arm while serving with the mostly *Nisei* (“NEE-say”) 442nd Infantry Regiment. This home of Daniel Inouye (“ee-NO-ay”) had a “Bayonet Constitution” forced on it by fruit and sugar interests led by Sanford Dole. For 10 points, name this state once ruled by Queen Lili‘uokalani (“lee-LEE-oooh-oh-kah-LAH-nee”).

ANSWER: **Hawai‘i**

<JG, US History>

14. The *Shulba Sutras* contain instructions for highly mathematically intricate types of this practice, including the labor-intensive falcon-shaped *uttaravedi* (“OOH-tuh-ruh-VEH-dee”) design. A festival centered on this practice is often accompanied by “Nopphamat (“NOP-pah-mat”) Queen Contests.” *Gōzan no Okuribi* is a large-scale instance of this practice in Kyoto that concludes the Bon Festival, which can also conclude with a type of it called *tōrō nagashi*. The *Loi Krathong* (“loy krah-tong”) festival in Bangkok centers on this practice. Singing and this practice are central to (*) *aarti* ceremonies. In one faith, this practice is divided into *dadgah*, *adaran*, and *behrām* types. Hindu weddings involve the bride and groom circling the results of this practice seven times, and sacrifices based on it often use ghee since it is Agni’s favorite food. This practice is called *atar* (“UH-ter”) in Zoroastrianism. For 10 points, name this practice, on which Zoroastrian *dar-e mehr* temples center.

ANSWER: lighting a **fire** [accept any answer that mentions **fire** in any way or mentions lighting a **lantern**, **candle**, **lamp**, or **bonfire**; anti-prompt on fireworks and equivalent pyrotechnics; prompt on things like “building an altar,” “placating ghosts” or “honoring ancestors with “by doing what or for what purpose?”]

<JG, Religion>

15. The RAPID/MOCHA (“rapid-moca”) collaboration uses CTD sensors positioned at 26.5°N (“26.5-degrees-north”) to study this process. In 1998, Munk and Wunsch revisited theories of this process, finding that this process was dependent on just a few sources of flux. Theories of this process based on depth integrated flow were unable to predict the EUC (“E-U-C”). Isotopic evidence indicates that the direction of this process was reversed during the Last Glacial Maximum. During the 21st century, the (*) Atlantic is projected to experience a decrease in this process’s meridional overturning form. The Arctic Circumpolar Current is a critical, but poorly understood component of this process. The “global conveyor belt” is a large system responsible for this process. When this process is driven by differences in temperature and salinity it is classified as

thermohaline (“thermo-HAY-leen”). For 10 points, name this large-scale process that regulates the earth’s climate by carrying heat from low latitudes to high latitudes.

ANSWER: ocean **circulation** [accept thermohaline **circulation**; accept deep **circulation**; accept abyssal **circulation**; accept Atlantic meridional overturning **circulation**; prompt on **THC**; prompt on **AMOC**; prompt on global **conveyor** belt; prompt on **upwelling**; prompt on **sinking**; prompt on mass **transport** or heat **transport**] (EUC is the Equatorial Undercurrent, and the ACC is the Antarctic Circumpolar Current. The thermohaline classification is no longer used by oceanographers for circulation)

<JS, Earth Science>

16. **Before colonial contact, these people used the now-extinct chilihueques (“chili-WEH-kez”) to plow land on Mocha (“MO-chah”) Island. Mass migrations of these people northward were kept in control by the founding of the colonial city of La Serena. Many of these people’s prominent chiefs hired silversmiths called rüxafe (“rutt-SHAH-feh”). A large fortified trench named after Adolfo Alsina protected against these people’s malón cattle raids. An ongoing conflict began when a graveyard of these people was flooded by the Ralco Hydroelectric Plant on the (*) Bio-Bio (“BEE-oh-BEE-oh”) River. Neighboring people like the Tehuelche (“teh-WELL-cheh”) adopted the language of these people in a process termed “Araucanization” (“ah-RAO-kahn-ization”). Julio Argentino Roca’s Conquest of the Desert displaced these people, who were led by toquis (“TOH-keez”) such as Caupolicán (“cow-poli-KAHN”) and Lautaro when they killed the conquistador Pedro de Valdivia. For 10 points, name this indigenous ethnic group that has frequently rebelled against the government of Chile.**

ANSWER: **Mapuche** [prompt on **Araucanians** until “Araucanization” is read]

<KS, Other History>

17. **The operator representing these interactions can be written in terms of the species-sums of the two Rosenbluth potentials. The characteristic time of these interactions is inversely related to the Coulomb logarithm. These interactions are assumed to be negligible when deriving the Vlasov equation from the Boltzmann equation. For a plasma to exist, the plasma frequency must be much greater than the frequency of these interactions, meaning collective interactions dominate. Damping that occurs without these interactions was discovered by (*) Landau. The MHD equations are valid only under the assumption of a local Maxwellian distribution, where the mean-free path between these interactions is small. In plasmas, these interactions between charged particles have a differential cross section given by the Rutherford formula. For 10 points, momentum and kinetic energy are conserved in the elastic type of what interactions in which particles hit each other?**

ANSWER: **collision**s [accept **scatters**; accept **scattering**; accept **collision** operator; accept Coulomb **collisions**]

<JS, Physics>

18. **This complex shares similarities in design and purpose with the work of C. R. Ashbee, according to Fiona MacCarthy’s 2019 biography of its architect. A building with a glass “curtain wall” façade is connected to the rest of this complex by a two-story bridge fitted with offices. A cluster of pine trees located near this complex originally housed a group of seven satellite buildings that contained staircases lined with red railings and blue side panels. The departure of Georg Muche (“GAY-ork MOO-kuh”) allowed (*) Gunta Stölzl (“sh’TOL-tsel”) to directly manage this complex’s looms. This complex included a set of white, semi-detached “masters’ houses” home to such men as Lyonel Feininger and Laszlo Moholy-Nagy (“muh-HOLY-noj”). It was constructed after its architect parted ways with Adolf Meyer, with whom he had previously worked on a similar complex in Weimar. For 10 points, identify this building complex in Dessau which, in the late 1920s, housed an art school led by Walter Gropius.**

ANSWER: the **Bauhaus** Dessau campus

<INB, Architecture>

19. **An “Aubade” from a collection titled for this place imagines a sleeping dog standing “before the great dog god.” A “Postcard” written by a native of this place defines the Model T as a “room with the lock inside,” and**

was written by Craig Raine, a member of a 1970s British literary movement named for this place. The speaker remarks, “We are here for what amounts to a few hours, a day at most” in “Us & Co.,” the final poem of a 2011 collection titled for this place by the current Poet Laureate of the US, (*) Tracy K. Smith. This is the setting of a story in which two priests construct a church for mysterious blue “Fire Balloons.” A collection titled for this place includes the Edgar Allan Poe-inspired story “Usher II (“two”),” as well as a story in which a recording of a Sara Teasdale poem plays in an empty house left unscathed by nuclear war. For 10 points, the story “There Will Come Soft Rains” appears in a collection of *Chronicles* by Ray Bradbury titled for which planet? ANSWER: Mars [or Martian; accept *The Martian Chronicles* or *Life on Mars* or “A Martian Sends a Postcard Home” or Martianism]
<INB, Miscellaneous Lit>

20. Richard Ashcraft argued that this thinker hid rebel plots in botanical notes in a book on *Revolutionary Politics and his works*. Leo Strauss argued that this thinker made life a “joyless pursuit of joy” and presents him, like an *earlier* countryman, as esoterically an irreligious hedonist. John Dunn’s seminal 1969 study of this thinker linked his thought to Calvinist values. This is the *later, non-French* thinker attacked by C. B. Macpherson for promoting a “possessive individualism” justifying capitalist (*) exploitation. This thinker was attacked as Socinian (“so-SIN-ian”) for his work *The Reasonableness of Christianity*. This thinker’s idea that acquisition must leave “as much and as good for others” was called his namesake “proviso” by Robert Nozick. A work by this thinker paired with an attack on Robert Filmer’s *Patriarcha* argued that mixing one’s labor with nature creates property. For 10 points, name this author of *Two Treatises of Government*. ANSWER: John Locke
<JG, Philosophy>

Bonuses

1. Answer the following about books that will probably be in an art lover's collection, for 10 points each.

[10] At some point, you've probably owned one of these kinds of books, such as Gardner's *Art Through the Ages* or Marilyn Stokstad's simply-titled *Art History*.

ANSWER: art history **textbooks** [accept **surveys** or **survey** histories]

[10] If you're obsessed with an artist, you might own one of these books or sets of books with a two-word French name, which are extensive and annotated listings of their works over their career or in a particular medium.

ANSWER: **catalogue raisonné** ("catalog reh-zon-NAY")

[10] If you're loaded, you might purchase a Warhol *catalogue raisonné* for over 700 dollars from this publisher with a one word Greek name. It owns *Cahiers du cinema* ("kah-YAY d'yoo cinema") and published E. H. Gombrich's *The Story of Art*.

ANSWER: **Phaidon** Press

<AK, Other Academic>

2. Around one hundred people fled this event, only to drown to death in a cistern inaccurately named for its 1001 columns. For 10 points each:

[10] Identify this 1826 event that culminated with hundreds of beheadings at the so-called "Blood Tower" of Thessaloniki. Its victims were targeted by the well-trained *sipahi* ("see-PAH-hee") cavalry.

ANSWER: **Auspicious Incident**

[10] In the Auspicious Incident, Mahmud II targeted this hereditary, tax-exempt class. By the mid-17th century, it shifted away from populating its ranks through the abduction of Christian children.

ANSWER: **Janissaries**

[10] 20 years before the Auspicious Incident, the Janissaries overthrew this reforming Sultan, whose "New Order," or *Nizam-I Djedid* ("nee-ZAM-ee cheh-DEED"), attempted to Westernize the empire. He was first opposed in 1806 at Edirne.

ANSWER: **Selim III** ("the-third") [prompt on **Selim**]

<INB, European History (Continental)>

3. A simple analytic model of these processes that describes their longitudinal development was developed by Heitler. For 10 points each:

[10] Name these processes that involve repeated pair production and *bremstrahlung* ("BREM-sh'trah-lung"). The width and length of these processes is characterized by the Moliere radius and radiation depth, respectively.

ANSWER: particle **showers** [accept electromagnetic **showers**; accept hadronic **showers**; prompt on **cascade**; prompt on electromagnetic **cascade**; prompt on hadronic **cascade**]

[10] These detectors totally absorb particle showers in order to determine the energy and position of the incident particle. These detectors are classified as hadronic or electromagnetic based upon the type of particle they measure.

ANSWER: **calorimeters** [accept hadronic **calorimeters**; accept electromagnetic **calorimeters**]

[10] Calorimeters can measure values in the billions for this SI unit of energy in particle physics, which is equal to roughly 1.6 times 10 to the negative 19 joules. The Tevatron is named for being able to accelerate particles up to about 1 trillion of these units.

ANSWER: **electronvolts** [or **eV**; or **MeV**; or **GeV**; or **TeV**; do **NOT** accept or prompt on "volt" or "V"]

<AK, Physics>

4. This thinker was dissatisfied with Hume's sensationalist empiricism and coined the term "nexus" to describe a network of "actual entities" that emphasize abstractions. For 10 points each:

[10] Name this thinker who developed "process philosophy" in an attempt to bridge religion, science, and philosophy. This philosopher proposed a theory of gravity in Minkowski space that differed from general relativity.

ANSWER: Alfred North **Whitehead**

[10] This philosopher recalled his split from idealism in the essay “My Mental Development,” though he is better known writing the essay “On Denoting” and collaborating with Whitehead on *Principia Mathematica*.

ANSWER: Bertrand **Russell**

[10] This book was emblematic of the idealism Russell split from. Its author uses his “regress” to argue that a particular thing like a lump of sugar is nothing more than a bundle of its qualities, such as whiteness and sweetness.

ANSWER: **Appearance and Reality** (by F. H. Bradley)

<JM, Philosophy>

5. Answer the following about José Olivarez’s 2019 debut poetry collection, for 10 points each:

[10] Its title poem contains this noun, which appears parenthetically interspersed throughout. The last page of a 2014 collection titled for this noun displays a zoomed-in section of a J. M. W. Turner painting.

ANSWER: **citizen** [accept **Citizen Illegal** or **Citizen**]

[10] Olivarez wrote “i wear the sun, but / it falls off my shoulders” in his poem “The Voice in My Head Speaks [this language] Now.” This language was used by Sandra Cisneros to write the Chicana novel *The House on Mango Street*.

ANSWER: **English**

[10] The epigraph of Olivarez’s *Citizen Illegal* quotes this man’s line, “Not bad, huh, for some immigrants,” which he followed with the line, “Build your fences, we diggin’ tunnels” for his verse on “Otis.”

ANSWER: **Jay-Z** [or Shawn Corey **Carter**]

<INB, Non-epic Poetry>

6. The introduction of a 2018 book states that this character “seems to contain multitudes,” as he’s “a migrant, a pirate, a carpenter, a king, an athlete, a beggar, a husband, a lover” and so forth. For 10 points each:

[10] Identify this “complicated” subject of a recent translation by Emily Wilson. This character’s 10-year-long voyage home is punctuated by encounters with Circe (“SER-see”) and Calypso.

ANSWER: **Odysseus** [or **Ulysses**]

[10] Wilson wrote that audiences grew comfortable with the narrative of the *Odyssey* in part due to its consistent epithets for characters, such as this two-word phrase used some twenty times to describe the dawn goddess Eos. Please give the common English translation.

ANSWER: **rosy-fingered**

[10] In her introduction, Wilson contrasted the infidelity of Odysseus with the loyalty of Penelope, who is praised as a “wife of virtue” by this character in the *Odyssey*’s final book.

ANSWER: **Agamemnon**

<INB, Mythology>

7. The title of a piece with this many phrases was staged in a quarry at the Walker Art Center and was inspired by a Joseph Campbell quote about a hypothetical final work by James Joyce. For 10 points each:

[10] Give the number of phrases of many pieces such as *Ocean* by a certain choreographer. This number unfortunately isn’t featured in the performance *RainForest*, in which dancers are surrounded by mylar balloons.

ANSWER: **64**

[10] Those pieces were choreographed by this man, who chose the number 64 due to his fondness for the *I Ching* (“ee cheeng”). This student of Martha Graham created hundreds of site-specific performances he calls “Events.”

ANSWER: Merce **Cunningham** [or Mercier Philip **Cunningham**]

[10] Cunningham used the *I Ching* in many of his performances to incorporate this concept, which is relied upon in aleatoric music. Cunningham also incorporated this concept in a namesake *Suite* by tossing a coin.

ANSWER: **random**ness [or word forms; or **probability**; or **chance**; or **Suite by Chance**]

<AK, Ballet>

8. In the essay “Literary *Skaz*,” this author pointed out the “surprisingly poetic” quality of the prose which made the dialogue in *The Catcher in the Rye* enjoyable to read. For 10 points each:

[10] Identify this English author of 1966’s *The Language of Fiction*, whose critical columns for *The Independent* from 1991 to 1992 were published in *The Art of Fiction*. As a novelist, he wrote the “Campus Trilogy.”

ANSWER: David **Lodge** [or David John **Lodge**]

[10] In his essay “Surrealism,” Lodge examined a passage from this Leonora Carrington novel about the 90-year-old Marion Leatherby, who manages to overcome her deafness with the title implement.

ANSWER: *The **Hearing Trumpet***

[10] In *The Art of Fiction*, Lodge discussed a pair of authors with this surname in the essays “The Sense of Place” and “The Comic Novel.” Those authors with this surname wrote *Time’s Arrow* and *Lucky Jim*, respectively.

ANSWER: **Amis** [accept Martin **Amis** or Kingsley **Amis**]

<INB, Long Fiction>

9. A law code supposedly issued by a ruler with this title was exposed as a forgery by historian William Henry Scott. For 10 points each:

[10] Name this title held by the mythical Kalantiaw and several pre-colonial chiefs in the Visayas, where they were served by the *timawa* warrior class.

ANSWER: **datu** [or **kadatuan**]

[10] Despite William Henry Scott’s findings, this president established the now-defunct Order of Kalantiaw in 1971. This president ruled the Philippines under martial law until his overthrow in the People Power Revolution.

ANSWER: Ferdinand **Marcos** [or Ferdinand Emmanuel Edralin **Marcos Sr.**]

[10] This most famous *datu*’s refusal to heed the authority of the newly-converted Rajah Humabon convinced Spanish forces to attack him at the Battle of Mactan, resulting in the death of Ferdinand Magellan.

ANSWER: **Lapu-Lapu**

<KS, Other History>

10. The Lanczos (“LAN-tso’sh”) algorithm is an example of a Krylov (“KRIL-off”) subspace method for calculating these quantities. For 10 points each:

[10] Name these scalar quantities that can be found with power iteration. The diagonal entries of sigma in a singular value decomposition correspond to the square root of these quantities.

ANSWER: **eigenvalues** (“EYE-guhn-values”) [do **NOT** accept or prompt on “eigenvectors”]

[10] Finding eigenvectors is easiest when a matrix is symmetric, because eigenvectors (“EYE-guhn-vectors”) of a symmetric matrix have this property. Two vectors have this property if their inner product is zero, which means they form a right angle.

ANSWER: **orthogonal** [or **orthogonality**; accept **perpendicular**]

[10] The difficulty of a numerical problem is often quantified using this quantity, which measures how sensitive the output of a function is to changes in inputs. For matrices, this quantity is usually the ratio of the largest and smallest eigenvalues, denoted kappa.

ANSWER: **condition number** [prompt on well-**conditioned** or ill-**conditioned**]

<SK, Math>

11. Answer the following about the Baroque composer Barbara Strozzi, for 10 points each:

[10] She composed in the *seconda pratica* style of polyphony, which this composer of the 1610 *Vespers* had defended against the attacks of the traditionalist Giovanni Artusi.

ANSWER: Claudio **Monteverdi** [or Claudio Giovanni Antonio **Monteverdi**]

[10] She, like Monteverdi, was a prolific composer of this genre of unaccompanied vocal music, whose secular and emotional lyrics often contrast them from the similar genre of the motet.

ANSWER: **madrigal**

[10] Her *Diparti di Euterpe* is subtitled for cantatas and these pieces. This word also titles the first piece of the first book of Edvard Grieg's *Lyric Pieces*, as well as the last movement of the last of Beethoven's piano sonatas.

ANSWER: **arietta** [or **ariette**; do not accept "aria"]

<KL, Classical Music and Opera>

12. Answer some questions about New York's badass nineteenth-century Archbishop "Dagger John" Hughes, who founded what became Fordham University and laid the groundwork for American parochial schools. For 10 points each:

[10] Dagger John single-handedly revitalized Catholicism in New York by appealing to this ethnic group, of which Hughes was a member. This ethnic group was addressed by infamous signs stating that they "need not apply."

ANSWER: **Irish**-Americans

[10] Dagger John was a close ally of Governor William Seward, who wanted to try Alexander McLeod ("mac-CLOUD") under state law over this event. This event concerned the British blowing up the namesake ship on the Niagara River.

ANSWER: **Caroline** Affair

[10] When nativists threatened Hughes with a New York repeat of anti-Catholic riots in this city, Hughes retorted that they should worry about *their* churches burning. A parade led by Robert Purvis celebrating the end of slavery in Jamaica was attacked in this city's Lombard Street Riot.

ANSWER: **Philadelphia**, Pennsylvania

<JG, US History>

13. The dynamics of these devices are modeled by their residence time distribution, which takes the form of an exponential distribution for the "continuous stirred-tank" type. For 10 points each:

[10] Name these devices whose conversion is found on the x -axis of a Levenspiel plot. An ideal "plug flow" type of these devices has a Dirac delta function for its residence time distribution.

ANSWER: chemical **reactors** [accept continuous stirred-tank **reactor**; accept plug flow **reactor**; prompt on **CSTR**, **CTR**, or **PFR**]

[10] In plants performing fluid catalytic cracking, the reactor is connected to a regenerator that burns any deposited coke off spent catalyst. Fluid catalytic cracking breaks down long hydrocarbons to refine this substance.

ANSWER: crude **oil** [or **petroleum**]

[10] Fluid catalytic cracking often utilized the "fluidization" of this part of the reactor that contains the catalyst. The Kozeny-Carman equation models fluid flow through these components.

ANSWER: fluidized **beds** [or packed **beds**]

<AK, Chemistry>

14. A painting produced in this region was correctly attributed to its artist in 1983 after his signature was discovered on a candelabrum at the painting's center. For 10 points each:

[10] Identify this region where an artist produced a gold-leafed depiction of the *Dormition of the Virgin*, before departing for Venice in 1567.

ANSWER: **Crete**

[10] The gold leafing incorporated in El Greco's *Dormition of the Virgin* reflects the artist's education through the Cretan School of painting these objects, which were displayed in the "red corners" of Eastern Orthodox homes.

ANSWER: religious **icons**

[10] El Greco was instructed during his formative years by Theophanes the Cretan. An earlier Theophanes, nicknamed "the Greek," produced a series of *deësis* ("DAY-esis") paintings for the Cathedral of the Annunciation, but was eclipsed by this student of his, a Russian icon painter of a famed depiction of the *Trinity*.

ANSWER: Andrei **Rublev**

<INB, Painting and Sculpture>

15. Some 90% of glycoproteins (“glyco-proteins”) receive a 14-sugar oligosaccharide (“oligo-SAC-ker-ryde”) from a dolichol (“doly-kol”) anchor embedded in this organelle’s luminal membrane. For 10 points each:

[10] Identify this site of N-linked glycosylation (“glycosyl-ation”). The signal recognition particle directs protein-ribosome complexes to this organelle, in which peptide chains are folded.

ANSWER: **endoplasmic reticulum** [or **ER**]

[10] N-linked glycosylation occurs through the attachment of sugars to asparagine residues, whereas O-linked glycosylation in the Golgi body involves the addition of sugars to the hydroxyl-containing side groups of these *two* amino acids. Name both.

ANSWER: **serine** AND **threonine** (“three-oh-noon”) [accept in either order; accept **Ser** and **Thr**; accept **S** and **T**]

[10] Similarly to calreticulin (“kal-ruh-TICK-yoo-leen”), this chaperone protein binds to incompletely folded proteins to prevent them from escaping the ER. This lectin binds to proteins that only have a single glucose left from N-linked glycosylation.

ANSWER: **calnexin**

<INB, Biology>

16. Excavations of this site have uncovered plastered skulls with seashells inlaid within the eye sockets, which are often treated as early examples of portraiture. For 10 points each:

[10] Identify this archaeological site. Excavations of it in the 1950s uncovered a three-story tower that Ran Barkai argued was built to protect locals on the summer solstice from the shadow cast by a nearby mountain.

ANSWER: **Jericho** (“jerry-co”)

[10] The excavations of Jericho revealed portions of some of these structures which may have collapsed because of earthquakes, contra the Biblical narrative involving Israelites blowing rams’ horns.

ANSWER: **walls**

[10] Jericho is considered this sort of archaeological site for the PPNA, or Pre-Pottery Neolithic A period. These sites, which are deemed as representative for a given ancient culture, include La Tène (“lah TEN”) and Hallstatt.

ANSWER: **type** sites

<INB, European History (Commonwealth, Ancient, Historiography)>

17. Answer the following about prosthesis in linguistics, for 10 points each.

[10] In phonology, prosthesis is the process of inserting sounds at the start of a word. Another common alternation is metathesis, in which multiple sounds undergo this type of phenomenon.

ANSWER: they **switch order** [or they **swap places**; or obvious equivalents]

[10] Descendants of this language of ancient Rome often have the prosthetic vowel /e/ (“eh”) before consonant clusters. For example, “*status*” in this language became “*estado*” in Spanish and “*été*” (“eh-TEH”) in French.

ANSWER: **Latin** [or **latina**]

[10] Prosthetic consonants in Optimality Theory occur when this type of syllable violates the markedness constraint ONS (“O-N-S”). Because these syllables alliterate in Germanic poetry, it is thought that they contained glottal stops.

ANSWER: **null-onset** syllable [or **vowel-initial** syllable; or syllable **without an onset**; or obvious equivalents; prompt on syllable **without a consonant** or equivalents by asking “Where is it missing?”]

<KL, Linguistics>

18. This author was lauded for “employing the idiom of the conqueror” to force Western audiences to meet and confront the “gaze” of an African ruler. For 10 points each:

[10] Identify this author of *The Dark Child*. Toni Morrison wrote the introduction to the NYRB edition of this Guinean author’s novel *The Radiance of the King*.

ANSWER: Camara **Laye**

[10] Several of Laye’s stories were published in an Ulli Beier-edited journal named for this person. An essay titled for this person defines *négritude* as “anti-racist racism,” and poses the question, “When you removed the gag that was keeping these black mouths shut, what were you hoping for?”

ANSWER: **Orpheus** [accept *Black Orpheus* or “Black **Orpheus**” or “**Orphée** Noir”]

[10] Laye’s conversations with a *griot* (“gree-OH”) inspired his final novel, *The Guardian of the Word*, which follows this son of Sogolon. The *griot* Balla Fasséké served this *mansa*, whose “epic” was translated into English by D. T. Niane (“n’YAH-nay”).

ANSWER: **Sundiata** Keita [accept *The Epic of Sundiata*]

<INB, Miscellaneous Lit>

19. Answer some questions about how the heck one would tell apart the different Sunnī *madhāhib* (“mah-THAH-hib”), or schools of thought in Islamic law, for 10 points each:

[10] The Mālikī (“MAH-lih-kee”) school is easy to pick out, as it uniquely privileges the citizens of Medīnah over the consensus or *ijmā’* (“ij-MAH”) of the Ṣaḥābah (“suh-HAH-bah”), who collectively have this quality. The Pope has this quality when speaking *ex cathedrā*.

ANSWER: **infallibility** [or **ismah**; accept equivalent descriptions like “**shielded from error**” or “is **always right**”] (the Ṣaḥābah notably are not *individually* infallible, which has screwball effects on ḥadīth study)

[10] While all *madhāhib* agree on the validity of scripture and *ijmā’*, the Ḥanbalī are relatively squeamish about this legal “source,” which applies a previous ruling to a new situation with a similar *illah*, or incipient cause.

ANSWER: **qiyās** [or legal **analogy**; accept any answer that includes a word form thereof]

[10] Qiyās was uniquely *categorically* opposed by this influential but largely extinct school. Its approach can be exemplified by Ibn Ḥazm’s ruling that the Qu’rānic injunction “do not say ‘uff’ to your parents” should be read solely as a ban on saying the word “uff” to one’s parents.

ANSWER: the **Zāhirī** (“ZAH-hee-ree” or “THAH-hee-ree”) madhhab [prompt on **literalist**, which is a fairly good translation of the term “Zāhirī”]

<JG, Religion>

20. In this play, a judge compares himself to Minos and the executioner to Cerberus, prompting the executioner to exclaim: “Bow-wow, bow-wow!” For 10 points each:

[10] Identify this play set during an unspecified revolution, explaining the intermittent sounds of machine gun fire. Its setting is euphemistically described as a “house of illusions” by its owner, Irma.

ANSWER: *The **Balcony***

[10] This French absurdist author wrote *Our Lady of the Flowers* and *The Maids*, as well as *The Balcony*.

ANSWER: Jean **Genet**

[10] In the third scene of *The Balcony*, the audience discovers that the General’s fantasy involves the girl Dove narrating an imagined battle-scene while assuming this specific identity.

ANSWER: the General’s **horse**

<INB, Drama>