

2022 ACF Regionals

Edited by Taylor Harvey, Jaimie Carlson, Ganon Evans, Alex Hardwick, Nick Jensen, Arjun Nageswaran, Grant Peet, Graham Reid, Jonathon Settle, Chandler West, and Annabelle Yang
Packet B by Cambridge A, CWRU A, UCSD A, NCF A

TOSSUPS

1. A letter in this story praises the “refined joy” of “interchang[ing] thoughts and feelings,” then abruptly complains about balls of bread. In this story, a man calls a woman “a real sun” and “a real canary bird” and suspects that his employer is a freemason because he shakes hands with two fingers. A pen-mender in this work complains that a woman cannot sit on the throne, and admires a place’s “ancient customs” after an Imperial Chancellor beats him. The dates “April 43rd” and “Marchember 86” are included in this story, whose narrator learns that his boss’ daughter Sophie is marrying Mr. Teploff. This story’s narrator declares himself Ferdinand the Eighth and reads letters written by dogs. For 10 points, Poprischin thinks he is the King of Spain in what story by Nikolai Gogol?
ANSWER: “**Diary of a Madman**” [or *Zapiski sumasshedshevo*]

<European Literature>

2. A supporter of this cause wore wet towels in prison to protect himself from radiation experiments conducted by the American government; that supporter of this cause revealed that Cornelius Rhoads had intentionally injected patients with cancer cells. In 2017, a member of the FALN, which advocated for this cause, had his sentence commuted by President Obama. During an uprising, supporters of this cause defied Law 53 by raising a flag in the town of Jayuya (“hah-YOO-yah”). At Blair House, supporters of this cause attempted to assassinate Harry Truman. Luis Muñoz Rivera supported this cause instead of the 1917 Jones Act, which provided citizenship to residents of a certain island. For 10 points, name this cause that seeks to liberate a Caribbean commonwealth from American rule.
ANSWER: **Puerto Rican nationalism** [accept answers about the **independence** of **Puerto Rico**; accept **Borikén** in place of “Puerto Rico”; reject answers about “Puerto Rican statehood” or “annexing Puerto Rico”] (The first two lines refer to Pedro Albizu Campos. The third line refers to Oscar López Rivera)

<American History>

3. Weston Anderson helped develop a technique that created several values of this quantity, dubbed the “wheel of fortune.” Both axes are values of this quantity when plotting the results of “two-dimensional” methods like COSY (“cozy”). The “operating” value of this quantity equals negative gyromagnetic ratio times magnetic field strength. J-coupling constants are expressed in units of this quantity because they correspond to differences in it. This quantity is rescaled relative to a reference value, often from TMS, to give the chemical shift. In NMR, raw time domain data is converted to this quantity via Fourier transform. For 10 points, NMR involves creating resonances by matching the Larmor type of what quantity for the nuclear spins, measured in hertz?

ANSWER: **frequency** [accept resonant **frequency**; accept operating **frequency**; accept Larmor **frequency**; accept **chemical shift** before read; prompt on omega; prompt on nu; prompt on F]

<Chemistry>

4. In a book of New Testament Apocrypha named for one of these people, a former slave learns about repentance after he spies on his former owner bathing. According to a hadith, while picking Arak fruits, Mohammed stated that “there was not a prophet who was not” one of these people. In John Chapter 10, Jesus confuses the Pharisees by using an extended metaphor comparing himself to one of these people, stating that those who came before him are robbers and thieves. The Christmas carol beginning “Glory to God in the highest” derives from a passage in which these people encounter angels. Psalm 23 proclaims, “I shall not want,” after stating, “The Lord is my [this profession].” For 10 points, name this profession whose traditional staff inspired the bishop’s crook.

ANSWER: **shepherds** [accept **pastoralists**; accept answers about **herding** or **tending** to **sheep**; accept The Good **Shepherd**; accept “The Lord is my **shepherd**”; accept The **Shepherd** of Hermas; accept **alraaci**; accept **Pastor**; accept **Poimēn**] (The text in the first line is *The Shepherd of Hermas*.)

<Religion>

5. A player of this instrument named Eckart Hübner acted as the soloist on the first recording of Charles Koechlin’s *Silhouettes de Comédie*. Fifty studies for this instrument are the best-known pieces by Julius Weissenborn. After a drum introduction, two of these instruments play a minor sixth apart to begin the “Game of Pairs” from Bartok’s *Concerto for Orchestra*. Two of these non-string instruments play the first four notes of the *Dies Irae* (“DEE-ess EER-ay”) following the eponymous feature of Haydn’s (“HAI-den’s”) *Drumroll* Symphony. This instrument plays a solo during the aria “Una furtiva lagrima” from Donizetti’s *Elixir of Love*. These instruments introduce a jaunty line representing animated brooms in Paul Dukas’s *The Sorcerer’s Apprentice*. For 10 points, name this double-reed woodwind, the lowest in the standard orchestra.

ANSWER: **bassoon** [or **fagotto** or **fagotti**]

<Classical Music>

6. A flag used in this modern-day country featured the phrase “Death to all who stand in the way of the working people” surrounding a skull and crossbones. In this country, Peter Arshinov was executed for publishing *The Two Octobers*, a newspaper that glorified an uprising in Huliaipole (“hoo-lay-PO-leh”). In this country, anarchists developed a horse-drawn machine gun cart known as a *tachanka*. A head of a state based in this country deserted at the Battle of Poltava when Peter the Great replaced him with Alexander Menshikov. Nestor Makhno formed the anarchist Free Territory in this country during the Russian Civil War, when this country’s Hetmanate was revived. Soviet collectivization of agriculture in this country caused the Holodomór. For 10 points, name this country governed from Kiev.

ANSWER: **Ukraine** [or **Ukrainya**; accept **Ukrainian** State or **Ukrainska** Derzhava] (The hetman at the Battle of Poltava was Ivan Mazepa.)

<European History>

7. The *purna kumbha* mother goddess and fish charms against the evil eye appear in art made from this substance called *alpāna*. Women prevent demons from entering through open shapes in this substance in a mudra technique from Tamil Nadu. This substance connects points in geometric *kolam* designs. As part of the Urdhva Pundra in the Vaishnava tradition, Vishnu’s and Lakshmi’s feet are represented with a red form of this substance called *kumkum*. Water balloons mixed with this substance are thrown to represent Prahlād’s rescue from a bonfire during a spring festival. Rangoli art is primarily made with this substance, which includes a form named *gulal* made for the celebration of Radha and Krishna’s love. For 10 points, name this substance thrown during festivals of Holi.

ANSWER: colored **powder** [accept **rice** or rice **flour**; accept **sand**; accept **dust** or **ash**; accept **gulal** before read; accept **abir**; accept **kolapodi**; prompt on **dyes**; prompt on **chalk** or **turmeric** by asking “in what physical form?”]

<Other Fine Arts>

8. When analyzing one form of this process, the DGLAP equations are used to introduce logarithmic violations of a scaling behavior where functions denoted “W sub 1” and “W sub 2” become independent of the square of the four-momentum in the asymptotic limit. Experiments with this process try to optimize integrated luminosity, which is reported in units of inverse pbs (“p-bees”) or inverse fbs (“f-bees”). The Callan–Gross relation and Bjorken (“B’YOR-ken”) scaling are obtained from analyzing a form of this process with the parton model. A SLAC (“slack”)-MIT collaboration found point particles inside nucleons with this process’s “deep inelastic” form. The derivative of the impact parameter with respect to angle is calculated to find this process’s differential cross section. For 10 points, name this process in which particles slam into each other.

ANSWER: **scattering** [accept deep inelastic **scattering**; accept inelastic **scattering**; accept **collisions**; prompt on **DIS**; prompt on particle **interactions**]

<Physics>

9. In a preface musing on poetry and this place, the author prescribes that poets from this place “are to enclose old and new” and states that this place “does not repel the past.” In a poem titled for this place, it is called a “seated Mother, / Chair’d in the adamant of Time.” A poet declared that this place “at any time upon the earth [has] probably the fullest poetical nature” in an 1855 preface to a poetry collection. A poem titled for this place ponders on “the mother,” “the young wife,” and “the girl sewing or washing” performing the title action; that poem titled for this place depicts people “each singing what belongs to him or her and to none else” and is titled “I Hear [this place] Singing.” For 10 points, name this place whose ideals are central to the poetry of Walt Whitman, who was from this country.

ANSWER: **America** [or the **United States** of America; or the **USA**; or **Americans**; accept “I Hear **America** Singing”]

<American Literature>

10. Every Sahlqvist formula corresponds to a construct named for this philosopher that comprises a binary accessibility relation and a set of nodes. In an essay by this thinker, the monoglot Pierre believes both that “Londres” (“LON-druh”) is beautiful but that “London” is not. This thinker suggested using reference-fixing descriptivism to deal with the incompleteness of the causal (“CAUSE-al”)-historical theory of reference in a book that uses examples like the famous physicist Feynman and the “initial baptism” of a baby. This philosopher, who names the usual semantics for modal logic, used Frege’s (“FRAY-guh’s”) sentence “Hesperus is Phosphorus” in a book that discusses names that apply to the same thing in all possible worlds. For 10 points, which philosopher proposed rigid designators in *Naming and Necessity*?

ANSWER: Saul **Kripke** [or Saul Aaron **Kripke**; accept **Kripke** frames or **Kripke** semantics] (The essay in the second clue is “A Puzzle about Belief.”)

<Philosophy>

11. It's not cancer, but this process is opposed by a class of "lytic" drugs, like fisetin, that target cells that upregulate p16INK4a ("P-16-ink-4-A") and FOXO4 ("fox-oh-4") foci. At pH 6, this process is inferred from the activity of an "associated" beta-galactosidase. George C. Williams proposed that this process evolved due to antagonistic pleiotropy. The Buck Institute's Gordon Lithgow curtailed this macroscopic process by reducing oxidative stress in *C. elegans*, which resists it during calorie restriction. In *Tetrahymena*, Elizabeth Blackburn introduced mutations that accelerate this process, which may be reversed in mice by heterochronic ("hetero-chronic") parabiosis. This process, which is negligible in the jellyfish *T. dohrnii* and *Hydra*, causes female fertility to gradually decrease. For 10 points, what process increases frailty and dementia risk in the geriatric?

ANSWER: **senescence** [or cellular **aging** or advancing **age**; accept photo**aging**; accept negligible **senescence**; accept **senolytic** drugs; accept **shortening** of **telomeres** or equivalents; prompt on **stress** or **oxidative** stress by asking "what specific consequence?"; prompt on "biological **clock**"] (Heterochronic parabiosis is "young blood transfusion" that intrigues some Silicon Valley denizens.)

<Biology>

12. Carolyn Miller proposed that a "rhetorical" form of this title concept underlies genre in a 1984 paper that discusses the recurrent "joint" types of this concept formulated by Herbert Blumer. This concept is the last word in the title of a 1937 book that opens by asking, "Who now reads Spencer?" and updates the four ideal types of it—affektive, traditional, instrumental, and value-rational—outlined by Max Weber. The "logic" of this concept titles a 1965 book that outlines the "social dilemma" of free riders, written by Mancur Olson. A structural-functionalist text by Talcott Parsons outlines the "structure" of a "social" type of this concept, whose "communicative" type was theorized by Jürgen Habermas ("YUR-gun HAH-bur-mahss"). For 10 points, agency is an individual's capacity to perform what sort of deed that is called "collective" when done in groups?

ANSWER: **action** [or **acts**; accept specific types, such as social **action**; accept *The Theory of Communicative **Action***; accept *The Structure of Social **Action***; accept *The Logic of Collective **Action***; accept "Genre as Social **Action**"]

<Social Science>

13. A novel set in this city has a page filled with the repeated word "blen" and begins with an MC saying, "Showtime!" An ex-radio journalist explores this city's seedy underground in a trilogy by Pedro Juan Gutiérrez whose title refers to it as "dirty." Characters such as Arsenio Cue and Bustrófedon frequent this city's nightclubs. In a novel set in this city, the protagonist's daughter Milly is courted by Captain Segura, against whom the protagonist plays checkers using miniature whiskey bottles as pieces. This city is the setting of *Three Trapped Tigers* by Guillermo Cabrera Infante. In a novel set in this city, the design of the "Atomic Pile" is among the schematics passed on to a spy by vacuum cleaner salesman James Wormold. For 10 points, a Graham Greene novel is titled *Our Man* in what city?

ANSWER: **Havana** [or La **Habana**; accept *Our Man in **Havana***; accept *Dirty **Havana** Trilogy* or *Trilogía sucia de La **Habana***]

<World Literature>

14. The daughter of a president of this country made the documentary *What We Left Unfinished* about a state film archive that also inspired Ariel Nasr's *The Forbidden Reel*. A one-party government of this country called for Friday subbotnik, issued Decree Number Seven to ban bride prices, and redistributed blocks of land called "jerib." In 1973, this country's last Barakzai king, Mohammed Zahir Shah, was overthrown by its first president, the sardar Daoud ("dah-00D") Khan. Gulbuddin Hekmatyar ("gool-boo-DEEN HECK-mutt-yar") fought warlords in this country's Helmand Valley, which later grew opium poppies. Nur Muhammad Taraki and Hafizullah Amin proclaimed this country a democratic republic in the 1978 Saur ("SAH-wur") Revolution, which was opposed by rural Tajiks, Hazaras, and Pashtuns. For 10 points, the Soviets lost a 1979–1989 war to what country's mujahideen? ANSWER: **Afghanistan** [or Islamic Emirate of **Afghanistan**; accept Islamic Republic of **Afghanistan** or Da **Afgānistān** Islāmī Jumhūriyat or Jumhūrī-yi Islāmī-yi **Afgānistān**; accept (Democratic) Republic of **Afghanistan**; accept Kingdom of **Afghanistan**] (The first clue is about Mariam Ghani, daughter of Ashraf Ghani.) <World History>

15. A net gearing ratio of less than 100% is being imposed on corporations in this industry as part of the "three red lines" policy. In 2021, falling iron ore prices linked to a crisis in this non-mining industry caused the decline in the stock of the ASX 200 members BHP Group, Rio Tinto, and Fortescue Metals Group. Automated valuation models are used by iBuyers in this industry to quickly pull comps; price inflation caused by iBuyers has been attacked on TikTok by Sean Gotcher. A measure of price inflation in this industry called FMHPI is published by Freddie Mac. Vanke, Country Garden, and Greentown are suffering due to the credit crunch of a company in this industry, the Evergrande Group. For 10 points, what industry is dominated by online marketplaces like Zillow? ANSWER: **real estate** [or **housing**; accept **realty** or **realtors**; accept **property development**; accept **property management**; prompt on **construction**; prompt on **property**; prompt on **land**] <Current Events>

16. A Geoff Dale photograph taken at the beginning of this decade provided the name of the Fish and Chip Brigade; at the start of this decade, that group of four politicians failed, by one vote, to oust Labour leader Bill Rowling. A group of unsanctioned "Cavaliers" toured South Africa during this decade after a lawsuit forced a cancellation of the official tour in light of the controversial Springbok Tour five years earlier. Late in this decade, the Think Big projects popular during the Robert Muldoon government gave way to a laissez-faire economic policy known as Rogernomics in New Zealand. During this decade, *The Sun* ran a headline reading "Gotcha" after the sinking of the *General Belgrano*. For 10 points, name this decade during which the Falklands War was started by Margaret Thatcher. ANSWER: **1980s** [or the **eighties**] (The case *Finnigan v. New Zealand Rugby Football Union* prevented the go-ahead of the tour.) <Other History>

17. Akiho Miyashiro discovered that belts that have undergone this process on the oceanic side of circum-Pacific regions are paired with complementary belts on the continental side. This process is analyzed by identifying tie line flip reactions and terminal reactions between points on a ternary diagram, like the ACF diagram. Isograds are lines separating zones of this process in the Barrovian ("buh-ROVE-ee-an") sequence. Exposed products of this process can belong to amphibolite or granulite facies ("fay-sheez"), while products at lower depths belong to the eclogite ("eck-lah-jite") facies. An aureole is a shallow region where the "contact" form of this process occurs. Protoliths are transformed into products like schist ("shist") and gneiss ("nice") by, for 10 points, what process in which high temperature and pressure transform rocks? ANSWER: **metamorphism** [accept contact **metamorphism** or progressive **metamorphism** or regional **metamorphism**; accept **metamorphosis**] <Other Science>

18. An essay about this location begins with a description of a painting that references it, a Joshua Reynolds portrait

of Mrs. Bouverie and Mrs. Crewe. In a painting set in this location, Thomas Eakins included a nude self-portrait of himself playing the pipes. An essay that discusses the evolving meaning of the titles of paintings set in this location is by Erwin Panofsky. In a painting titled for this location, a bird and rat are drawn to a skull that sits on a brick wall in the foreground. Three men accompany a woman in two depictions of this location that an artist created within twenty years of an earlier painting by Guercino (“gwair-CHEE-noh”). In a painting titled for this place, a man in a blue robe touches a tomb with an inscription that references it. For 10 points, three shepherds were painted in what mythical Greek utopia by Nicolas Poussin (“nee-ko-LAH poo-SAHN”)?

ANSWER: **Arcadia** [or **Arcady**; accept *Et in Arcadia Ego* or *The Arcadian Shepherds* or *Les bergers d’Arcadie*; accept translations like “Even in **Arcadia**, there is death” or “I too was born in **Arcadia**”]

<Painting/Sculpture>

19. Prissy pretends that her aunt’s friend Mr. Considine is a character from this novel in a Frances Towers short story entitled “Tea With [that character from this novel].” After realizing that this novel’s characters are stuck repeating their lives, a detective changes this novel’s ending in Jasper Fforde’s first *Thursday Next* novel. In another novel, a woman who first appeared in this novel looks for her red dress and holds a candle after she steals her caretaker’s keys. Sandra Gilbert and Susan Gubar named their feminist criticism of Victorian literature for a character from this novel, who sets a fire after evading Grace Poole; that book is *The Madwoman in the Attic*. For 10 points, Jean Rhys’s *Wide Sargasso Sea* shows Bertha Mason’s marriage to Mr. Rochester as a prequel to what novel by Charlotte Brontë?

ANSWER: **Jane Eyre** (The short story is “Tea with Mr. Rochester.” The Fforde novel is *The Eyre Affair*.)

<British Literature>

20. In a story collected by Alcée Fortier (“AHL-say FOR-tee-ay”), one of these animals beheads himself after he wrongly surmises that turkeys take off their heads to go to sleep. One of these animals, the Senegalese Leuk (“luke”), may have inspired stories about a folk character who befriends Old Man Tarrypin. The foolish Bouki and one of these animals, both addressed as “Compair,” feature in many Louisiana Creole stories. While stealing goober peas, one of these animals convinces a dimwitted bear to take his place in a trap. In an episode resembling tales of the spider Anansi, a fox tricks one of these animals into kicking a doll made from pitch, and thereby getting stuck. For 10 points, Joel Chandler Harris’s Uncle Remus books collect stories about what animal, who is called “Br’er”?

ANSWER: **rabbits** [or **hares** or **bunnies** or **lagomorphs**; accept Br’er **Rabbit** or Compair **Lapin**]

<Mythology>

Tiebreaker. A short-tempered general created by this author orders a cart and its wine-drunk driver to be thrown into a ravine and a mule shot after being blocked in the road. In a book by this author, the German Jesuit father Kleinsorge is discovered wandering the grounds of a mission with shards of glass embedded in his back. This author won the 1945 Pulitzer Prize for Fiction for a novel in which Major Joppolo tries to acquire a time-keeping object for a Sicilian town to replace a 700-year-old one stolen by Fascists. “A Noiseless Flash” and “The Fire” are sections of a piece by this journalist that took up an entire 1946 issue of the *New Yorker* and includes testimony from Kiyoshi Tanimoto. For 10 points, name this author who wrote the novel *A Bell for Adano* and the book-length essay *Hiroshima*.

ANSWER: John **Hersey** [or John Richard **Hersey**]

<American Literature>

BONUSES

1. This solvent is commonly used for cyclic voltammetry experiments with tetrabutylammonium (“tetra-butyl-ammonium”) salts due to its high dielectric constant. For 10 points each:
[10h] Name this molecule used as a solvent in butadiene production and oligonucleotide synthesis. This molecule is also useful as a reactant, as it possesses both nucleophilic and electrophilic carbons and a nitrogen lone pair.

ANSWER: **acetonitrile** [or **methyl cyanide** or **MeCN** or **CH₃CN**]

[10m] *Two answers required.* Acetonitrile, acetone, and DFM are common examples of solvents with these two properties that favor SN2 reactions over SN1 because they do not form hydrogen bonds with the nucleophile.

ANSWER: **polar** AND **aprotic** [accept **polar aprotic** solvents]

[10e] In addition to solvent choice, the leaving group greatly affects the rate of SN2 reactions; atoms from this group, like chlorine and bromine, make good leaving groups because their corresponding anions are weak bases.

ANSWER: **halogens** [or group **17**; accept **halides**]

<Chemistry>

2. Ta-coumba T. Aiken and Seitu Jones placed silhouettes on sidewalks in this city to commemorate influential figures in their artwork *Shadows at the Crossroads*. For 10 points each:

[10h] Name this city whose sculpture garden contains a large yellow version of an artist’s *Geometric Mouse—Scale A*; that sculpture garden in this city contains a curved stainless steel sculpture that straddles a small pond.

ANSWER: **Minneapolis**, Minnesota [prompt on **Twin Cities**; reject “St. Paul”]

[10m] The Walker Art Center commissioned this Swedish-born sculptor and his wife Coosje van Bruggen (“KOH-shuh fon BRUH-hin”) to sculpt *Spoonbridge and Cherry* for the Minneapolis Sculpture Garden.

ANSWER: Claes **Oldenburg** (“CLASS OLD-en-burkh”)

[10e] The Minneapolis Sculpture Garden contains a black steel sculpture titled *Octopus* by this artist of mobiles (“moh-beels”) such as *Lobster Trap and Fish Tail*.

ANSWER: Alexander **Calder**

<Painting/Sculpture>

3. In the first story of a collection by this author, an incompetent astrologer correctly states that a man was once left for dead in a well, only to reveal that it was the astrologer who had tried to kill him. For 10 points each:

[10m] Name this author of the collection *Malgudi Days*. The town of Malgudi is also the setting for this author’s novels *The Guide* and *Swami and Friends*.

ANSWER: R. K. **Narayan** [or Rasipuram Krishnaswami Iyer **Narayan**aswami]

[10h] In the second story in *Malgudi Days*, a man with this job breaks the rules to avoid delaying a wedding for three years. In a 1912 play, the village headman mocks a terminally ill boy who dreams of having this job.

ANSWER: **postman** [or **postal** worker or **mail**man; accept royal **messenger**]

[10e] This author depicted Amal in the play *The Post Office*. This Bengali author wrote the poetry collection *Gitanjali* (“gee-TAHN-jah-lee”), which he translated with the title *Song-Offerings*.

ANSWER: Rabindranath **Tagore** (“ruh-BIN-druh-not ta-GORE”) [or Rabindranath **Thakur**; accept **Gurudev**]

<World Literature>

4. Robert Gould Shaw led the Black 54th Massachusetts Regiment at the Second Battle of Fort Wagner in this state.

For 10 points each:

[10e] Name this state where the Confederate bombardment of Fort Sumter is traditionally seen as the beginning of the American Civil War.

ANSWER: **South Carolina** [or **SC**]

[10h] During the Civil War, this pilot of the *CSS Planter* freed himself and other enslaved persons aboard by surrendering the ship to the Union Navy. After the war, this man founded the Republican Party of South Carolina.

ANSWER: Robert **Smalls**

[10m] During his political career, Smalls gained local support due to his knowledge of this language spoken by people in the Lowcountry. Many members of the 1st South Carolina Volunteers spoke this creole language.

ANSWER: **Gullah** [or **Gullah**-English; accept **Sea Island** Creole English; accept **Geechee**]

<American History>

5. A thinker from this tradition recognized the functional inadequacy of the monarch but still argued for their absolute power in an idea that has become known as the principle of the entrapped sovereign. For 10 points each:

[10m] Name this loose school of thought associated with Shēn Búhài (“shun boo-hai”) and Hán Fēizǐ (“hahn fay-tsoh”). This school emphasized the “twin handles” of reward and punishment in governance.

ANSWER: **legalism** [or **fǎjiǎ**]

[10e] Shēn Búhài blended realist political thought with notions from this other Chinese tradition, such as the principle of *wú wéi* (“oo way”). This religious and philosophical tradition began with the semilegendary Lǎozǐ (“LAO-tsoh”).

ANSWER: **Daoism** [or **Taoism**; or **Dàojiào** or **tao-chiao**]

[10h] This Warring States–era legalist thinker was credited with introducing twin policies of “fixing the standards” and “equality before the law.” Despite this, his reputation as a “people hater” is supported by his dictum “When the people are weak, the state is strong.”

ANSWER: **Shāng** Yāng [accept **Gōngsūn** Yāng; prompt on **Wèi** Yāng]

<Philosophy>

6. Richard DiMarchi’s group has developed GLP-1 and glucagon co-agonists to reverse this organ’s steatosis, which is marked by “ballooning degeneration” and Mallory bodies. For 10 points each:

[10m] Name this organ that accumulates fat in both NAFLD (“naffled”) and NASH (“nash”). This organ’s lipogenesis is regulated by its chief microRNA, miR-122, which binds to two viruses that cause its carcinoma.

ANSWER: **liver** [accept (non-alcoholic) fatty **liver** disease; accept **liver** cancer; prompt on **hepatic** cancer or **hepatocellular** carcinoma or non-alcoholic steato**hepatitis**] (The viruses are hepatitis C virus and hepatitis B virus.)

[10h] In the liver, LRP1 drives the endocytosis of “remnants” of these complexes, which enter small intestinal lacteals to form a whitish lymphatic fluid. Microsomal transfer protein assembles these largest triglyceride carriers in the ER.

ANSWER: **chylomicrons** [or **ultra low-density lipoproteins** or **U LDL**; accept **chylomicron** remnants; prompt on **chyle**; prompt on **micelles**; prompt on **lipoprotein** particles; reject “LDL” or “low density lipoprotein” or “VLDL” or “very low density lipoprotein”]

[10e] Like the other fat-soluble vitamins E, K, and D, this vitamin’s esters are incorporated into chylomicrons. Hepatic stellate cells store this vitamin, whose dietary sources include toxic polar bear liver and carrot beta-carotene.

ANSWER: vitamin **A** [accept vitamin **A1** or **retinol** or **retinal** or **retinaldehyde** or **retinoic** acid or **RA** or **retinoids** or **retinyl** esters or **retinoin** or provitamin **A**; accept hypervitaminosis **A**]

<Biology>

7. This author died in a motorcycle crash only two days after publishing a novel that inspired Earl Sweatshirt’s “lost

album” *Gnossos* (“NOSS-oss”). For 10 points each:

[10h] Name this folk singer and author who depicted Gnossos Papadopoulos’s time at Cornell in the picaresque novel *Been Down So Long It Looks Like Up to Me*.

ANSWER: Richard **Fariña** [or Richard George **Fariña**]

[10m] Fariña is the dedicatee of this novel, in which Roger Mexico investigates a Poisson (“PWAH-sahn”) distribution followed by the locations of a lieutenant’s sexual encounters.

ANSWER: ***Gravity’s Rainbow*** (by Thomas Pynchon)

[10e] Thomas Pynchon’s introduction to *Been Down So Long It Looks Like Up to Me* recounts a costume party where Fariña dressed up as Ernest Hemingway and Pynchon dressed up as this author of *Tender Is the Night*.

ANSWER: F. Scott **Fitzgerald** [or Francis Scott Key **Fitzgerald**]

<American Literature>

8. Answer the following about archaeological finds in the Milton Keynes hoard, for 10 points each.

[10e] The Milton Keynes hoard includes three bracelets and two torcs made of this precious metal, which can be “beaten” into a thin “leaf” form.

ANSWER: **gold** [or **Au**; accept **gold** leaf]

[10h] The gold torcs found in the Milton Keynes hoard resemble the metalwork of this continental Iron Age culture named after a type site on Lake Neuchâtel (“new-shah-TELL”). This culture (emphasize) *succeeded* one that names an archaeological phenomenon preventing accurate radiocarbon dating on samples aged from 800 to 400 BCE.

ANSWER: **La Tène** (“lah TEN”) culture (The archaeological phenomenon is the Hallstatt plateau.)

[10m] The abundance of Roman archaeological remains in the Milton Keynes area may stem from its location on this Roman road, where Gaius Suetonius (“sweh-TOH-nee-us”) Paulinus crushed a Celtic revolt led by Boudica (“BOO-dik-uh”).

ANSWER: **Watling** Street [accept Battle of **Watling** Street]

<Other History>

9. In 1972, George Lakoff (“LAKE-off”) analyzed “the logic of fuzzy concepts” in an article titled for these utterances. For 10 points each:

[10m] Give the general term for these utterances, which are words or phrases used to convey indecisiveness or caution about a sentence’s meaning. In English, balanced tag questions are often used as these utterances.

ANSWER: **hedges** [or **hedging**; accept epistemic **hedges**; accept **qualifiers** or **qualifying** phrases or **qualifying** statements or **qualifying** language]

[10e] A 1975 book by Robin Lakoff (“LAKE-off”) argued that this concept influences the use of hedges, such as tag questions and the phrase “sort of.” Since this concept is socially constructed, it differs from biological sex.

ANSWER: **gender**

[10h] In English, hedges often convey this concept because it is not marked grammatically. Alexandra Aikhenvald (“AI-ken-vald”) typologized this concept in her 2004 book, which noted that Turkic languages convey this concept by grammatically marking reported information.

ANSWER: **evidentiality** [or **evidentials**; accept **verificational** or **validational**; prompt on **indirective** or **meditative**; prompt on any description of the **source** of a speaker’s **information**]

<Social Science>

10. Hector Berlioz remarked that a pianist had “solved the riddle of the sphinx” and revealed himself to be “the

pianist of the future” after successfully playing this piece. For 10 points each:

[10h] Name this piano piece that was considered unplayable until Franz Liszt tamed the notorious “quarter note equals 144” instruction in its final movement fugue at a June 1836 Paris concert.

ANSWER: **Hammerklavier** Sonata [accept **Beethoven** Piano **Sonata** no. **29**]

[10e] In a 1988 interview, Vladimir Horowitz called Liszt’s piano transcriptions of these nine Beethoven pieces “the greatest works for piano.” Beethoven’s nine pieces in this genre have nicknames like “Choral” and “Pastoral.”

ANSWER: **symphonies** [or **symphony**; accept *Choral Symphony* or *Pastoral Symphony*]

[10m] Liszt sped up the exceptionally long third movement of the *Hammerklavier*, which proceeds in F-sharp minor before ending on F-sharp major because of the augmentation of this scale degree. Augmenting this scale degree in a minor chord results in a major chord.

ANSWER: **third** [or **mediant**]

<Classical Music>

11. In his book on Africa’s role in making the “world” of this place, John Thornton discusses accounts of states like Biguba and Guinala from the Cape Verdean explorer André Álvares de Almada. For 10 points each:

[10e] Name this body of water whose “Black” framework, formulated by Paul Gilroy, recognizes transnational links forged by members of the African diaspora in the wake of the Middle Passage.

ANSWER: **Atlantic** Ocean [accept North **Atlantic** or South **Atlantic**; accept **Atlantic** slave trade; accept *The Black Atlantic: Modernity and Double Consciousness*; accept *Africa and Africans in the Making of the Atlantic World*]

[10h] The book *Cultures of the Lusophone Black Atlantic* discusses Agudá people whose Nagô ancestors were repatriated to Benin and Nigeria after this 1835 revolt led by enslaved Yoruba Muslims in Salvador da Bahia (“BAH-ee-uh”), Brazil.

ANSWER: **Malê** revolt [or Revolta dos **Malês**; or **Imale** Revolt; prompt on **Great** Revolt or **Grande** Revolta]

[10m] Enslaved Afro-Brazilians were sold south after one of these events in 1877 in the sertão of Ceará. Chronicles and oral sources from Senegambia and the Sahel record several multi-decadal “mega” examples of these events.

ANSWER: **droughts** [or periods of **low rainfall** or **water shortages** or equivalents; accept megad**droughts**; accept Grande **Seca** or Brazilian **drought** of 1877–1878; prompt on **famines** or **food shortages** or similar by asking “due to what environmental cause?”; prompt on El **Niño**; reject “fires”]

<World History>

12. In a poem, a figure named for this noun rides after Hypocrisy and Fraud “on a white horse, splashed with blood” and has a mark on his brow saying, “I AM GOD, AND KING, AND LAW!” For 10 points each:

[10m] Name this concept that is personified in a poem written after the Peterloo Massacre. This is the second title noun in an essay that defines its first title noun as “the best which has been thought and said.”

ANSWER: **anarchy** [accept *Culture and Anarchy*; accept “The Mask of **Anarchy**”]

[10h] In Percy Shelley’s “The Mask of Anarchy,” the narrator “met [this figure] on the way” leading the procession of Anarchy. This figure “had a mask like Castlereagh” (“castle-RAY”) and tosses human hearts to seven bloodhounds.

ANSWER: **Murder**

[10e] This author wrote *Culture and Anarchy*, which argues that personal freedoms without education lead to anarchy and Philistinism. This author also wrote the poem “Dover Beach.”

ANSWER: Matthew **Arnold**

<British Literature>

13. This substance is offered to the gods by the Warao people of Venezuela. For 10 points each:

[10h] Name this substance placed under trees as offerings to maindog spirits. This substance is used before sage and cedar in the purifying smudging ceremony.

ANSWER: **tobacco** [accept tobacco **smoke**]

[10e] Offering tobacco to maindog was common in tribes like the Ojibwe (“oh-JEEB-way”) and the Ottawa, who lived near these specific bodies of water. The migration story of the Anishinabe relates how they moved from the ocean to the land surrounding these specific bodies of water.

ANSWER: the **Great Lakes** [accept Lakes **Superior** and **Huron** and **Ontario** and **Michigan** and **Erie** in any order; or **Nayaano-nibiimaang** Gichigamiin or **five freshwater** seas; or **Grands Lacs**; prompt on **lakes**]

[10m] An anti-recreational smoking campaign targeted at Plains Indian tribes features the tagline “Keep tobacco [this word].” According to Emile Durkheim, this word applies to the symbolic objects reflecting group religious interest.

ANSWER: the **sacred** [or **sacré**; accept “Keep tobacco **sacred**”]

<Religion>

14. Nuclei with a mass number above 220 have a large value of this quantity, contradicting the nuclear shell model’s predictions that this quantity is small for all nuclei and zero for closed-shell nuclei. For 10 points each:

[10h] Name this rank-2 tensor with off-diagonal elements given by the volume integral of charge density times “ r sub i ” times “ r sub j .”

ANSWER: electric **quadrupole moment** [reject “magnetic quadrupole moment” or “mass quadrupole moment”]

[10m] When the mass quadrupole moment of a system changes, this phenomenon occurs. This phenomenon was first directly detected when it changed the length of an arm of a Fabry–Pérot (“fah-bree peh-roh”) interferometer by 10^{-18} (“10 to the negative 18”) meters.

ANSWER: **gravitational waves** [or **gravitational radiation**; reject “gravity waves”] (The second sentence refers to LIGO.)

[10e] Quadrupole magnets act like lenses to focus beams in these devices. The cyclotron is an early example of these devices, while modern ones include RHIC (“rick”) at Brookhaven and the LHC at CERN (“sern”).

ANSWER: particle **accelerators** [accept particle **colliders**]

<Physics>

15. At a 2011 Opera Australia performance of this song, the lyrics were changed to reference “that trendy thing in opera if the plot seems like a mess: that nice surtitlist” (“sur-TAI-till-ist”). For 10 points each:

[10h] Name this song whose lyrics are often changed between performances to respond to current events. The singer of this song mentions “society offenders who might well be underground” before proclaiming, “May none of them be missed.”

ANSWER: “I’ve Got a Little **List**” [or “**As Someday It May Happen**”; accept the “**List** Aria”; accept the “Little **List** Song”]

[10e] “I’ve Got a Little List” is sung by Ko-Ko in this Gilbert and Sullivan opera about the son of the emperor of Japan.

ANSWER: *The **Mikado*** [or *The **Mikado***; or, *The Town of Titipu*]

[10m] Another audience favorite song sung by Ko-Ko in *The Mikado* is “Tit Willow.” (pause) “The Willow Song” is a popular aria in both Verdi’s and Rossini’s opera adaptation of this English play; in Verdi’s adaptation of this Cyprus-set play, the lead soprano sings the aria “Ave maria piena di grazia.”

ANSWER: **Othello** [accept **Otello**; accept *The Tragedy of **Othello**, the Moor of Venice*]

<Other Fine Arts>

16. For 10 points each, answer the following about the fates of mythical Lithuanian couples.

[10e] Perkūnas cuts Mēness, the personification of this celestial object, into pieces for flirting with the Morning Star despite being married to the sun goddess Saulė.

ANSWER: the **moon**

[10h] The sea goddess Jūratė weeps tears of this substance in the ruins of her palace after Perkūnas destroys her mortal lover Kastytis with a thunderbolt. The kraken legendarily excretes this substance.

ANSWER: **amber** [prompt on tree **resin**]

[10m] After her twelve brothers kill her serpent husband, Eglė inflicts this fate upon her children and herself in a popular folk story. The sisters of Phaëthon (“FAI-thon”) undergo this fate on the banks of the river Eridanus.

ANSWER: **turning into trees** [or **dendrifcation**; accept **turning into** specific types of trees, such as **poplars**]
<Mythology>

17. The Great American Biotic Interchange was made possible when the Isthmus of Panama formed and acted as one of these features. For 10 points each:

[10e] Name these features in biogeography that connect landmasses. A widely supported theory argues that humans used one of these features to cross into the Americas over the Bering Sea during the Last Glacial Minimum.

ANSWER: **land bridge** [accept Bering **Land Bridge**]

[10h] The Isthmus of Panama is central to the Mesoamerican Biological Corridor, which was disrupted by the 2010 “Google Maps war” over this country’s Isla Calero. This country depends on power from the Arenal Dam in its disputed province of Guanacaste.

ANSWER: **Costa Rica** [or Republic of **Costa Rica** or República de **Costa Rica**] (Nicaragua disputes those regions with Costa Rica.)

[10m] The Mesoamerican Biological Corridor has helped preserve the habitats of these xenarthrans related to sloths. This pet of Salvador Dalí feeds using a 2-foot-long tongue covered with sticky saliva.

ANSWER: **anteater**s [or **Vermilingua**; accept giant **anteater** or **antbear** or **Myrmecophaga tridactyla**]
<Geography>

18. Answer the following about European authors who wrote about amnesiacs, for 10 points each.

[10h] This author memorably depicted the amnesia of Adam Pollo, who cannot remember whether he has deserted the army or escaped from a psychiatric ward while in a seaside town, in his novel *The Interrogation*. He also wrote *Fish of Gold*.

ANSWER: J. M. G. **Le Clézio** [or Jean-Marie Gustave **Le Clézio**]

[10e] This author created an amnesiac aristocrat who falls off his horse and believes himself to be a Holy Roman Emperor in the play *Enrico IV*. This Italian playwright also wrote *Six Characters in Search of an Author*.

ANSWER: Luigi **Pirandello**

[10m] Yambo loses his memories after a stroke in this author’s novel *The Mysterious Flame of Queen Loana*. In another novel by this author, the computer Abulafia suggests that the Knights Templar are using “telluric currents.”

ANSWER: Umberto **Eco** (The unnamed novel is *Foucault’s Pendulum*.)

<European Literature>

19. A tiling with this property proposed by physicist Joshua Socolar and amateur mathematician Joan Taylor solves

the einstein problem of finding a tiling with this property by using just one tile, or *ein Stein* in German. For 10 points each:

[10m] Identify this property of Penrose tilings. Quasicrystals are ordered but have this unusual property.

ANSWER: **aperiodic** [or **nonperiodic**; accept answers like the objects are **not periodic** or **lack periodicity**]

[10e] Like these things, Penrose tilings possess a scaling self-similarity. The Sierpiński (“sher-PIN-skee”) triangle is one of these things that Benoit Mandelbrot (“BEN-wah MAHN-del-broht”) called “beautiful, damn hard, [and] increasingly useful.”

ANSWER: **fractals**

[10h] Artist Rosemary Grazebrook used these shapes to create an elegant tiling of the plane. In the 1970s, amateur mathematician Marjorie Rice discovered four new ways to arrange these shapes into a tessellation.

ANSWER: **pentagons**

<Other Science>

20. Charles X ordered a blockade of this city after Hussein Dey refused to apologize for striking the French consul Pierre Duval in the face with a flyswatter over a disagreement about grain debts. For 10 points each:

[10e] Name this city invaded by the French in 1830. French territory in North Africa was divided into three *départements* (“day-par-MONT”) centered on Oran, Constantine, and this modern capital of Algeria.

ANSWER: **Algiers** [or **Alger**]

[10h] Louis-Philippe continued Charles’s invasion of Algeria by sending General Thomas Bugeaud (“boo-GOH”) to suppress tribal opposition organized by this leader, who regained nearly two-thirds of Algerian territory in the 1837 Treaty of Tafna.

ANSWER: **Abd el-Kader** [or Emir **Abdelkader**; or **Abdelkader** ibn Muhieddine or ‘**Abd al-Qādir** ibn Muḥy al-dīn; or **Abdelkader** El Djezaïri or **Abdelkader** El Hassani El Djazairi]

[10m] In this decade, Cheikh Mokrani led a Kabyle revolt against French rule after French officials excluded Arabs and Berbers from French citizenship in the Crémieux (“kraym-YOOH”) Decree, passed near the beginning of this decade by the Government of National Defense. Baron Haussman’s renovation of Paris ended at the start of this decade.

ANSWER: **1870s** [prompt on the **seventies**]

<European History>

Extra. In Antigua, these spirits can be driven away by wearing one’s clothing inside out, while a Jamaican example of these spirits appears as the fire-breathing rollin’ calf and fears the moon. For 10 points each:

[10h] Name these Caribbean figures identified as spirits or ghosts, which can be controlled by practitioners of Obeah in Jamaica. Stilt-wearing dancers known as Moko [these figures] perform in masquerades to drive away evil.

ANSWER: **jumbies** [or **jumbees** or **duppys**; accept **jumbie** beads; accept Moko **Jumbies**]

[10m] To appease jumbies after funeral wakes, the first drops of drinks can be left at these liminal locations, where Moongazer can be found staring at the moon. In Haitian Vodou, Papa Legba presides over these locations.

ANSWER: **crossroads** [prompt on **intersections** or **roads**]

[10e] These objects fashioned from red rosary pea seeds can ward away jumbies. Practitioners of Santeria receive necklaces of these objects called *eleke* upon initiation, while Catholics use them to count the Rosary.

ANSWER: **beads** [accept prayer **beads** or rosary **beads**]

<Mythology>