

2023 ACF Regionals

Packet C by Indiana A, Minnesota A, Minnesota B, WUSTL A, WUSTL B

Edited by Nick Jensen, Alexandra Hardwick, Rahul Keyal, Allan Lee, Tim Morrison, Kevin Park, Grant Peet, Graham Reid, and Chris Sims

Tossups

1. *Note to moderator: Read the answerline carefully.*

Japan's JELIS trial of statins and these molecules built on their provision with vitamin E in the GISSI-Prevenzione trial. An "index" created by William S. Harris quantifies these precursors of resolvins in erythrocytes to predict sudden cardiac death risk. Some commercial sources of these serum-triglyceride-lowering molecules contain the antioxidant astaxanthin, a reddish carotenoid that colors Actinopterygii ("ack-tin-op-tuh-RIDGE-ee-eye") that bioaccumulate them. These molecules include the short-chain ALA, which predominates in flaxseeds and undergoes inefficient conversion to their long-chain examples EPA and DHA. Softgel supplements derive these molecules from krill, microalgae, and mackerel. For 10 points, salmon is rich in what polyunsaturated lipids with a double bond closer to the methyl end than omega-6 fatty acids?

ANSWER: **omega-3** fatty acids [or **n-3** fatty acids; accept **EPA** or **eicosapentaenoic acid** until "EPA" is read; accept **DHA** or **docosahexaenoic acid** or **cervonic acid** until "DHA" is read; accept **ALA** or **alpha-linolenic acid** until "ALA" is read; prompt on PUFAs or polyunsaturated fatty acids or carboxylic acids until "fatty acids" is read; prompt on fats or lipids until read; prompt on fish oil or krill oil or seed oils; prompt on ethyl esters; reject "linoleic acid"] (GISSI-Prevenzione found that n-3 PUFAs, but not vitamin E, protected against death in patients who had survived myocardial infarction.)

<Biology>

2. Many teachers of this ethnicity were trained at a college named after Sultan Idris. The author of a 1970 book about this ethnicity's "dilemma" masterminded a country's "weeding" in Operation Lalang. The Green Road Secondary School taught children of this ethnicity their native language at the expense of Indigenous Dayak. Onn Jaafar represented this ethnic group during wartime talks with Tan Cheng Lock. Poverty among the Orang Asli and this ethnic group inspired the 1971 adoption of the New Economic Policy. Tunku Abdul Rahman resigned after UMNO supporters of this ethnicity sparked the anti-Chinese 13 May Incident. This ethnic group largely makes up the bumiputra in a country divided into three federal territories and 13 states called Negeri. For 10 points, what ethnic group names a peninsula that contains Kuala Lumpur?

ANSWER: **Malays** [or Orang **Melayu** or **Malaya** Dwipa; accept **bumiputra** or **bhumiputera** until read; prompt on **Malaysians**; prompt on **Orang Asli** until read] (Mahathir Mohamad wrote *The Malay Dilemma*.)

<World History>

3. A woman created by this author sits in bed reading *A Critique of Postcolonial Reason* to "become so smart that no one will understand me" after writing self-loathing poetry. In a novel by this author, a woman has a fight with her boyfriend when he makes a racist comment about Asian tourists and berates her for forgetting the cream during a dinner at an Italian villa. A college student created by this author writes a story based on her relationship with her ex-girlfriend Bobbi amid her affair with the older actor Nick. One protagonist urges the other to go to Columbia for his MFA at the end of a 2018 bestseller by this author that tracks the relationship of the Trinity College students Marianne and Connell. For 10 points, name this Irish author of *Conversations with Friends* and *Normal People*.

ANSWER: Sally **Rooney**

<British Literature>

4. Philosophers writing in this language used the statement “the hill has fire” to contrast its notions of inference “for oneself” and “for others.” A philosopher who wrote in this language developed an argument about cause beginning “not from self, not from another, not from both, not from neither.” Philosophers writing in this language posited six “knowledge sources,” of which various “orthodox” and “heterodox” schools accept different subsets. A philosopher who wrote in this language used “dependent origination” to argue against “own-being” in *Root Verses* laying out his philosophy of the “Middle Way.” Arthur Schopenhauer rendered a phrase in this language as “thou art that” and drew on its notion of self, which merges with ultimate reality. For 10 points, Nāgārjuna wrote in what language of origin of the terms ātman and Brahman?

ANSWER: **Sanskrit** [or **samskr̥tam**]

<Philosophy>

5. Before this musical’s Broadway premiere, Hal Prince convinced its blonde female lead Jill Haworth to put on a brunette wig. A writer in this musical recites “Casey at the Bat” over the telephone to a woman and later sings that “I met this perfectly marvelous girl / In this perfectly wonderful place.” The second act of this musical begins with a thrown brick interrupting the marriage plans of a landlady and an old fruit vendor. A waiter and a boy soprano begin this musical’s sinister song “Tomorrow Belongs to Me.” This musical, which is based on the Christopher Isherwood novel *Goodbye to Berlin*, begins with the enigmatic Emcee announcing “Welcome!” in three different languages. For 10 points, name this musical that follows the rise of the Nazis through performances at the title Kit Kat Klub.

ANSWER: **Cabaret**

<Other Fine Arts>

6. A novel from this country depicts an 82-year-old art critic for *The Times* who concludes that the title figures “can’t replace any people” and who visits Tintoretto’s painting *White-Bearded Man* every other day. In another novel from this country, Ermelinda Tuzzi, who is often called Diotima, creates a philosophical salon in a section titled *Pseudoreality Prevails*. That unfinished three-volume modernist novel from this country is about a mathematician. Novels from this country include one in which Wertheimer commits suicide after he encounters the piano prodigy Glenn Gould and one about the chess master Dr. B. This country’s novels include *The Man Without Qualities*, *The Loser*, and *The Royal Game*. For 10 points, name this home country of Robert Musil, Thomas Bernhard, and Stefan Zweig.

ANSWER: **Austria** [or **Österreich**; or Republic of **Austria** or Republik **Österreich**; accept **Austria**-Hungary, **Austro**-Hungarian Empire, **Österreichisch**-Ungarische Monarchie, or **Osztrák**-Magyar Monarchia] (The first line is about *Old Masters* by Thomas Bernhard.)

<European Literature>

7. This condition annually afflicted the Baltic Neri people in a story disputed by Herodotus. Carlo Ginzburg profiled a godly peasant with this condition named “Old Thiess” from its outbreak in Livonia. Around 1589, Peter Stumpp of Bedburg was tortured for inducing this condition with a magic belt. Friedrich S. Krauss argued that the Bosnian term “vukodlak” initially referred to this condition, which Mircea Eliade (“MEER-chay-ah ay-lee-AH-day”) argued was simulated with drugs by Dacian (“DAY-shun”) warriors. For trying to feed Zeus the flesh of his son Nyctimus, this condition is inflicted on an Arcadian king. This condition, which may be treated by monkhood (“monks-hood”) or aconite, afflicted Lycaon. For 10 points, a 1941 horror film starring Lon Chaney Jr. popularized the use of silver bullets against what condition triggered by a full moon?

ANSWER: **lycanthropy** [or were**wolf**ism; or the ability to transform into a **wolf** or equivalents; accept *The Wolf Man*; accept **hounds of god** or **dogs of god** or *Old Thiess*, a *Livonian Werewolf*; accept **vukodlak**as or variants until read; prompt on **shapeshifting** or **therianthropy** or **transforming** into an animal or equivalents; prompt on **witchcraft**, **sorcery**, black **magic**, **devilry** or equivalents]

<Mythology>

8. An embroidered sack belonging to one of these people named Ashley is the focus of a 2021 book by Tiya Miles. Jeroen Dewulf discussed the controversial connection between legends of these people flying and a mass drowning in Dunbar Creek at a “landing.” Katrina Hazzard-Donald described how the “invisible institutions” of these people were centered around rituals like the ring shout. A 1974 book by Eugene Genovese is named after a song composed by these people about metaphorically crossing the Jordan. Benjamin Botkin’s “folk history” *Lay My Burden Down* was based on over two thousand oral testimonies about still-living Americans’ past experiences as these people by the Federal Writers’ Project. For 10 points, Solomon Northup wrote a narrative about his “twelve years” as one of what people who escaped on the Underground Railroad?

ANSWER: **slaves** [or **enslaved** people or **slavery**; accept escaped **slaves** or **freedmen** or equivalents; accept **slave** narratives or **Slave Narrative Collection**; prompt on **African**-Americans or **Black** people or specific groups of Africans such as **Igbo** by asking “of what status?”; prompt on **children** or **boys** or **girls**; prompt on **runaways**; prompt on plantation **workers** or house **servants**] (The “landing” is Igbo Landing.)

<American History>

9. The Ward identity is a constraint on the possible values of this property that can appear in nonzero elements of the S-matrix. Mueller tensors describe processes that change this property that can be quantified by four parameters sometimes labeled S-zero through S-three or alternatively with a complex Jones vector. The state of this property relative to a plane of incidence can be described as s or p. Dielectric materials are sensitive to this property if they are anisotropic (“ANN-iso-TROP-ik”), meaning stress patterns in a material can be measured by their effect on this property. This property can be altered by waveplates, which are made of materials with a different index of refraction for different types of this property, termed birefringence. For 10 points, name this property of light that can be circular or linear and describes the direction of its electric field.

ANSWER: **polarization** [or word forms like **polarized** or **polarizing**; accept **polarized** light; accept circular **polarization** or linear **polarization**; reject “polar” or “polarity”]

<Physics>

10. *Note to moderator: Read the answerline carefully.*

The *Monitor*’s 2022 report on this issue revealed Djibouti and Oman’s lack of “consumption” for the Oslo Action Plan. In the Central African Republic, the Wagner Group obstructed this issue’s amelioration in 3R strongholds by the UN’s “Action Service.” It’s not tuberculosis, but the CMAC addresses this issue with APOPO’s Gambian pouched “hero rats,” like Magawa. The book *After the Guns Fall Silent* and the comic *Superman: Deadly Legacy* exposed this issue in Mozambique and Croatia. The HALO Trust’s campaign against this issue publicized visits to Bosnia and Angola by Princess Diana. Signatories to the 1997 Ottawa Treaty destroyed stockpiles of these objects due to Jody Williams’s Nobel-winning “international campaign” to ban them. For 10 points, what devices deter personnel and tanks by creating explosive fields?

ANSWER: land **mines** [accept **mining**, **demining**, **minefields**, anti-personnel **mines**, blast **mines**, fragmentation **mines**, anti-tank **mines**, or AT **mine**s; accept International Campaign to Ban Land **Mines** or **Mine** Ban Treaty; prompt on **explosives**, **weapons**, **hazards**, **explosive** remnants of war, **ERW**, **munitions**, **ammunition**, unexploded **ordnance**, abandoned explosive **ordnance**, **UXO**, **UO**, or **IEDs**; reject “shells,” “bombs,” “nuclear weapons,” or “warheads”] (The CMAC is the Cambodian Mine Action Centre.)

<Current Events>

11. Marcel Schwob's *Imaginary Lives* describes this artist's penchant for line drawings of rings called *mazzocchi* ("mahd-ZOAK-kee"). In *Painting and Experience*, Michael Baxandall analyzes the patterned "problem hat" in a painting by this artist that Lorenzo de' Medici confiscated from the Salimbeni family for his bedroom. He's not Botticelli, but oranges and roses dot the top of the central panel of a series by this student of Ghiberti. Silver leaf oxidation has plagued that three-part series by this artist, which features foreshortened fallen horses and broken lances converging at its bottom. This artist used an early linear perspective to paint *condottieri* like Sir John Hawkwood and Niccolò da Tolentino. For 10 points, name this 15th-century Florentine artist of *The Battle of San Romano*.

ANSWER: Paolo **Uccello** [or Paolo **di Dono**]

<Painting/Sculpture>

12. Before a campaign, this general impaled two soldiers who had drunkenly killed their superior and warned of similar punishment to any soldier who attacked without provocation. This general ordered bowmen to climb to the top of their ships' masts to gain a height advantage over enemy parapets. For failing to support a city sacked when this general entered it through an abandoned aqueduct, Vitiges murdered Theodahad. This general won the Siege of Panormus during a campaign to avenge the murder of the bathing queen Amalasantha. This general won at Tricamarum and Ad Decimum. This victor of the Vandalic War invaded Gothic Italy in 535 CE. This general and Narses helped put down the Nika Riots in Constantinople. For 10 points, name this Byzantine general under Justinian I.

ANSWER: **Belisarius** [or Flavius **Belisarius**] (The abandoned aqueduct was used to enter Naples.)

<European History>

13. In a play by this author, an offstage voice reveals himself to be a king, who kills a three-thousand-year-old frog due to boredom. In that play by this author, the king kills the protagonist's lover before breaking the flagstaff in a gold-mining town. In a poem by this author, children "build their houses with sand" and "play with empty shells" "on the seashore of endless worlds." Nandini is compared to the title flowers of a play by this author, who also wrote a play in which Amal is mocked by the village headman after fantasizing that he will receive a letter from the king. This author of *Red Oleanders* wrote a poetry collection that begins "thou hast made me endless, such is thy pleasure." For 10 points, name this author of the play *The Post Office* and the collection *Gitanjali*.

ANSWER: Rabindranath **Tagore** [or Rabindranath **Thakur**; accept **Gurudev**; prompt on **Biswakobi** or **Kobiguru**]

<World Literature>

14. These objects are observed by the Interior Composition Explorer telescope, whose measurements of their radii can place constraints on their equation of state. Transient hypermassive examples of these objects have been identified from quasi-periodic oscillations that were found in data from the Compton Observatory. In 2017, the merger of two of these objects was detected in a multi-messenger astronomy breakthrough, including gravitational waves and a short gamma-ray burst. A binary system of two of these objects, which provided evidence for gravitational waves, was studied by Hulse and Taylor. These objects originate from collapsed supergiants and are supported by fermionic degeneracy pressure allowing mass up to the TOV limit. These stars include rapidly rotating pulsars. For 10 points, name these extremely compact stellar remnants composed of a neutral subatomic particle.

ANSWER: **neutron** stars [accept **magnetars**; accept **pulsars** until read; accept hypermassive **neutron** stars; accept **neutron** star equation of state; prompt on **stellar remnants** until read; prompt on **NS** by asking "what does that stand for?"; reject "stars"]

<Other Science>

15. Due to their unsavory tactics, the “tackers” fell out of favor with this ruler while trying to ban the practice of “occasional conformity.” The first fruits were used to fund a welfare scheme called this ruler’s “bounty” that increased the pay of clergy. To satirize this ruler’s accession, a popular author devised the fable of the cock and the horses in the pamphlet *The Shortest Way with the Dissenters*. During this ruler’s reign, Henry Sacheverell (“suh-SHEV-rull”) was impeached. This ruler was advised by the “duumvirs” (“doo-UM-vurs”) of Lord Godolphin and the Duke of Marlborough, as well as Sarah Churchill. This ruler names the American theater of the War of the Spanish Succession. Catholics were barred from succeeding this ruler by the Act of Settlement. For 10 points, the Acts of Union made what monarch the first Queen of Great Britain?

ANSWER: Queen **Anne** [accept Queen **Anne**’s War; accept Queen **Anne**’s Bounty] (Daniel Defoe wrote *The Shortest Way with the Dissenters*.)

<Other History>

16. Ruut Veenhoven’s 1984 book on the “conditions of” this concept identifies its predictor variables based on over 240 past studies. A variant of this concept with the acronym “SWB” has been analyzed by Ed Diener, who overturned its previous identification with youth and limited ambition. To elicit individual responses about this concept, Hadley Cantril developed a namesake “ladder” ranging from zero to ten. A 2012 book titled for “Engineering” this concept equates it to “expectations minus reality.” The economist John F. Helliwell is best-known for pioneering an annual “World Report” for this concept, which Finland has topped since 2018. Increasing a “gross national” index of this concept is an official policy of the government of Bhutan. For 10 points, name this concept promoted by hedonism.

ANSWER: **happiness** [or being **happy**; accept subjective **well-being** or **pleasure** or **satisfaction**; accept Gross National **Happiness** Index; accept *Engineering Happiness*; accept *Conditions of Happiness*]

<Social Science>

17. A woman with this job shows her boss Tadpole a photograph of the title Portuguese slave-owner, who fathered both her Great Gram and grandmother, in a novel that shaped Toni Morrison’s style when she edited it at Random House. Ursa has this job in Gayl Jones’s *Corregidora*. The protagonist of a novel feels that she has “turned into a man” when she bathes a sick person with this job whom her adulterous husband brought home in his wagon. A “Queen Honeybee” with this job popularizes the clothes made by the protagonist’s company Folkspants, Unlimited. Celie leaves “Mister” and falls in love with a woman with this job, Shug Avery, in Alice Walker’s *The Color Purple*. For 10 points, name this profession of the woman who popularized Abel Meeropol’s “Strange Fruit,” Billie Holliday.

ANSWER: blues **singers** [or **vocalists**; accept answers like jazz **singers** or lounge **singers**; prompt on **musicians** or **entertainers** or **performers**]

<American Literature>

18. John Mbiti wrote about one of these objects that brought death to the Bambuti people and discussed the Nuer and Sandawe belief that men originated from one. Mekatilili Wa Menza led the Giriama people of the Mijikenda to fight the British destruction of these objects in Kenya's Kaya Fungo, which is a site similar to Nigeria's Osun-Osogbo ("OH-shoon oh-sohg-bo"). In an example of polysemy, one of these physical objects represents both normative womanhood and sensory milk in an Ndembu rite of passage analyzed by Victor Turner in a book titled for a group of them "of symbols." A sacred type of these objects, the Igbo *óji* or Yoruba *iroko*, is used to make djembes. Senegalese griots were entombed in an "upside-down" type of these objects, the baobab. For 10 points, Dogon Awa masks are carved from what objects that form sacred groves?

ANSWER: **trees** [accept **shrubs**; accept **forests** or **woods**; accept sacred **groves** or **baobabs** until each is read; accept hard**woods**; accept *The Forest of Symbols*; accept forbidden **tree**; accept specific trees like wild **figs**, **sycamores**, African **teak**, **mudyi** tree, or milk**tree**; prompt on **plants**; prompt on **shrines** by asking "around what natural objects?"; prompt on forbidden **fruit** by asking "from what type of object?"]

<Religion>

19. Materials with this property can be characterized by the Cassie–Baxter or Wentzel states depending on roughness and energy parameters. Manganese oxide polystyrene nanocomposites provide a strong form of this property to coatings. This property for a surface is measured in the sessile drop method. Dual crystalline admixture is used to create concrete with this property due to byproducts filling pores and capillaries. High interfacial tension results in a form of this property characterized by a high contact angle. An extreme form of this property causes self-cleaning in the "lotus effect." Surfaces with this property are non-wettable, resulting in the formation of droplets supported by surface tension. For 10 points, name this property possessed by oils, which describes how a chemical or surface repels water.

ANSWER: **hydrophobicity** [or word forms like **hydrophobic**; accept super**hydrophobicity** or ultra**hydrophobicity**]

<Chemistry>

20. A circle dance originated by this ethnicity that resembles the jumping of goats is called the kochari and is often accompanied by playing the cylindrically-bored zurna. In the early 20th century, this ethnicity's indigenous khaz system of neumes informed the pioneering ethnomusicology of the monk Komitas. The folk music of this ethnicity inspired a virtuosic seven-section 1950 trumpet concerto in A-flat major. Martin Scorsese's *The Last Temptation of Christ* popularized film scores' use of an apricot-wood double-reed instrument from this ethnic group, the duduk. A composer of this ethnicity used fast piercing xylophone notes to quote one of its folk songs in a martial section of the ballet *Gayane* ("gah-yah-NAY") titled "Sabre Dance." For 10 points, name this ethnicity of Alexander Arutiunian and Aram Khachaturian.

ANSWER: **Armenian** [or **Hayer**]

<Classical Music>

21. Since the kinetics of this molecule and an artificial derivative differ, researchers use the “lumped constant.” Protein and this molecule cause an elevation of specific gravity. Helen Murray Free developed this molecule’s dip-and-read test. The Da Qing study screened for “impaired tolerance” to this molecule, which is labeled with fluorine-18 in a common radiotracer for PET scans to measure its uptake. This neutral molecule and sodium are imported by brush border cotransporters from the glomerular filtrate during its renal reabsorption. The “estimated average” level of this molecule can be interconverted with its measurement by hemoglobin A1c. For 10 points, what molecule is measured by meters that require a finger prick and “continuous monitors” that track its concentration in the blood of diabetics?

ANSWER: glucose [or dextrose or D-glucose or D-gluco-hexose; accept blood glucose, estimated average glucose, continuous glucose monitors, glucometers, glucose uptake, glucose reabsorption, sodium/glucose cotransporters, fluorodeoxyglucose, or oral glucose tolerance test; prompt on blood sugar; prompt on hexose; prompt on C₆H₁₂O₆; prompt on CGMs, eAG, SGLT2, FDG, IGT, or GTT by asking “what does that stand for?”]

<Biology>

Bonuses

1. Birds and vegetative forms surround vibrant women in many paintings by this country's self-taught artist Baya, who signed a manifesto declaring "the sign is louder than the bomb" by its Aouchem ("ow-SHEM") Group. For 10 points each:

[10m] Name this modern-day country seen in an 1834 painting of courtesans lounging on Persian rugs and smoking a hookah pipe. Baya inspired Pablo Picasso to reinterpret that painting in a series labeled "A" to "O."

ANSWER: **Algeria** [or People's Democratic Republic of **Algeria** or al-Jumhūriyya **al-Jazā'iriyya** ad-Dīmuqrāṭiyya aš-Ša'biyya or République **algérienne** démocratique et populaire] (The first artist is Baya Mahieddine. "Aouchem" means "tattoo.")

[10e] Baya rejected this style that exoticizes the Middle East and Africa, as in Eugène Delacroix's *Women of Algiers*. Jean-Léon Gérôme's *The Snake Charmer* graces the cover of an Edward Said book titled for this subject.

ANSWER: **Orientalist** painting [accept **Orientalism**]

[10h] Moroccan artist Lalla Essaydi subverted Orientalist images with photos of Arab women depicted with this visual element. Shirin Neshat's *Women of Allah* series adds this element to photos of veiled women holding guns.

ANSWER: they are covered in **calligraphy** [accept Arabic **calligraphy** or Persian **calligraphy**; prompt on Arabic or Persian **text** or **writing**; prompt on **henna**, **mehndi**, **tattoos**, or **ink** by asking "used to create what visual element?"]
<Painting/Sculpture>

2. A standard about one of these vehicles describes it as "bound for glory" and was one of hundreds of folk songs collected by Alan Lomax. For 10 points each:

[10e] Name these vehicles that are a common motif in gospel music. Gladys Knight & the Pips recorded a song about a "midnight" one of these vehicles to Georgia.

ANSWER: **trains** [accept "Midnight **Train** to Georgia"; accept "This **Train**"]

[10h] The song "This Train" was a hit for this gospel singer and guitarist who is often called "the godmother of rock and roll." In 1964, she toured Europe with Muddy Waters and performed spirituals such as "Down by the Riverside."

ANSWER: Sister Rosetta **Tharpe** [or Rosetta **Nubin**]

[10m] The song "This Train" also inspired the title of this man's autobiographical novel *Bound for Glory*. This outspoken socialist and anti-fascist folk singer attacked "the landlord and the soldiers" in his song "Jesus Christ."

ANSWER: Woody **Guthrie** [or Woodrow Wilson **Guthrie**]

<Other Fine Arts>

3. The small-world experiment gave rise to the notion that nodes in these structures are separated by "six degrees of separation." For 10 points each:

[10e] Name these systems of connected individuals and their interactions. Their contemporary examples include China's Wēibó.

ANSWER: social **networks** [prompt on social **media**]

[10m] This concept from social network analysis is represented by links and edges on sociograms. Mark Granovetter's 1973 paper on the "strength" of "weak" examples of this concept discussed the emergence of "embeddedness."

ANSWER: **ties** [accept weak **ties** or "The Strength of Weak **Ties**"]

[10h] Granovetter popularized Georg Simmel's earlier thesis that social networks exhibit a strong type of "closure" named for this adjective, whereby a tie between A and B and one between B and C strongly implies one between A and C.

ANSWER: **triadic** [accept strong **triadic** closure]

<Social Science>

4. After he commits a robbery, this character plans to claim that he has stomach cancer if a policeman asks him to explain the giant bulge under his shirt. For 10 points each:

[10h] Name or describe this character who carries out that robbery with his friend Mike. A man nicknamed “Old Hitler-face” obtains proof of this character’s guilt when a stash of money pours out of a drainpipe during a storm.

ANSWER: the **long-distance runner** [or **Smith**; accept the **protagonist** of “The **Loneliness of the Long-Distance Runner**”; accept the **narrator** of “The **Loneliness of the Long-Distance Runner**”]

[10m] In “The Loneliness of the Long-Distance Runner,” Smith throws a race in defiance of the authorities at one of these places called Ruxton Towers. An autobiography by Brendan Behan depicts his time in one of these youth detention centers once common in the UK and Ireland.

ANSWER: **borstals** [accept **Borstal Boy**; prompt on **prisons**, **jails**, **reformatories**, or reform **schools**]

[10e] “The Loneliness of the Long-Distance Runner” is often compared to this Anthony Burgess novel in which Alex is experimented on in prison after he commits a string of crimes with his “droogs.”

ANSWER: *A **Clockwork Orange***

<British Literature>

5. The refrigerant and potent greenhouse gas carbon tetrafluoride has this molecular geometry. For 10 points each:

[10e] Name this molecular geometry that also describes the relatively stable noble gas compound xenon tetroxide.

All bond angles are roughly 109 degrees in this geometry.

ANSWER: **tetrahedral** [or **tetrahedron**]

[10h] The symmetry of molecules with simple tetrahedral geometry is described by this high-symmetry point group. Molecules with this symmetry group have four C₃ rotation axes.

ANSWER: **T_h**-sub-**d** [or **T_d**]

[10m] Another noble gas compound, xenon difluoride, has linear geometry due to the central xenon atom having this many lone pairs. This is one more than the number of lone pairs on the central atom in the most common molecules with bent geometry.

ANSWER: **three** [or **3**]

<Chemistry>

6. *Two answers required.* According to Bertrand’s theorem, these are the only two force laws that give rise to closed orbits for any bound particle. For 10 points each:

[10m] Give the form of these two force laws in terms of the separation, r . One law gives the gravitational force between massive objects separated by r , while the other law gives the restoring force from a spring displaced by r .

ANSWER: **one over r -squared** AND **r** [accept answers in either order; accept **inverse-square** or r to the **minus two** or **negative second** power in place of “one over r -squared”; accept **linear** or r to the **one** or **first power** in place of “ r ”]

[10e] Linear force laws describe harmonic oscillators, which can be used to approximate any energy function near its minimum, using the derivative of this order for the potential, provided it exists and is nonzero. This derivative gives the curvature of the potential.

ANSWER: **second** derivative [or derivative of degree **two** or **2**]

[10h] The closed stable orbits in Bertrand’s theorem are related to extra constants of the motion, which corresponds to this quantity for the inverse-square law case. This quantity can be written as p cross L minus mkr .

ANSWER: **Laplace**–Runge–Lenz vector [or **LRL** vector; accept **Laplace** vector or Runge–**Lenz** vector; reject “Laplacian”]

<Physics>

7. Cesare Orsenigo aided the distribution of this document, which was intended to be read on Palm Sunday to warn of a “mad prophet” disgracing the teaching of Saint Boniface. For 10 points each:

[10h] Name this papal encyclical that served as the culmination of the years-long *Kirchenkampf*. It is often paired with the “*Divini Redemptoris*” that disparaged communism.

ANSWER: “**Mit brennender Sorge**” [or “**With Burning Anxiety**”]; accept **deep** in place of “burning”; accept **concern** in place of “anxiety”]

[10e] Although not directly named, the leader of this political party is understood to be the “mad prophet” described by Pius XI in “*Mit Brennender Sorge*” for his promotion of Aryans as a “master race” in need of *Lebensraum*.

ANSWER: **Nazi** Party [or **National Socialist** German Workers’ Party; or **NSDAP** or **Nationalsozialistische Deutsche Arbeiterpartei**]

[10m] Pius XI also criticized Benito Mussolini’s closure of organizations of this type in the “*Non abbiamo bisogno*” encyclical. The Edelweiss Pirates opposed a Nazi organization of this type that was based on the *Wandervogel* movement.

ANSWER: **youth** groups [or **youth** organizations; or **youth** movements; accept Hitler **Youth** or Hitler**jugend** or **HJ**; accept German **Youngsters** or Deutsches **Jungvolk** or **DJ**; reject “scouting” or “scouts”]

<European History>

8. This author’s idea of an “original relation” to nature inspires Will Andrews to join a group of Kansas buffalo hunters in John Williams’s novel *Butcher’s Crossing*. For 10 points each:

[10e] Name this author who imagined himself as a “transparent eye-ball” who absorbs life’s beauty in the 1836 essay “*Nature*.”

ANSWER: Ralph Waldo **Emerson**

[10m] In *Butcher’s Crossing*, Will leaves this place to find nature. Emerson praised the “Man Thinking” ideal and equated the maxims “know thyself” and “study nature” in his speech “*The American Scholar*,” given at this place.

ANSWER: **Harvard** University [or **Harvard** College; prompt on **Cambridge**]

[10h] Marilynne Robinson’s studies of Transcendentalist metaphor informed this debut novel of hers, in which Ruthie narrates her upbringing in Fingerbone, Idaho, with her eccentric aunt Sylvie in a style akin to Emerson’s “transparent eye-ball.”

ANSWER: **Housekeeping**

<American Literature>

9. Members of the Baldwin–Felts detective agency fired on strikers in this state with a machine gun-fitted armored train nicknamed the “Bull Moose Special.” For 10 points each:

[10m] Name this state where the brothers Albert and Lee Felts were killed in Matewan during a shootout with police chief Sid Hatfield and mayor Cabell Testerman. Bill Blizzard led a workers’ march to Logan County in this state.

ANSWER: **West Virginia** [or **WV**]

[10e] The Baldwin–Felts agency shot workers in this industry during West Virginia’s Battle of Matewan and Colorado’s Ludlow Massacre. Workers in this industry often contracted black lung disease.

ANSWER: **coal** industry [or **coal** mining; accept **coal** miners or **coal** mine workers; prompt on **mining** or **miners** or **mine** workers]

[10h] Blizzard’s march was joined by over two thousand Black miners from a bituminous coalfield named for this person near the Kanawha River. John Gadsby Chapman painted this person’s baptism for the US Capitol rotunda.

ANSWER: **Pocahontas** [or **Amonute**; accept **Matoaka**; accept **Rebecca Rolfe**; accept *Baptism of Pocahontas*; accept **Pocahontas** Coalfield or Flat Top-**Pocahontas** Coalfield; accept **Pocahontas**, Virginia; prompt on **Rolfe**]

<American History>

10. Answer the following about the intersection of philosophical idealism and the state of California, for 10 points each.

[10e] This California city is named for an Irish bishop and proponent of subjective idealism who wrote *Three Dialogues between Hylas and Philonous* and coined the maxim “to be is to be perceived.”

ANSWER: **Berkeley**, California [accept George **Berkeley** or Bishop **Berkeley**]

[10m] In his 1898 address to Berkeley’s Philosophical Union, William James first published the term “pragmatism” and credited it to this objective idealist. An essay by this philosopher praises the scientific method over three other approaches, including the “method of tenacity.”

ANSWER: Charles Sanders **Peirce** [or C. S. **Peirce**] (The essay is “The Fixation of Belief.”)

[10h] This American idealist and historian wrote a sprawling *History of California*. Martin Luther King Jr. borrowed the term “beloved community” from this philosopher, who wrote *The Religious Aspect of Philosophy* and *The World and the Individual*.

ANSWER: Josiah **Royce**

<Philosophy>

11. Two attached rounded stone houses make up this island chain’s Knap of Howar, which contained Unstan ware that was also found at the Tomb of the Eagles. For 10 points each:

[10m] Name this island chain where carved stone balls and grooved ware pottery were discovered at Neolithic sites like Skara Brae.

ANSWER: **Orkney** Islands [or the **Orkneys**; or **Arcaibh** or **Orkneyjar** or **Orknojar**; prompt on **Britain** or **British Isles**; prompt on **Scotland** or **Alba**; prompt on the **United Kingdom** or **UK**]

[10e] The Ring of Brodgar in the Orkneys exemplifies this type of earthwork that consists of a circular bank enclosing a large, flat area. One of these earthworks on England’s Salisbury Plain is named for the huge stone circle within it.

ANSWER: **henges** [accept Stone**henge**]

[10h] During the 1970s, this British archaeologist led artifact excavations in the Orkneys at Quanterness and various burnt mounds. This archaeologist developed the Anatolian hypothesis about the spread of the Proto-Indo-Europeans.

ANSWER: Colin **Renfrew** [or Andrew Colin **Renfrew**, Baron Renfrew of Kaimsthorn]

<Other History>

12. Ellen van Neerven, an author from this country, included the chapter “I can’t wait to meet my future genders” in their poetry collection *Throat*. For 10 points each:

[10m] Name this country whose author Kim Scott has won its Miles Franklin Literary Award twice. An author from this country controversially appropriated native narrative viewpoints in a novel about Jimmie Blacksmith.

ANSWER: **Australia** [or Commonwealth of **Australia**]

[10e] This Australian author sought Indigenous communities’ feedback for the novel *A Long Way From Home*, which engages with colonialism. This author’s novels include *Oscar and Lucinda* and *True History of the Kelly Gang*.

ANSWER: Peter **Carey** [or Peter Philip **Carey**]

[10h] This 2014 non-fiction book re-assesses colonial accounts of Indigenous Australians and controversially argues that Aboriginal settlements were based on agriculture. This Bruce Pascoe book has the subtitle *Black Seeds*.

ANSWER: **Dark Emu** [or **Dark Emu: Black Seeds: Agriculture or Accident?**; or **Dark Emu: Aboriginal Australia and the Birth of Agriculture**]

<World Literature>

13. This symphony's five-movement form with a slow central movement and generally exuberant atmosphere bears similarity with Schumann's *Rhenish* Symphony, a favorite of its composer. For 10 points each:

[10h] Name this D major symphony whose music was used for the *Diamonds* section of the ballet *Jewels*. The musicologist David Brown considers this symphony's nickname misleading, as its composer used folk idioms to express imperialism.

ANSWER: Pyotr Ilyich **Tchaikovsky's Third** Symphony [or **Polish** Symphony; or Pyotr Ilyich **Tchaikovsky's** Symphony No. **3**]

[10m] Tchaikovsky's only two major-key symphonies are the Third Symphony and a programmatic symphony based on this literary work. This "dramatic poem" by Lord Byron also inspired incidental music by Schumann, including an oft-excerpted overture.

ANSWER: **Manfred** [or **Manfred: A dramatic poem**; accept **Manfred Overture** or **Manfred: Dramatic Poem with Music in Three Parts** or **Manfred. Dramatisches Gedicht in drei Abtheilungen**; accept **Manfred** Symphony]

[10e] As a young composer, Tchaikovsky was given the task of orchestrating two of Schumann's "Symphonic" examples of these pieces for piano. Chopin wrote an Opus 10 set of these pieces, which include the "Revolutionary."

ANSWER: **études** [or **study** or **studies**; accept "Revolutionary" **Étude**; accept *Symphonic Études* or *Études Symphoniques*]

<Classical Music>

14. In this formalism, beta reduction corresponds to replacing variables with argument expressions. For 10 points each:

[10h] Name this semantic formalism that describes abstraction and application of functions in terms of binding and substitution of variables.

ANSWER: **lambda calculus** [reject "calculus"]

[10m] The lambda calculus is a formalism for describing functions with this property, equivalent to general recursive functions. This concept is related to decidability, but applies to functions rather than decision problems.

ANSWER: **computable** [or **computability**; accept lambda **computable**]

[10e] Computability can equivalently be defined in terms of universal "machines" named for this British mathematician and pioneer of computer science.

ANSWER: Alan **Turing** [accept **Turing** machines; accept **Turing** computability]

<Other Science>

15. Bayezid II supposedly gave the Vatican a "vernicle" with a portrait of Christ on this gemstone, which represents Mercury in Vedic astrology. For 10 points each:

[10m] Name this May birthstone whose association with Thoth may explain its purported ability to boost memory. Isaac Newton translated a Hermetic Arabic text that alchemists believed was carved on a "tablet" of this gemstone.

ANSWER: **emerald** [accept **Emerald Tablet**, **Smaragdine Tablet**, *Tabula Smaragdina*, or *Lawḥ al-zumurrudh*; accept **Emerald** Vernicle or Veronica **Emerald**; accept **trapiche** emerald; prompt on **beryl**]

[10h] The *Emerald Tablet* is the origin of this Hermetic axiom, which indicates that the physical world echoes the spiritual or that the microcosm reflects the macrocosm. This saying encapsulates Helena Blavatsky's law of analogy.

ANSWER: "as **above**, so **below**" [or "as in **heaven**, so on **earth**"; or "that which is **above** is like to that which is **below**"; or "that which is **below** is like that which is **above**"; or "quod est **superius** est sicut quod **inferius**"; or "quod **inferius** est sicut quod est **superius**"; accept paraphrases]

[10e] The idea of "as above, so below" is illustrated by the pose of the Magician from the Rider–Waite deck of these occult cards that are divided into Major and Minor Arcana.

ANSWER: **tarot** cards [or **tarocchi** or **Tarock**; accept Rider–Waite **tarot**]

<Mythology>

16. Answer the following about minhagim (“meen-hog-EEM”), or regional customs by which various Jewish communities practice halacha (“hah-lah-KHAH”), for 10 points each.

[10e] In a 1904 controversy among Samarkand’s Bukharan Jews, shechita (“sh’khee-TAH”) slaughterers refused to follow less stringent Sephardic practices to approve meat for consumption under this system of dietary laws.

ANSWER: **kashrut** [or **kosher** food; or **kashruth** or **kashrus**]

[10h] Jacob Samuel recorded that these Jews ate meat and milk together and forbade unmarried men from carrying weapons. These Jews of Dagestan and Azerbaijan traditionally spoke a Persian language, unlike Georgian Jews.

ANSWER: **Mountain** Jews [or **Juhuro**, **Juhurim**, **Juvuro**, **Juwurim**, **Cuhuri**, or Yehudey he-**Harim**; or **Kavkazi** Jews, Yehudey **Kavkaz**, **Gorsky** Jews, or **Gorskie** evrei; accept **Tats**, **Tatians**, **Dagchufut**, or Judeo-**Tat**; prompt on **Caucasus** Jews or **Caucasian** Jews; prompt on **Mizrahi** Jews or **Mizrahim** or Edot Ha**Mizrach**]

[10m] In 2008, Israel recognized Sigd, a holiday on which members of this country’s Jewry climb a mountain and hear Kessim read from the Octateuch. This country’s Beta Israel community claims descent from the tribe of Dan.

ANSWER: **Ethiopia** [or Federal Democratic Republic of **Ethiopia**, Ye-**Ītyōppya** Fēdēralawī Dēmokirasīyawī Rīpebilīk, **Itiyoophiyaa**, **Ītiyop’iya**, or **Itoobiya**; accept **Ethiopian** Jews or **Ethiopian** Jewry or Yehudey **Etyopyah**]

<Religion>

17. The 1991 Wingspread Conference identified these environmental compounds as a potential cause of falling sperm counts, pioneering the “Developmental Origins of Health and Disease” framework. For 10 points each:

[10h] Give this two-word term for often-xenobiotic chemicals that block, mimic, or otherwise interfere with hormone signaling, such as DES and bisphenol A. Perchlorate and triclosan may act as these hazards for thyroid hormone.

ANSWER: **endocrine disruptors** [or **endocrine-disrupting** chemicals or **endocrine-disrupting** compounds or **endocrine disruption**; accept **hormonally active agents**; prompt on **EDCs** or **HAA**s by asking “what does that stand for?”; prompt on hormone **disruptors**; prompt on **persistent organic pollutants** or **POPs**] (DES stands for diethylstilbestrol.)

[10e] Lipophilic endocrine disruptors may affect the adrenal examples of these endocrine structures, which include the ductless parathyroid and pituitary.

ANSWER: endocrine **glands** [accept pituitary **gland**; accept parathyroid **glands**; accept adrenal **glands** or suprarenal **glands**]

[10m] PCBs may impair the pituitary gland’s response to these hypothalamic neurohormones, which stimulate pituitary secretion of hormones like GH and TSH. These tropic hormones include one for gonadotropins abbreviated GnRH.

ANSWER: **releasing** hormones [or **releasing** factors; or **liberins**; accept gonadotropin-**releasing** hormone; accept thyrotropin-**releasing** hormone; accept growth hormone-**releasing** hormone]

<Biology>

18. Prior to the signing of this agreement, Article 27 of the Mexican Constitution was amended to allow for the private ownership and sale of communal land, or ejidos. For 10 points each:

[10e] Name this 1994 international trade agreement that created thousands of new maquiladoras but effectively ended land redistribution efforts in Mexico.

ANSWER: **NAFTA** [or **North American Free Trade Agreement**; or **TLCAN** or **Tratado de Libre Comercio de América del Norte**]

[10m] This Indigenous-based group launched uprisings in Chiapas in response to NAFTA and the modification of Article 27. This group led by Subcomandante Marcos signed the San Andrés Accords with the government in 1996.

ANSWER: **Zapatistas** [or **Zapatista** Army of National Liberation; or Ejército **Zapatista** de Liberación Nacional; or **EZLN**; accept Neo-**Zapatistas**]

[10h] The Zapatistas evaded suppression in this jungle in Chiapas and Guatemala, where Marcos proclaimed several declarations in the 2000s. This jungle, which contains the ruins of Palenque (“pah-LEN-kay”), names a Mayan language preserved by the Casa Na Bolom research center.

ANSWER: **Lacandon** Jungle [or Selva **Lacandona**; accept **Lacandon** peoples or **Hach** Winik; accept **Lacandon** language or **Hach** T’ana]

<World History>

19. Unlike troubadours who performed in Old Occitan, these writers often adopted vulgar and satirical subject matter. For 10 points each:

[10h] Name these wandering 12th- and 13th-century clerical poets, whose poetry often challenged church doctrine. One of these poets, the so-called Archpoet, wrote a “Confession” often cited as a masterpiece in the genre.

ANSWER: **goliards** [accept **goliardic** poets]

[10e] The goliards mainly wrote in this language, the lingua franca of educated Western Europe in the Middle Ages.

ANSWER: **Latin** [or lingua **Latina** or **Latinum**; accept Medieval **Latin**, Late **Latin**, Ecclesiastical **Latin**, or Church **Latin**]

[10m] The Archpoet’s “Confession” is found in this collection of medieval poetry, which mostly consists of Latin goliardic poems. Another Latin poem in this collection begins by describing Fortune as “changeable, like the moon.”

ANSWER: **Carmina Burana** (The second poem is “O Fortuna.”)

<European Literature>

20. In the recent film *Barbarian*, a rental home conceals a tunnel used to abduct women in this city, which titles a Kathryn Bigelow drama about the Algiers Motel murders that Demetria Irwin called a “horror movie.” For 10 points each:

[10e] Name this city where Mike Gioulakis shot *It Follows*, in which teens try to trap a sexually transmitted monster in a pool after crossing this midwestern city’s traditional racial boundary, 8 Mile Road.

ANSWER: **Detroit** [or **Detroit**, Michigan]

[10h] A vampire played by Tilda Swinton predicts that people will return to Detroit for water in this director’s film *Only Lovers Left Alive*. William Blake’s poetry informed this director’s revisionist western *Dead Man*.

ANSWER: Jim **Jarmusch** [or James Robert **Jarmusch**]

[10m] Jarmusch directed a 2019 horror-comedy influenced by this film. Richard Matheson’s novel *I Am Legend* inspired this George A. Romero film, whose Black hero Ben is killed by racists after he defeats several ghouls.

ANSWER: **Night of the Living Dead** (Jarmusch’s film is *The Dead Don’t Die*.)

<Pop Culture>

21. A character with this profession describes a scene from Saadi's poetry in which King Darius gets lost during a hunt and fails to recognize his own servant. For 10 points each:

[10m] Give this profession of the characters Stork, Olive, and Butterfly, who are all suspected of murder. A chapter of a novel is narrated by a gold coin, who discusses the earnings of people in this profession.

ANSWER: **miniaturists** [accept **illustrators**; accept descriptions of drawing **images** for **books**; prompt on **artists** or **painters** by asking "what kind of art do they produce?"; reject "illuminators"]

[10e] Those miniaturists, along with the murdered miniaturist Elegant Effendi, are all characters in this author's novel *My Name Is Red*. This Turkish author also wrote *The Museum of Innocence* and *Snow*.

ANSWER: Orhan **Pamuk** [or Ferit Orhan **Pamuk**]

[10h] Another unexpected narrator in *My Name is Red* is this character, who opens his chapter by praising "the smell of red peppers frying in olive oil." Olive draws pictures of this character and two dervishes for Enishte's book.

ANSWER: **Satan** [or **Shaitan**; accept the **Devil** or **Iblis** or **Eblis**; reject "Lucifer"]

<World Literature>