



**ACADEMIC  
COMPETITION  
FEDERATION**

**2023 ACF NATIONALS**

**Prelims 7**

**Packet By**

**Cornell A and Vanderbilt A**

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## TOSSUPS

1. In 2020, text alerts about bringing these objects into cars were issued by the Nazer-1 program. Counterprotests to an incident involving these objects in Karnataka's Udupi District in 2021 used a similar saffron object. At the 2023 Grammys, Jill Biden presented a new award to a song written about actions involving these objects called "Baraye." The 2017 White Wednesday campaign inspired the Girl of Enghelab Street to stand on a telecom box and hold one of these objects on a stick. People who shouted the phrase "Jin, jiyān, azadi!" to protest these objects were blamed by state media for potentially framing a series of 2023 school poisonings. Dozens of people have been charged with *moharebeh* for attacking Basij forces amid protests over these objects that began due to a September 2022 death that occurred under custody of the "morality police." For 10 points, Mahsa Amini was arrested for improperly wearing what garment that is mandatory for women in Iran?

ANSWER: **hijab** [or **hijāb**; accept **headscarves** or **headscarf**; accept **veils**; accept **burkas**; accept **niqabs**; accept **chadors**; accept **face coverings** or **head coverings**; prompt on **coverings**]

<Current Events>

2. A novel about traveling through this location opens with the protagonist narrowly avoiding a sinkhole that swallows a man, a car, and a dog. Bellocosa meets the title animal at an illicit dinner party in a novel set in this place titled *Tears of the Trufflepig*. Makina journeys through this location to search for her brother in the novel *Signs Preceding the End of the World*. This location is described as "una herida abierta," or "an open wound," in the opening of a book that ends by discussing how this location causes people to take on a "new consciousness." A book titled for this location describes eight varieties of language spoken by people who have passed through this location in the section "How to Tame a Wild Tongue." For 10 points, a book by Gloria Anzaldúa subtitled "The New Mestiza" describes forms of culture originating from immigrants who have crossed what location?

ANSWER: **US–Mexico border** [or equivalents like the **border** between **America** and **Mexico**; accept **Texas–Mexico border** or equivalents; accept **Rio Grande** or **Río Bravo** del Norte; prompt on *Borderlands* or **border** or *Borderlands/La Frontera* by asking "which specific border?"; prompt on **Texas**, **TX**, **Mexico**, **Chihuahua**, **Coahuila**, **United States**, **USA**, or **America**] (Fernando A. Flores wrote *Tears of the Trufflepig*. Yuri Herrera wrote *Signs Preceding the End of the World*.)

<World Literature>

3. These structures are the most common location of Walthard nests. A serous ("SEER-us") carcinoma called STIC that arises in the stem-like peg cells of these structures may be the true origin of high-grade serous carcinomas of [emphasize] *another* organ. Interaction with these structures' epithelium capacitates the CatSper channels of certain rheotactic cells, allowing them to move up these structures' temperature gradient. The documentary *The Bleeding Edge* highlights the failures of the deprecated Essure procedure, which occluded these structures by inserting metal coils into them. A contrast leak during an HSG indicates these structures' patency. Occlusions of these structures, like those caused by a hydrosalpinx or endometriosis, account for 20 percent of female infertility cases. For 10 points, finger-like projections called fimbriae terminate what paired structures that carry eggs from the ovaries to the uterus?

ANSWER: **Fallopian tubes** [or **uterine tubes**; or **oviducts**; accept **salpinges** or **salpinx** until "hydrosalpinx" is read; prompt on **uterus**; prompt on **tubes**] (HSG stands for hysterosalpingography.)

<Biology>

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4. This character is admonished for using midnight blue instead of canary yellow in a *Wind of the Willows* coloring book. This character and Beth Gryglewicz (“grigg-LAY-vitch”) miss a football game to dress up as con men named Billy McKean and Bobby McCool, which she records in a diary filled with a shorthand symbol for the phrase “I think,” a symptom of her OCD. This character’s grandmother tells her a story about a mailman saving her father as a child from getting stuck in the mud. As a college student, this character returns home to Beech Creek, Pennsylvania, with Joan. This character’s father is obsessed with restoring a Gothic revival house and later kills himself with a Sunbeam bread truck, which this character believes was related to her coming out as a lesbian. For 10 points, name this narrator and author who reflects on her relationship with her closeted gay father in the graphic memoir *Fun Home*.  
ANSWER: Alison **Bechdel** [or **Alison** Bechdel]

<American Literature>

5. The Holy See sent Jerome Dandini and Giovanni Eliano as missionaries to this church, where they amended its liturgy to drop the phrase “Thou who wast crucified for us” from the Trisagion. James the Solitary was a hermit taught by the founder of this church, whose congregation remembers their dead before Lent during the Three Sundays of Commemoration. A chronicle named for this church was the first in history to mention the Islamic cry “God is great.” A saint from this church with an incorruptible corpse was named Charbel (“shar-bell”). The Patriarchate of this Antiochene (“an-TYE-uh-keen”) church based in Bkerké (“b’kerr-kay”) traces itself back to an eponymous 5th-century saint from the Taurus Mountains and, like the Melkite Church, uses the West Syriac Rite. Members of this church have clashed with the Druze while bearing banners of the Levantine cedar tree. For 10 points, what Christian church’s members primarily reside in Lebanon?

ANSWER: **Maronite** Church [or Antiochene Syriac **Maronite** Church; accept **Maronites** or **Maronite** Christians; accept **Maronite Chronicle**; prompt on **Eastern** Churches or **Eastern** Catholic Churches; prompt on **Syriac** until “West Syriac Rite” is read; reject “Syriac Orthodox”] (The church is named for Saint Maron or Mārūn.)

<Religion>

6. A ruler of this historical state supposedly once traded livestock in Constantinople, inspiring his epithet “the Shepherd.” A perceived slight led a ruler of this state to nail the turbans of a group of ambassadors to their heads. A ruler of this state carefully noted in his journal that his forces had killed 23,844 enemies, excluding those burned and beheaded. This state won independence after its founder ambushed the forces of Charles Robert at Posada. A ruler of this state built the mountaintop Poenari (“po-ay-NAR-ee”) Castle before it was besieged by his brother, who was called “the Fair” or “the Handsome.” A leader of this state, which was ruled by the Basarab dynasty, attempted to assassinate the invading sultan Mehmed II in the Night Attack at Târgoviște (“tir-GO-veesh-teh”). In the 19th century, this state joined with Moldavia to form the United Principalities. For 10 points, name this state that was ruled under Ottoman suzerainty by Vlad the Impaler.

ANSWER: **Wallachia** [or **Tara Românească**; accept **Muntenia** or **Oltenia**; accept Voivode of **Wallachia**; accept Moldavia-**Wallachia**; accept United Principalities of Moldavia and **Wallachia** or Principatele Unite ale Moldovei și **Tării Românești**; reject “Romania” or “Moldavia”] (The rulers are Mircea the Shepherd, Vlad the Impaler, Basarab I, and Radu the Handsome.)

<European History>

7. The so-called “six-step” algorithm for this operation uses transpositions at steps one and four to improve locality of reference. An out-of-place algorithm for computing this operation on vector processors does not require bit reversal, but the vectors change in length during the computation. Shmuel Winograd used the Chinese remainder theorem for polynomials to develop an algorithm for this operation that limited the number of floating-point multiplications. Plans to monitor Soviet nuclear tests motivated the development of the common radix-2 algorithm for this operation that combines subcomputations using precomputed roots of unity called twiddle factors. A “big O of  $n \log n$ ” algorithm for this operation was designed by James Cooley and John Tukey (“TOO-kee”). For 10 points, digital signal analysis heavily relies on what operation that converts a sequence of time data to a sequence of frequency data?

ANSWER: **fast Fourier transform** [or **FFT** or **IFFT** or inverse **fast Fourier transform**; accept **DFT**, **discrete Fourier transform**, **IDFT**, or inverse **discrete Fourier transform**; prompt on **Fourier transform** or **Fourier decomposition**; reject “transform”] (The second sentence refers to the Stockham FFT, which is called self- or auto-sorting.)

<Other Science>

8. The fall of this city displaced a husband-and-wife team of poets who pioneered epigraphy in their *Catalog of Bronze and Stone Inscriptions*. The penultimate ruler based in this city, who was awarded the mocking title “Duke of Muddled Virtue,” pretended that a stroke had paralyzed his right arm to force his son, the “Doubly Muddled Marquis,” onto the throne. After this city was captured in violation of the “Alliance Conducted at Sea,” retreating forces coalesced under the tattooed general Yuè Fēi (“y’weh fay”). The scroll painting *Along the River During the Qīngmíng Festival* likely depicts the splendor of this capital city before its final two emperors, Qīnzōng (“cheen-dzong”) and Huīzōng (“hway-dzong”), were captured in the Jingkāng Incident. This city was sacked by the Jurchen Jīn dynasty in 1127. For 10 points, name this capital of the Northern Sòng dynasty, where Persian merchants established a small community of Jews.

ANSWER: **Kāifēng** [or **Biànjīng**] (The husband-and-wife team of poets were Zhào Míngchéng and Lǐ Qīngzhào.)

<World History>

9. In a 1975 book, a feminist scholar in this field critiqued the biological determinism of Otto Pollak’s theories that emphasized the role of menstruation; that scholar in this field is Freda Adler. The “subcultural theory” in this field was introduced by Albert K. Cohen. A company named after this field released the software Rigel and was founded by Kim Rossmo, the creator of Rossmo’s formula. Critiques of this field inspired the field of zemiology. This field’s positivist school, which emphasized external factors in contrast to the classical school’s emphasis on free will, was founded by Italian scholars such as Cesare Lombroso (“CHAY-zah-ray lom-BROH-zoh”). This field’s classical school was pioneered by the early penologist Cesare Beccaria (“CHAY-zah-ray bake-ah-REE-ah”). For 10 points, strain theory and the broken windows theory are approaches in what field that studies deviant and illegal behavior?

ANSWER: **criminology** [or word forms like **criminologists**; or **crime** studies; prompt on **sociology**]

<Social Science>

10. The design of an art museum in this country, which once displayed paintings that looked like they were floating on glass easels, has two bright red parallel beams that support a suspended glass box. The reuse projects of an architect in this country involved turning a drum factory into the SESC Pompéia and an office into a theater. An architect from this country completed an art gallery shaped like an eye and a national museum shaped like a white concrete dome while in his 90s. The Italian-born architect Lina Bo Bardi did most of her work in this country, the home of landscape architect Roberto Burle Marx. An architect from this country built a UFO-shaped contemporary art museum in Niterói and a hyperboloid-shaped cathedral located along the Monumental Axis. For 10 points, name this country whose planned capital was designed by Lúcio Costa and Oscar Niemeyer.

ANSWER: **Brazil** [or **Brasil**; or Federative Republic of **Brazil** or República Federativa do **Brasil**]

<Other Fine Arts>

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11. Propaganda of this man next to Potez 540 bombers during the Spanish Civil War backfired due to the plane's nickname of "Flying Coffin." In Operation Northwind, this man led a brigade that defended Strasbourg and was named for Alsace-Lorraine. He wasn't a head of state, but a four-year-old girl was blinded by a failed 1962 bombing targeting this man by the OAS. Inspired by T. E. Lawrence's excavation of Carchemish ("CAR-keh-mish"), this man was jailed for removing a bas-relief from the Banteay Srei ("bon-tay s'rye") temple while on vacation in Indochina with his wife Clara. This man's namesake law prevented the demolition of original Parisian buildings and was passed while he was the first Minister of Cultural Affairs under Charles de Gaulle. *The Conquerors* and *The Royal Way* form part of a trilogy by this man, along with a novel in which Ch'en Ta Erh dies during an attempted assassination of Chiang Kai-Shek. For 10 points, name this French author who described communist intrigue in Shanghai in *Man's Fate*.

ANSWER: André **Malraux** [or Georges André **Malraux**; accept **Malraux** Law; accept **Malraux** Brigade or Brigade **Malraux**]

<Other Academic>

12. This artist depicted a backward-facing woman atop a tapir ("taper") in *Godiva in the Jungle* as part of a late-career pivot to sculpture encouraged by Isaac Masri. This artist reaches to grip a phallic cluster of flowers near a tiny skeleton in a portrait set "in the Morning Light." A portrait by this artist shows a frozen horse in the background behind a romantic partner in a red woolen coat with a mermaid's tail and a striped sock. A sculpture and a painting by this artist inspired by Lewis Carroll depict a group of crocodiles rowing a boat. A mural by this artist designed for the National Museum of Anthropology is titled *The Magical World of the Maya*. This painter of *Portrait of Max Ernst* depicted a galloping white horse through a window in a self-portrait of her sitting in a blue chair near a hyena. For 10 points, name this British-born surrealist who did most of her work in Mexico.

ANSWER: Leonora **Carrington** [or Mary Leonora **Carrington**] (The artworks are *How Doth the Little Crocodile* and *Self-Portrait (The Inn of the Dawn-Horse)*. Max Ernst painted *Leonora in the Morning Light*.)

<Painting & Sculpture>

13. One of these functional groups acts as a pendant ligand in the secondary coordination sphere in the hangman effect. Six ligands containing this functional group bridge three palladium(II) ("two") atoms in a triangle in an activated catalyst for the Heck reaction. This group coordinates the metals in the "paddlewheel" secondary binding units of HKUST-1 ("H-kust-one"). Metalloenzyme ligands containing this functional group in an amino acid side chain can switch from monodentate to bidentate. These functional groups lie at each end in the most common MOF ("moff") linkers. The electrostatic repulsion between caps containing these functional groups stabilizes colloidal gold. Two amines and four of these functional groups chelate ("KEE-late") a metal in EDTA. This functional group has a pKa of 5 and is found in the side chain of the amino acids symbolized D and E. For 10 points, name this negatively charged functional group found in citrate and acetate.

ANSWER: **carboxylate** [or **carboxylic acid**; or **carboxyl** group; or **CO<sub>2</sub><sup>-</sup>**; or **COO<sup>-</sup>**; or **COOH**; accept **dicarboxylic acids** or **dicarboxylates**; prompt on **acids**; prompt on **acetates**; reject "carbonyl" or "hydroxyl" or "alcohol"] (The second sentence refers to palladium acetate.)

<Chemistry>

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14. In this US state, Ramon Sender and Morton Subotnick founded a music center where the Buchla (“BOO-kluh”) analog modular synthesizer was developed. In 2020, a conservatory in this state purchased the classical management agency Opus 3 Artists. While working at that conservatory in this state, a composer depicted his dreams of an oil tanker taking off from a body of water and two limousines transforming into pianos in his two pieces *Harmonielehre* (“harmony-LAIR-uh”) and *Grand Pianola Music*. An orchestra in this state revitalized its Green Umbrella contemporary music series under executive Deborah Borda and composer-conductor Esa-Pekka Salonen. That orchestra from this state commissioned 50 composers to write works for its 2018 centennial season, which was led by music director Gustavo Dudamel. For 10 points, name this state whose largest orchestra plays at Walt Disney Concert Hall.

ANSWER: **California** [or **CA**] (The Los Angeles Philharmonic plays at the Walt Disney Concert Hall. The third sentence refers to John Adams and the San Francisco Symphony.)

<Classical Music>

*Note to moderator: Read the answerline carefully.*

15. The output of these devices is modified by manually adjusting the jaws, and then fine-tuning the leaves of the multileaf collimator in a process called field shaping. Images from a CT scan are used to position and configure these devices in a high-precision technique called IMRT. The output of these devices is measured in monitor units. Four people were killed by a software race condition that caused a plate to be incorrectly moved out of the path of one of these devices called the Therac-25. The Klystron Gallery sits atop a large-scale one of these devices that consists of a series of RF cavities surrounding a vacuum pipe. Along with a facility at Brookhaven, one of these devices was used to discover the J/psi meson (“MEE-zon”). For 10 points, radiotherapy produces X-rays with what devices that use alternating electric fields along a straight path to speed up beams of particles?

ANSWER: **linear accelerators** [or **linacs**; accept Varian **Clinac**; accept Stanford **Linear Accelerator** Center; prompt on particle **accelerators** or medical **accelerators**; prompt on **SLAC** (“slack”) National Accelerator Laboratory; prompt on descriptions of devices used in **radiotherapy** or **radiation therapy** until “radiotherapy” is read; prompt on **X-ray generators** or descriptions of devices that **generate X-rays** until “X-rays” is read; prompt on X-ray **beams** or radiation **beams** until “beams” is read by asking “what devices are used to generate the beams?”; reject “generators”] (IMRT is Intensity-Modulated Radiation Therapy.)

<Physics>

16. A book by this philosopher imagines a fictional career for a female student of Epicurus named Nikidion as a way of comparing the therapeutic arguments of different schools of philosophy. Another book by this philosopher ends by comparing the way that Hecuba’s burial place serves as a guide for sailors to the way that tragedy serves as a guide to ethical deliberation. That book by this philosopher, which argues that Diotima’s theories entail a loss of beauty while Alcibiades’s theories entail a loss of rational planning, is about the primacy of contingency and luck in ethics. This philosopher wrote about the role that disgust plays in the law in her book *From Disgust to Humanity*. This philosopher collaborated with Amartya Sen to develop the “capability approach” to human welfare. For 10 points, name this University of Chicago philosopher who wrote *The Fragility of Goodness*.

ANSWER: Martha **Nussbaum** [or Martha Craven **Nussbaum**; or Martha **Craven**]

<Philosophy>

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17. A magazine based in this city published a series of 71 fictional dialogues set in a tavern, which features characters like the Ettrick Shepherd and is called *Noctes Ambrosianae* (“NOCK-tays am-broh-zee-AH-nay”). A picture of the historian George Buchanan appeared on the title page of that magazine from this city, which derided Leigh Hunt as a member of the “Cockney School.” Members of this city’s “Speculative Society,” including Francis Jeffrey, founded a magazine whose blue and buff cover hinted at its political leanings. *Blackwood’s Magazine* was based in this city, as was a Whig-supporting magazine that frequently attacked the Lake Poets and that was a rival of the Tory-supporting *Quarterly Review*. For 10 points, one of the preeminent early 19th-century outlets for political and literary criticism in Britain was what city’s namesake “review”?

ANSWER: **Edinburgh** [or **Dùn Èideann**; accept **Edinburgh Review**; accept *Blackwood’s Edinburgh Magazine* or **Edinburgh Monthly Magazine**]

<British Literature>

18. In the 1890s, Wilbur H. Siebert sent out questionnaires that proved invaluable for an early history of this institution that eventually credited over 3,000 people, mostly men, as being part of it. A Cincinnati museum named for this institution opened in 2004 and is designed around a small, log-cabin-like structure recovered from Mason County, Kentucky. Records kept by Sydney Howard Gay were publicized in a 2015 book on the “hidden history” of this institution by Eric Foner. William Still wrote a history of this institution that drew on his time at the Philadelphia Vigilance Committee. Levi Coffin was sometimes called the “president” of this institution and was one of the numerous Quakers involved in it. This institution’s so-called “reverse” version facilitated the kidnapping of Solomon Northrup. For 10 points, name this informal, clandestine network that helped escaped slaves reach freedom.

ANSWER: **Underground Railroad** [or **Underground Railway**; accept Reverse **Underground Railroad**; accept *Gateway to Freedom: The Hidden History of the Underground Railroad*; accept *The Underground Railroad Records*; accept National **Underground Railroad** Freedom Center; accept *The Underground Railroad from Slavery to Freedom*]

<American History>

19. In a novel from this country, a priest is blackmailed into making payments to Harelip and her blind and deaf mother. The video game *Mother 3* borrows the names of Claus and Lucas from conniving twins in a trilogy of novels by an author who was born in this country that begins with *The Notebook*. The protagonist of a novel from this country is taken to a lice-ridden hospital after getting an infected knee; after returning home, he claims that if the title concept exists, then “there is no freedom.” In another novel from this country, the life of the young Jewish girl Eva is saved by her housekeeper Emerence. The narrator tells Dr. Oblath why he refuses to have children in a novel from this home country of the author of *The Door*. Another author from this country drew on his experience in a concentration camp to write *Kaddish for an Unborn Child* and *Fatelessness*. For 10 points, name this home country of Magda Szabó (“MOG-dah SAH-bo”) and Imre Kertész (“EEM-reh KARE-tace”).

ANSWER: **Hungary** [or **Magyarország**; accept **Hungarian** People’s Republic or **Magyar** Népköztársaság; accept Kingdom of **Hungary** or **Magyar** Királyság; prompt on **Austria-Hungary**, **Austro-Hungarian** Empire, **Österreichisch-Ungarische** Monarchie, or **Osztrák–Magyar** Monarchia] (Ágota Kristóf wrote the trilogy in the second sentence.)

<European Literature>

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20. Fictitious “laws” of a people in this region are related in a work by Gregentius, who supposedly served one of its cities as archbishop. In this region, the Austrian archaeologist Eduard Glaser (“GLAH-zer”) collected thousands of inscriptions. Control of trade in this region was contested by the Minaean Kingdom and the Qatabān (“ka-ta-BAHN”) Kingdom. The foreign guide Syllaeus was blamed for a disastrous Augustan-era expedition to this region commanded by Aelius Gallus. According to legend, an invasion by a self-declared ruler of this region failed when seabirds each dropped three stones on his soldiers’ heads. The Jewish king Dhu Nuwas (“doo noo-WOSS”) ruled the Himyarite Kingdom in this region, whose city of Mar’ib was the capital of the Sabaeans. Part of this region had a reputation for fertility for bearing plants like myrrh, leading the Romans to call it “Felix (“FAY-leeks”).” For 10 points, name this peninsula whose pagan tribes became the core supporters of Muhammad’s Islamic movement.

ANSWER: **Arabia** [accept **Arabia** Felix; accept **Arabian** Peninsula or Shibhu l-jazīrati l-‘**arabiyyah**; accept South **Arabia**; accept **Yemen**; accept **Himyarite** Kingdom until read; prompt on **Aksumite** Kingdom or **Aksumite** Empire by asking “what region that was, at one time, controlled in part by Aksum?”; prompt on **Western Asia** or **Middle East** or **MENA**; reject “Ethiopia” or “Horn of Africa”] (The self-declared ruler was Abraha, during his invasion of Mecca in the Year of the Elephant.)

<Other History>



## BONUSES

1. In Bulgarian mythology, a clumsy race of these beings called Ispolini faced existential risk from tripping over blackberry brambles and dying. For 10 points each:

[10e] Name this general type of mythological being, one of whom falls to his death after having his sack of gold and golden goose stolen in an English fairytale.

ANSWER: **giants**

[10m] In Greek myth, these two giant sons of Poseidon clumsily killed each other when they both threw spears at Artemis, who had darted between them. You may name both or give their collective name.

ANSWER: **Aloadae** (“al-oh-AY-dee”) [or **Alaods**; accept **Otus** AND **Ephialtes**; accept answers in either order; accept **Otos** or **Otis** in place of “Otus”]

[10h] In the folklore of these people, clumsy giants called Stállo were easily tricked by humans. The artwork of these people often depicts the three daughters of their sky-dwelling childbirth goddess Madderakka.

ANSWER: **Sámi** (“SAH-mee”) [or **Saami**, **Sámit**, **Sämmiliih**, or **Sä’mmla**; accept **Sápmi**; accept **Lapps** or **Laplanders** (note that many Sámi consider those terms offensive); prompt on **Finns** or **Finnish people**]

<Mythology>

2. This author was Keeper of the Robes to Queen Charlotte of Mecklenburg-Strelitz. For 10 points each:

[10m] Name this author of *The Wanderer* and the sentimental novel *Evelina*.

ANSWER: Fanny **Burney** [or Frances **Burney**; or Madame **d’Arblay**]

[10h] This other British author with the first name “Fanny,” who wrote the plays *Francis the First* and *The Star of Seville*, was better known as an actress. Her time in the US inspired her abolitionist *Journal of a Residence on a Georgian Plantation in 1838–1839*.

ANSWER: Fanny **Kemble** [or Frances Anne **Kemble**]

[10e] An author named Fanny with this surname wrote the travel book *Domestic Manners of the Americans*; her son with this surname wrote the *Chronicles of Barsetshire*.

ANSWER: **Trollope** [accept Anthony **Trollope**; accept Fanny **Trollope** or Frances Milton **Trollope**]

<British Literature>

3. In this work, it is argued that since nothing becomes or changes without cause, the universe must have been created by a demiurge. For 10 points each:

[10m] Name this work that envisions the universe as a receptacle filled with four elements, with each element corresponding to a geometric body.

ANSWER: **Timaeus** [or **Timaios**]

[10e] The *Timaeus* is a dialogue by this philosopher.

ANSWER: **Plato** [or **Platon**]

[10h] In a cryptic passage, Timaeus describes how the demiurge created this thing by combining Existence, Sameness, and Difference, all of which are intermediate between divisible and indivisible forms.

ANSWER: **world-soul** [or **anima mundi**; or **psychè kósmou**; prompt on **soul** or **anima** or **psychè**; reject “world”]

<Philosophy>

4. Charlie Chaplin got his start performing a dance named for these objects as part of the Eight Lancashire Lads. For 10 points each:

[10e] Name these wooden shoes of Dutch origin that are used in many Appalachian and Irish folk dances.

ANSWER: **clogs** [accept **clog** dancing]

[10m] Performers of the North West Clog style of this English folk dance wear iron-covered soles. This dance, whose performers may clap handkerchiefs or swords together, has been controversial due to its use of blackface.

ANSWER: **Morris** dance [accept Border **Morris**; accept North West **Morris**]

[10h] This improvisational dance is an ancestor of Appalachian clogging. This dance, whose name comes from the Irish for “old style,” also names a style of unaccompanied, unmetred singing originating from Connemara.

ANSWER: **sean-nós** (“shahn nohss”)

<Other Fine Arts>

5. The overwhelming success of this fighting force led Pavel Kutakhov to question how so many SAM (“sam”) batteries were destroyed in under an hour. For 10 points each:

[10h] Name this fighting force that launched Operation Mole Cricket 19 in 1982. During the same decade, this fighting force outfitted many of its French-designed Dassault (“dah-SO”) Mirage IIIs (“threes”) with Rafael Python missiles.

ANSWER: **Israeli Air Force** [or **Kheil HaAvir**; or **Zroa HaAvir VeHahalal**; or **IAF**; prompt on **Air Force** by asking “of which country?”; prompt on **Israeli military**, **Israel Defense Forces**, **IDF**, **Tzahal**, or **Tsva ha-Hagana le-Yisra’el** by asking “which branch?”]

[10e] The surprise attack on the Beqaa (“buh-KAH”) Valley was reminiscent of the Israeli Air Force’s preemptive strike to effectively neutralize the Egyptian Air Force during this brief 1967 conflict.

ANSWER: **Six-Day War** [accept **June War**; accept **Third Arab-Israeli War**; accept an-**Naksah** or The **Setback**; accept Milhemet **Sheshet HaYamim**]

[10m] As part of Operation Opera, the Israeli Air Force bombed this site in 1981 to set back the Iraqi nuclear program.

ANSWER: **Osirak** reactor [accept **Tuwaitha** Nuclear Research Center]

<World History>

6. A two-page note on this genre in Ruth Finnegan’s book *Oral Literature in Africa* dubiously claims that this genre “hardly occur[s] in sub-Saharan Africa.” For 10 points each:

[10e] Name this type of long narrative poem, which in Africa is exemplified by ones about Lianja and Sundiata.

ANSWER: **epic** poetry [accept **Epic of Sundiata**; accept **Lianja Epic**; reject “national epics”]

[10m] Isidore Okpewho’s (“oak-PAY-woh’s”) rebuttal to Finnegan analyzes the story of Kambili as an epic through the lens of this theory. This hypothesis, named for two scholars, theorizes that oral poets used formulas and repetition to memorize long poems.

ANSWER: **Parry–Lord** hypothesis [prompt on **oral-traditional** theory or **oral tradition**; prompt on **oral-formulaic** composition]

[10h] Another rebuttal to Finnegan is an epic about the Arab–Byzantine wars written in this form. This form of Swahili heroic narrative poetry consists of four-line eight-syllable stanzas whose fourth line retains a rhyme constant through the poem.

ANSWER: **utenzi** [or **utendi**; accept **Utenzi wa Tambuka** or **Utendi wa Tambuka**; accept **Utenzi wa Hirqal** or **Utendi wa Hirqal**]

<World Literature>

7. This mode of movement occurs when bundles of flagella moving counterclockwise become unbundled as some of the flagella switch rotational direction. For 10 points each:

[10m] Name this mode of movement exhibited by peritrichous (“pair-ih-TRICK-us”) bacteria like *Listeria monocytogenes* and *E. coli*. During chemotaxis, bacteria suppress this kind of motility in favor of directed runs along concentration gradients.

ANSWER: **tumbling** [or **tumbling** motility; or word forms of **tumble**; accept run-and-**tumble** motion; accept **twiddling** motion or word forms of **twiddle**]

[10h] The concentration of this protein’s phosphorylated form controls the direction of flagellar motion. The histidine kinase CheA (“kee-A”) phosphorylates this protein, which binds FliM to stabilize counterclockwise motion and induce tumbling.

ANSWER: **CheY** (“kee-Y”) [accept **CheY-P**]

[10e] Run-and-tumble motion can be modeled as a three-dimensional one of these phenomena biased by the direction of flagellar motion. Diffusion without a chemical gradient is also modeled as this kind of process.

ANSWER: **random walk** [prompt on **random** processes or **stochastic** processes; prompt on **walks**; prompt on **Brownian motion** or **Wiener** processes]

<Biology>

8. This artist showed the title ballerina in front of a literalization of her most famous role in *Alicia Markova “The Dying Swan.”* For 10 points each:

[10h] Name this Russian-born painter nicknamed “the king of kitsch” for his colorful portraits. Mass sales of prints of his portrait *Chinese Girl* made it one of the most reproduced artworks of the 20th century.

ANSWER: Vladimir **Tretchikoff** [or Vladimir Grigoryevich **Tretchikoff**]

[10m] Tretchikoff lived most of the later part of his life in this country, which was the birthplace of portraitists Irma Stern and Marlene Dumas. In this country, William Kentridge perfected his black-and-white palimpsest print and animation style.

ANSWER: **South Africa** [or Republic of **South Africa** or **RSA**; or **Ningizimu Afrika**, **Mzantsi Afrika**, **Suid-Afrika**, **Afrika Borwa**, **Afrika Dzonga**, **Afurika Tshipembe**, or **Sewula Afrika**]

[10e] This phenomenon titles Tretchikoff’s portrait of the singer Françoise Hardy. A streetlamp bisects a Gustave Caillebotte (“kye-BUTT”) painting titled for a Paris street and this occurrence.

ANSWER: **rain** [accept **rainy** day; accept **rainstorm**; accept *Paris Street*; **Rainy Day** or *Rue de Paris, temps de pluie*; prompt on **weather** or similar answers]

<Painting & Sculpture>

9. This process causes excess carrier concentration to decay to zero at a rate given by the excess carrier concentration over carrier lifetime. For 10 points each:

[10m] Name this process in which an electron from the conduction band falls down to the valence band.

ANSWER: **recombination** [prompt on electron–hole **annihilation** or word forms of **annihilate**; reject “electron–positron annihilation”]

[10e] When current flows in the correct direction in these common semiconductor devices, electrons and holes undergo direct recombination and release a photon.

ANSWER: **LEDs** [or **light-emitting diodes**; prompt on **diodes**]

[10h] Theoretical analysis by William Shockley, William Read, and Robert Hall explained how recombination accompanied by phonons is mediated by these defects. Trace metals like gold form these defects that are distinct from donors or acceptors since their energy level lies in the middle of the band gap.

ANSWER: deep **traps** [or deep-level **traps**; accept charge carrier **traps**; prompt on recombination **centers**; reject “shallow traps”]

<Physics>

10. Python and Heraclides (“hair-uh-KLY-deez”), two students of Plato, assassinated the ruler of a kingdom in this region. For 10 points each:

[10m] Name this region where Cotys I ruled the Odrysians. In this region, Athens replaced the failed settlement of Ennea Hodoi (“en-NAY-uh ho-DOY”) with a colony at Amphipolis (“am-FIP-uh-liss”) in a bid to more easily access the mines at Mount Pangaeus.

ANSWER: **Thrace** [or **Thracia**, **Thráki**, **Trakiya**, **Thráki**, or **Trakya**; accept **Thracian** Kingdom; prompt on **Bulgaria**, **Bálgariya**, European **Turkey**, or **Türkiye**; reject “Anatolia”]

[10h] Cotys I married a daughter to this 4th-century-BCE Athenian general, who popularized peltasts by introducing lighter equipment. This man’s hit-and-run javelin tactic crushed a Spartan hoplite force at Lechaeum.

ANSWER: **Iphicrates** (“if-ih-CRAY-teez”)

[10e] This ruler was perhaps inspired by Iphicrates’s reforms to create the *sarissa*-armed Macedonian phalanx. This ruler defeated the forces of Athens and Thebes at Chaeronea (“kye-ro-NAY-uh”).

ANSWER: **Philip II** of Macedon [or **Philip II** of Macedonia; accept **Philippos** in place of “Philip”; prompt on **Philip** of Macedon or **Philip** of Macedonia]

<Other History>

11. The significance of a region in this country was discovered in 1972 at the Pierrelatte (“p’yair-LAHT”) facility when French authorities were concerned that material had been stolen for nuclear weapons. For 10 points each:

[10m] Name this country whose Oklo reactor is the only known naturally occurring site of nuclear fission on Earth.

ANSWER: **Gabon** [or **Ngabu**; or **Gabonese** Republic or République **gabonaise**]

[10h] The Oklo reactor formed in this sedimentary basin named for a large city in eastern Gabon. Paleoproterozoic fossils found in this basin in 2008 are the oldest discovered multicellular organisms on Earth.

ANSWER: **Franceville** Basin [or **Francevillian** Basin; accept **Franceville** Biota or **Francevillian** Biota; accept **Francevillian** B Formation]

[10e] Less radioactive locations in Gabon include its Loango National Park, where these animals surf in the Atlantic. These semiaquatic relatives of cetaceans produce pink sweat and are the deadliest large land mammal.

ANSWER: **hippopotamus** [or **hippo**; or *Hippopotamus* **amphibius**; prompt on **artiodactyls**]

<Geography>

*Note to moderator: Read the answerline of the first part of this bonus carefully.*

12. This piece of information is calculated from Kirkbride’s correlation after applying the FUG (“F-U-G”) method. For 10 points each:

[10h] Name this design criterion. A graphical method calculates this information by determining where the q line intersects the rectifying and stripping operating lines.

ANSWER: optimal location of the **feed** to a distillation column [or **feed** stage; or height of the **feed**; accept descriptions of the location or height of the **feed** or **input** or **entry** stream to a distillation column; prompt on number of **stages** in the **stripping** section; prompt on number of **stages** in the **rectifying** section; reject “stages” or “number of stages”]

[10e] The [emphasize] *total* number of required stages is computed in the first step of the FUG method using the ratio in this property between the light and heavy keys. Vapor pressure quantifies this readiness of a liquid to vaporize.

ANSWER: **volatility** [or **volatile**; accept relative **volatility**]

[10m] The FUG and McCabe–Thiele (“thee-lee”) methods are derived by assuming that every component in the distillation obeys vapor–liquid equilibrium and this principle at every stage. The lever rule is derived from this fundamental principle of chemical engineering.

ANSWER: law of **conservation** of **mass** [or **mass balance** or **mass conservation**; or descriptions of **mass** being **conserved**; or **conservation of moles** or **mole conservation**; or **material balance** equation]

<Chemistry>

13. A group of elderly women from this ethnic group known as the *babushki matsik* (“matsg”) preserved their tantric texts and practices during Soviet-era exile to Siberia. For 10 points each:

[10m] Name this modern ethnic group descended from the Oirats. These people are the only European ethnic group to primarily practice Buddhism.

ANSWER: **Kalmyks** [or **Kalmyki**; accept **Xal'mgud** or **Halimaguud**]

[10e] Kalmyks practice a branch of Buddhism named for this Asian region. Tenzin Gyatso leads a branch of Buddhism named for this region.

ANSWER: **Tibet** [or **Böd**; or **Xizàng**; accept **Tibetan** Buddhism; prompt on **Himalayas**] (Tenzin Gyatso is the fourteenth Dalai Lama.)

[10h] The spiritual leader of the Kalmyk Buddhists, Erdne Ombadykow (“um-buh-DICK-off”), is considered a reincarnation of Tilopa, who summarized Buddhism with a set of this many “words of advice.” The Prajñāpāramitā sutras characterize bodhisattvas with a set of this many “perfections.”

ANSWER: **six** [or **6**; accept **six** perfections or **six** pāramitās; accept **six** words of advice or **six** precepts]

<Religion>

14. Answer the following about Adolf Hitler and birthdays, for 10 points each.

[10e] This Nazi Minister of Propaganda held lavish festivities in Berlin in honor of Hitler’s fiftieth birthday. This man gave the “Total War” speech in 1943.

ANSWER: Joseph **Goebbels** [or Paul Joseph **Goebbels**]

[10m] In 1942, this leader sparked the “Telegram Crisis” by only replying “giving my best, thanks” to Hitler’s effusive birthday message. This leader often rode his horse unaccompanied through his country’s occupied capital.

ANSWER: **Christian X** of Denmark [or **Christian X**, King of Denmark; or **Christian Carl Frederik Albert Alexander Vilhelm**; prompt on **Christian** of Denmark or **Christian**, King of Denmark]

[10h] In 1945, Hitler celebrated his birthday by emerging from his Führerbunker for the last time. A day before, Georgy Zhukov’s (“ghee-OR-ghee ZHOO-kov’s”) troops overran the Oder–Neisse (“OH-dur NICE-uh”) line by taking this town’s “Heights,” which offered Berlin’s last natural defense.

ANSWER: **Seelow** (“ZAY-low”) [accept **Seelow** Heights or **Seelower** Höhen; accept Battle of the **Seelow** Heights or Schlacht um die **Seelower** Höhen]

<European History>

15. This dialect has very few native speakers, but is the official language across much of the Middle East and North Africa and is used widely in literature and media. For 10 points each:

[10m] Name this dialect based on Classical Arabic.

ANSWER: **Modern Standard** Arabic [or **MSA**; or **Modern Written** Arabic; or **MWA**; accept al-**Fushā** or al-‘Arabīyah al-**Fushā** or **Fushā** al-‘Aṣr; prompt on **Standard** Arabic; prompt on **Written** Arabic]

[10e] Many speakers of Arabic engage in this practice of alternating between language varieties in a single conversation, using Modern Standard Arabic and a vernacular dialect.

ANSWER: **code-switching** [or **code-mixing**]

[10h] Modern Standard Arabic exists in diglossia with Maghrebi Arabic, which is known by this Arabic name meaning “everyday language.”

ANSWER: **Dārīja** [or **Darja** or **Derija** or **Derja**; or ed-**Dārīja**]

<Social Science>

ACF Nationals 2023 | Prelims 7. Cornell A and Vanderbilt A

Editors: Harvey, Apte, Evans, Golden, Karim, Kearney, Mao, Nediger, Peet, Settle, Silverman

16. As part of a courtroom defense for a brother who steals a cop car, Older Brother claims that this place was always “a construction, a performance of features.” For 10 points each:

[10h] Name this location that titles a 2020 novel in screenplay format about the actor Willis, who plays background characters in the police procedural *Black and White*.

ANSWER: **Chinatown** [accept Los Angeles **Chinatown** or LA **Chinatown**; accept *Interior Chinatown*; reject “Los Angeles” or “LA”]

[10m] Charlie aspires to become a dancer in a Jean Kwok novel titled for this genre “in Chinatown.” The brothers Cesar and Nestor immigrate to New York in an Oscar Hijuelos (“ee-HWELL-ohs”) novel titled for musicians of this genre.

ANSWER: **mambo** [accept *The Mambo Kings Play Songs of Love*; accept **Mambo** in *Chinatown*]

[10e] *The Woman Warrior*’s controversial claim to this genre is the subject of an essay titled for this genre “as Guided Chinatown Tour.” This genre includes Maya Angelou’s *I Know Why the Caged Bird Sings*.

ANSWER: **autobiography** [or **memoir**; accept *The Woman Warrior: Memoirs of a Girlhood Among Ghosts*; accept “**Autobiography** as Guided Chinatown Tour”]

<American Literature>

17. St. John’s College purchased this politician’s “folly” of an unfinished basement, which was abandoned after the Maryland state legislature refused to continue funding the construction of a lavish governor’s mansion. For 10 points each:

[10m] Identify either this 18th-century governor of Maryland or his namesake town just outside DC where disorganized “races” in 1814 allowed the British to burn Washington.

ANSWER: Thomas **Bladen** [accept **Bladensburg**, Maryland; accept Battle of **Bladensburg** or **Bladensburg** Races]

[10e] In negotiating a 1744 treaty, Bladen helped the British swindle land away from the six nations of this confederacy.

ANSWER: **Iroquois** Confederacy [or **Iroquois** League; or **Haudenosaunee**]

[10h] The 1744 treaty was signed in this city, which served as the nation’s capital for one day in 1777 before the Continental Congress continued on to York. This city was the first major stop after Philadelphia on the Great Wagon Road.

ANSWER: **Lancaster**, Pennsylvania [accept Treaty of **Lancaster**]

<American History>

18. Works from this musical period are compiled in the Squarcialupi (“suar-chah-LOO-pee”) Codex and the *Roman de Fauvel* (“ro-MAWN duh fo-VELL”). For 10 points each:

[10m] Name this style whose name was coined in a treatise that elaborated on mensural notation and the rhythmic modes. Francesco Landini was the most famous Italian composer of this style.

ANSWER: **ars nova** [accept Italian **ars nova**; accept **Trecento**; prompt on **new art**]

[10h] This composer and author of the 1320 treatise *Ars nova notandi* composed the polytextual motet “Vos quid admiramini / Gratissima virginis.” Unlike his contemporary Guillaume de Machaut (“gee-YOME duh mah-SHOW”), this composer’s only extant works are motets.

ANSWER: Philippe de **Vitry**

[10e] Machaut wrote the first attributable polyphonic setting of this text, which contains the Kyrie (“KEE-ree-ay”), Gloria, Credo, Sanctus, and Agnus Dei.

ANSWER: **Mass** [or **missa** or **messia**; accept **Mass** Ordinary or Ordinary of the **Mass**; prompt on **lectionary**]

<Classical Music>

19. In a book by an author with this first name, Sophia adopts a cat named Moppy while living on an island with her grandmother. For 10 points each:

[10h] Give this first name of the author of *The Summer Book*. Another author with this first name published a trilogy of memoirs titled in English as *Childhood*, *Youth*, and *Dependency*.

ANSWER: **Tove** (“TOH-vuh”) [accept **Tove** Jansson or **Tove** Marika Jansson; accept **Tove** Ditlevsen or **Tove** Irma Margit Ditlevsen]

[10m] In a Tove Ditlevsen story titled for these objects, Helene suspects that her son has been seduced by her housekeeper. An angel curses Karen after she brings these objects to church in a story from another Danish author.

ANSWER: **shoes** [accept “The **Red Shoes**” or “De røde **sko**”; accept “The Little **Shoes**” or “De små **sko**”] (The other author is Hans Christian Andersen.)

[10e] *Childhood* recounts how a young Tove was gifted a collection of tales by these German authors, including the stories “Iron Hans,” “Rapunzel,” and “Hansel and Gretel.”

ANSWER: Brothers **Grimm** [or **Grimm** Brothers; or die Brüder **Grimm**; or die Gebrüder **Grimm**; accept Jacob and Wilhelm **Grimm**; accept **Jacob** Ludwig Karl Grimm in place of “Jacob”; accept **Wilhelm** Karl Grimm in place of “Wilhelm”]

<European Literature>

20. This theorem gave rise to a branch of combinatorics that studies how order emerges as system size grows. For 10 points each:

[10m] Name this theorem which states that coloring a graph with  $R(s, t)$  (“R-of-s-comma-t”) vertices will create a monochromatic complete subgraph of size  $s$  or of size  $t$ .

ANSWER: **Ramsey**’s theorem [accept **Ramsey** theory]

[10e] This Hungarian mathematician and George Szekeres (“SEH-keh-resh”) established an upper bound for the Ramsey number. This mathematician’s namesake number is the publishing distance between him and someone else.

ANSWER: Paul **Erdős** (“AIR-dish”) [or **Erdős** Pál]

[10h] Van der Waerden’s (“VAN der VARR-din’s”) theorem in Ramsey theory is a precursor to this theorem. This theorem states that any subset of the positive integers of positive upper density contains arbitrarily long arithmetic (“air-ith-MET-ick”) progressions.

ANSWER: **Szemerédi**’s (“SEH-meh-ray-dee’s”) theorem [reject “Szemerédi regularity lemma”]

<Other Science>