



**ACADEMIC
COMPETITION
FEDERATION**

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TIEBREAKER

Packet by

UNC B

Authors

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TOSSUPS

1. Spencer E. Cahill wrote that people go from “apprentice participation” to “bona fide participation” with respect to this concept. Inquiry into this concept is called the “circular ruins of contemporary debate” in a book partly titled for it, which describes how it is conceived of via the “metaphysics of substance.” Using a term from Sartre’s *Critique of Dialectical Reason*, this concept was defined as a “seriality” by Iris Marion Young. Another article cites Erving Goffman’s writings on “display” of this concept in formulating a concept of it as an “everyday accomplishment.” The notion of “doing difference” builds on Don Zimmerman and Candace West’s article about “Doing” this concept. It’s the first title noun of a book which rejects Foucault’s (“foo-KOH’s”) analysis of Herculine Barbin (“er-k’yoo-LEEN bar-BAN”) and ends with the section “From Parody to Politics.” For 10 points, what category is “performative” according to a Judith Butler book titled for its *Trouble*?

ANSWER: **gender** identity [or **gender** expression, or **gender** roles, or **gender** differences; accept “Gender as Seriality” or “Doing **Gender**” or *Gender Trouble*; prompt on identity; accept seriality BEFORE “Circular”; reject “sex”]

<Social Science>

2. This culture began the excavation of Lynch Quarry, a source for a high-quality material named for Knife River. In 2017, a team from the University of South Carolina linked this culture’s decline to widespread platinum deposits, supporting an “impact hypothesis.” A construction worker found over a hundred objects coated with red ochre along with the best-preserved human from this culture, Anzick Boy. Ivory tools excavated at Blackwater Draw are attributed to this culture, which was succeeded by the Folsom complex during the Younger Dryas era. This culture names a type of fluted stone objects which were affixed to shafts for hunting mammoths and other large animals, which this culture left between 13 and 11,000 years ago. A site in New Mexico names, for 10 points, what Paleolithic American culture known for its distinctive projectile points?

ANSWER: **Clovis** culture [accept **Clovis** point or **Clovis** people]

<Ancient History>

3. The Yoshida lab has pioneered self-oscillation of these materials using a BZ (“B-Z”) clock reaction and has engineered them to “walk.” Kristi Anseth’s group makes stimulus-responsive examples of these materials using PNIPAM (“P-N-I-pam”) or light-sensitive pendant groups. A highly interpenetrating one of these materials, made from a derivative of acrylic acid, is conjugated to biomolecules *in situ* (“in SIT-oo”) and pushes them apart during expansion microscopy. Enzymes can be encapsulated in spheres of these materials that form spontaneously when calcium is added to aqueous sodium alginate (“AL-juh-nate”). Self-healing examples of these materials are common scaffolds for tissue engineering. These materials form when colloidal suspensions, or sols, are heated. For 10 points, name these swellable, crosslinked polymer networks used as the stationary phase for electro-phoresis.

ANSWER: hydro**gels** [or nano**gels**; or xero**gels**; or micro**gels**; prompt on polymers or polymer networks until it is read; prompt on micro**spheres**]

<Chemistry>

4. About 500 refugees from this conflict controversially claimed asylum in South Korea using a special visa-waiver program on Jeju (“tchay-dzoo”) Island. One side in this conflict admitted to violating international law by using BL755 cluster bombs made in the UK and Brazil. In this conflict, the Security Belt paramilitaries and the Giants Brigades fought against “popular resistance committees” organized by the Southern Transitional Council. Hans Grundberg negotiated a two-month ceasefire in this conflict which allowed fuel ships to enter the port of Hudaydah (“hoo-DAY-duh”). Major factions in this conflict include government forces loyal to Abdrabbuh Mansur Hadi (“AB-draw-boo man-SOOR HAD-ee”), and the group Ansar Allah (“AHN-sar ah-LAH”), which is composed of Zaidi (“ZAY-dee”) Shias. At least 85,000 people have died in a famine caused by, for 10 points, what ongoing conflict between a Saudi-backed puppet government and Iran-backed Houthi (“HOO-thee”) militias?

ANSWER: Yemen Civil War [or Yemen crisis, or Yemen insurgency; accept all answers indicating the current war in Yemen; accept Saudi Arabia’s intervention in Yemen or equivalents; accept Houthi uprising or Houthi rebellion; do NOT accept “1994 Yemen Civil War” or “North Yemen Civil War” or “South Yemen Civil War”]
<Current Events>

5. In a novel titled for this type of person, the narrator is distraught that his exploits take up only four sentences in *The Street Is Dying*, the newspaper of a neighborhood nicknamed He-Who-Drinks-Water-Is-an-Idiot. That novel titled for one of these people opens with the line, “I have decided to kill Germaine on December 29.” In a different novel titled for this type of person, the narrator hallucinates seeing the words “I am the devil” float above Bono’s head during a U2 concert. An Alain Mabankcou (“mah-ban-KOO”) novel is titled for an “African” one of these people. In a book titled for one of these people, the protagonist confesses to his lawyer Harold Carnes that he murdered Paul Owen, and Daisy mishears the phrase “murders and executions” as “mergers and acquisitions.” For 10 points, according to the title, Patrick Bateman is what type of person in a Bret Easton Ellis novel?

ANSWER: psycho [or psychopath; accept *African Psycho*; accept *American Psycho*]
<World Literature>

6. A governor of this state drew ire for a nationwide tour to hawk his book *The Shore Dimly Seen*; that governor got ten reformist bills through its legislature in his first 24 days of office. Every public university in this state lost accreditation after its governor sacked a dean at its flagship school and threatened teachers who backed “communism or racial equality” in the Cocking affair. High offices in this state rotated among John Gordon, Alfred Colquitt, and Joseph Brown in its Bourbon Triumvirate. This state’s Neill Primaries Act of 1917 set up an electoral college-esque “county unit system.” Ellis Arnall was literally locked out of his office during this state’s “three governors controversy” after governor-elect Eugene Tallmadge died. In this state, newspaper editor Henry Grady promoted the “New South.” For 10 points, what state’s Jim Crow laws were challenged in the *Heart of Atlanta Motel* case?

ANSWER: Georgia [accept GA (“G-A”) from people somehow typing their answers on Buzzword]
<American History>

7. In pregnant women who have both pre-eclampsia *and* this disease, magnesium is contra-indicated, so methyl-dopa and levetiracetam (“lev-uh-tih-RASS-uh-tam”) are used instead. Mouse models of this disease can show decreased agrin-induced clustering in passive transfer experiments. Telithromycin (“tuh-lith-roh-MY-sin”) can precipitate this disease within two hours, and amino-glyco-sides can exacerbate it. LRP4 (“L-R-P-4”) and a kinase (“KIN-aze”) called MuSK (“musk”) are targeted in some forms of this disease, flares of which are treated with IVIG (“I-V-I-G”) or plasma exchange. Most patients under sixty with this disease should get a thymectomy (“thigh-MEC-tuh-mee”). This disease is treated with pyridostigmine (“pih-rih-doh-STIG-meen”). Double vision and eyelid drooping are presenting signs of this disease, which often is caused by antibodies to the nicotinic (“nick-uh-TEE-nick”) acetylcholine (“uh-SEE-til-KOH-leen”) receptor and is treated with acetylcholinesterase (“uh-SEE-til-koh-lin-ESS-ter-aze”) inhibitors. For 10 points, name this autoimmune disease that attacks the neuromuscular junction.

ANSWER: **myasthenia** gravis [or **MG**]

<Biology>

8. While composing the second movement of a piece in this genre, the composer received word of the Twin Towers attacks, and thus titled the movement “Elegy: September 11.” A review of the premiere of a piece in this genre described the soloist Aage (“OH-guh”) Oxenvad as having “made a pact with trolls and giants.” Mark-Anthony Turnage’s and Ellen Taaffe Zwilich’s (“tayf ZWIL-ik’s”) pieces in this genre were premiered with David Shifrin as the soloist. Aaron Copland’s piece in this genre has two movements linked by a cadenza for the solo instrument. Tonality clashes between F major and E major are interspersed with snare drum rhythms in a piece in this genre by Carl Nielsen, which is not for flute or violin. John Adams’s piece in this genre begins with “The Perilous Shore” and is titled *Gnarly Buttons*. For 10 points, Copland composed what sort of piece for orchestra and soloist for Benny Goodman?

ANSWER: **clarinet concerto** [prompt on concerto]

<Classical Music>

9. Roger Ames and David Hall gave their 2001 translation of a text from this school of thought the new title *Focusing the Familiar*. A prose text from this school of thought ends after quoting a poem’s claim that divine doings “have neither sound nor smell.” John Berthrong and Robert Neville began an inclusion-oriented “Boston” offshoot of this school of thought. A scenario first discussed in a work from this school imagines looking back and forth from an axe handle you hold to wood you plan to carve into a new handle. It doesn’t include Aristotle, but adherents of this tradition use the analogy of an archer with the skill to hit a target to describe its “doctrine of the mean,” which like the *Great Learning* titles one of this tradition’s Four Books. For 10 points, Zisi and Zhu Xi (“choo shee”) belonged to what tradition, whose virtue of *xìào* (“sh’yow”) is often translated as “filial piety”?

ANSWER: **Confucianism** [accept any answer indicating followers of the teachings of **Confucius** or **Kongzi**; prompt on classical Chinese]

<Philosophy>

10. In this story, a card game is punctuated by the asthmatic wheezing of an ex-horse-dealer, who has become too absorbed in the game to expectorate. In this story, a man bestows an imaginary kiss on a woman whose patriotism he witnesses while spying through a keyhole to learn “the mysteries of the corridor.” The claim that the good intentions of saints erase the potentially sinful nature of their actions is made by the elder of a pair of nuns in this story, during a dinner at which a countess and a wine-merchant tell stories of historical female self-sacrifice. This story ends with Cornudet (“cor-noo-DAY”) aggressively whistling “La Marseillaise” (“lah MAR-say-YEZ”) over the sobs of a woman who shared her food with her fellow coach passengers, but is snubbed after they coerce her into sleeping with a Prussian officer. For 10 points, name this Guy de Maupassant (“ghee duh moh-pah-SAHN”) story titled for a portly prostitute.

ANSWER: “**Boule de Suif**” (“bool duh SWEEF”) [or “**Ball of Fat**”; or “**Ball of Lard**”; or “**Dumpling**”; or “**Butterball**”]

<European Literature>

11. In NMR (“N-M-R”), these systems are characterized by a namesake coupling constant and an asymmetry parameter denoted eta (“AY-tuh”). In nuclei with spin greater than 1/2, electric field gradients couple to these systems to split Mössbauer (“MUSS-bower”) peaks into doublets. These systems have five degrees of freedom after they are made traceless by subtracting an “*r*-squared delta-*ij*” (“I-J”) term. One of these systems consisting of parallel cylindrical rods driven at RF (“R-F”) frequencies can serve as an *m/z* (“M-over-Z”) selector. The potential due to an electric one of these systems is described by a symmetric rank-2 tensor with an overall one-over-*R*-cubed dependence. Wolfgang Paul (“powl”) invented an ion trap named for these configurations, while those made of magnets are used to focus particle beams. Two positive and two negative charges form, for 10 points, what kind of multipole that is more complex than a monopole or dipole?

ANSWER: **quadrupoles** [accept electric **quadrupoles** or magnetic **quadrupoles**; accept **quadrupole** moment or **quadrupole** mass analyzer or **quadrupole** ion trap or **quadrupole** magnet; prompt on **multipoles**]

<Physics>

12. According to Ibn Battuta, this city’s sultan sent an official called a *sunbuq* to meet approaching boats that were guided by the al-Mnara lighthouse, and reaching this city took a two-month overland journey from Zeila. The explorer John Kirk noted that this city and Hobyo were the economic centers of the Hiraab Imamate, which regularly sent 20 dhows (“dows”) to trade with the Geledi state to its south. Under the Muzaffar dynasty, this city was the leading Islamic center of the Ajuraan Sultanate. A railroad from this city to Villabruzzi (“veel-lah-BROOT-zee”) was built under Italian rule, during which this city was called the “pearl of the Indian Ocean.” In 1991 the socialist dictator Siad Barre (“bah-RAY”) twice tried to recapture, for 10 points, what African capital, where Mohammad Aidid’s forces shot down a Black Hawk helicopter?

ANSWER: **Mogadishu** [or **Muqdisho**, or **Mogadiscio**, or **Hamar**, or **Xamar**]

<World History>

13. *Description acceptable.* After accidentally applying this substance to wild onions, the Macedonian princess Thessalonike became a mermaid. This substance gives the traditional title of a German fairy tale in which a princess identifies her true love based on his choice to ride his horse on, not next to, a golden road. In a Russian story, Ivan the Pea takes this substance from a dragon who kidnapped his sister Vasilissa of the Golden Braid, and gives it to Baba Yaga, its traditional guardian. In a work by Pseudo-Callisthenes, this substance keeps a salted fish from being cooked, while in Islamic versions, the sage al-Khidr (“al-kidder”) finds it after traveling through the Land of Darkness with Alexander the Great. Arawak legends about the mythical land of Bimini are said to have motivated a quest for this substance’s source in Florida. For 10 points, name this substance sought by Juan Ponce (“PON-say”) de León.

ANSWER: water of life [accept Water of Life and Death; accept Fountain of Youth; accept answers that describe water that heals or grants youth or eternal life; prompt on water; prompt on elixir of life]

<Mythology/Legends>

14. This author describes someone who “flies to a clockless country of crystal” in a poem that opens with the line “Naked, he lies in the blinded room.” This author described one woman with letters E and R branded on her cheeks and another woman who is “whipscarred, a summoning, a shining” in a poem that repeats the line “mean to be free.” That poem by this author opens with the line, “Runs falls rises stumbles on from darkness into darkness.” Cinquez leads a mutiny in a poem by him that begins “Jesus, Estrella, Esperanza, Mercy” and calls its central feature a “voyage through death.” A poem by this author of “Runagate Runagate” asks what its speaker knew “of love’s austere and lonely offices” and recalls his father working on the title day. For 10 points, name this first Black U.S. poet laureate, who wrote “Middle Passage” and “Those Winter Sundays.”

ANSWER: Robert Hayden (That first poem is “Soledad.”)

<American Literature>

15. The clothes of the main figures in this sculpture may have been modeled on costumes for the play *The Judgment of Jesus*, which is the source of the text that appears in this work. Fragments depicting the bleeding torso of Christ and the arms of Mary Magdalene survive from a destroyed crucifix group that once sat atop this sculpture. This work’s polychrome paint was applied by Jean Malouel (“mal-WELL”), while the ducal goldsmith Hennequin de Haacht made the now-lost copper spectacles of one of its primary figures. That figure, Jeremiah, was modeled on this work’s patron, Philip the Bold. Located at the Chartreuse de Champmol near Dijon, this hexagonal work includes small angels at its corners, between figures who hold unfurled scrolls. This work depicts six prophets who foresaw Christ’s death, including its horned namesake. For 10 points, name this masterpiece of Claus Sluter.

ANSWER: Well of Moses [or Puits de Moïse]

<Painting/Sculpture>

16. This city’s outskirts contained a model monastery at Inden, founded by a monk who was called the “Second Benedict” to distinguish him from Benedict of Nursia. Every seven years, pilgrims to this city saw Christ’s swaddling clothes and loincloth in a building that contained the Wolf’s Doors and Proserpina Sarcophagus. Several members of a Maundy Thursday procession in this city were killed when a wooden arcade collapsed; after that disaster, a document now called the *Ordinatio Imperii* (“or-dee-NAH-tee-oh im-PAIR-ee-ee”) was disseminated from here. This city’s scriptorium (“skrip-TOR-ee-um”) created an early miniscule script to easily transcribe the Vulgate Bible under the direction of a scholar from York. Odo of Metz designed a cathedral in this city where Lothair was crowned co-emperor with Louis the Pious. For 10 points, name this city where Alcuin and Einhard served in Charlemagne’s court.

ANSWER: Aachen [or Aix-la-Chapelle, or Oche, or Aken, or Aquae Granni, or Aquisgranum; prompt on Aix]

<European History>

17. In 2021, Mozilla shuttered an open-source tool for this task based on an Andrew Ng-led Baidu (“BY-doo”) project that reported state-of-the-art results on the Switchboard corpus. Neural net models for this specific task include Conformer and RNN-T (“R-N-N-T”). Users provide data to create personalized models for this task in Google’s Project Euphonia. This is the main task that applies the CTC (“C-T-C”) loss function to time-dependent data. Forced alignment is a simple case of this task that matches its input to an already-known output. MFCCs (“M-F-C-C’s”) are used in this task to reduce data dimensionality and to separate source from filter. It’s not translation, but this task’s accuracy is measured with the word error rate. The software Dragon carries out this task to perform dictation. For 10 points, name this task used in captioning, transcription, and other applications that extract words from audio.

ANSWER: automatic **speech recognition** [or **ASR**; accept computer **speech recognition** or **speech-to-text** or **STT**; accept **dictation** or **transcription** before respective mention; prompt on **natural language processing** or **NLP** by asking “What subtask of NLP?”; prompt on **machine learning** or **deep learning**; reject “text-to-speech” or “TTS”; reject “speaker identification”]

<Misc. Science>

18. An Agathe Snow sculpture that resembles part of this building consists of blue and white striped fabric padded with polyester strapped to a wheelbarrow. This is the best-known of the structures that influenced Alfred Parland’s design for a church built on the site of an assassination. This building has octagonal chapels at its compass points, with four cuboid chapels in between, surrounding a central nave dedicated to the Intercession of the Theotokos. The Church of the Savior on Spilled Blood was inspired by this red-brick building, whose best-known features may be based on the Book of Revelation’s description of a rainbow and exhibit both green-and-yellow spirals and red-and-white zigzags. This building commemorates the capture of Kazan by Ivan IV, who allegedly had its architect blinded. For 10 points, name this Moscow cathedral that has colorful onion domes.

ANSWER: **Saint Basil’s** Cathedral [or Cathedral of **Vasily** the Blessed; or **Pokrovsky** Cathedral; or Sobór **Vasíliya** Blazhénno; or **Pokrovsky** Sobór; accept Cathedral of the **Intercession** of the Most Holy **Theotokos** on the Moat before “Intercession” is read, and prompt thereafter]

<Other Fine Arts>

19. The narrator of a novel by this author recounts the history he learned from reading such works as John Lothrop Motley’s *The Rise of the Dutch Republic* and Ortelius’s *Album Amicorum* (“ah-mee-KOH-room”). In a play by this author, nearly the entire cast shouts “it’s hard to adjust to retirement” to a man who mishears this as “it’s hard to assess a requirement.” While appraising some paintings for his neighbor, Tony Churt, the protagonist of a novel by this author discovers a possible lost entry in Brueghel’s (“BROY-gull’s”) series *The Months*. In a play by him, a man shoves a cactus into a rival’s rear-end, but then falls down the stairs after his shoelaces are tied together by a woman over whose head he dumped a plate of sardines. In that play by this author of *Headlong*, actress Dotty plays a Cockney maid in the farce-within-a-farce *Nothing On*. For 10 points, name the British playwright of *Noises Off*.

ANSWER: Michael **Frayn**

<British Literature>

20. *Seven Days of this substance* title a 2016 account by McComas Taylor of a full recitation of the *Bhāgavata Purāṇa* (“BAH-guh-vuh-tuh poo-RAH-nuh”). With *velā*, it denotes a time period starting up to three hours before dawn, when prayer is advisable. It’s not gold, but a line about this being melted in the “crucible of love” to mint the coin of Truth is recited each morning in the thirty-eighth and final hymn of a full *Japji*. This item is usually listed last among the *Chaudha Ratan* (“CHOH-duh rutton”), fourteen “gems” equivalent to the Hindu *ratnas*. Three old jujube (“JOO-joob”) trees with names, called *beri*, stand by a *sarovar* (“suh-ROH-var”) representing this substance, which partly names a ritual that uses a flat double-edged *khandā* sword. Gobind Singh began a *sanskar*, or ceremony, in which a representation of this is put on initiates of the Khalsa order. For 10 points, the Sikh Golden Temple is in a city partly named for what fluid, which in Hindu tradition gives the gods immortality?

ANSWER: amrit [or amrita; or amrtá; or amata; or nectar of immortality; or nectar of the Name; or ambrosia; accept Amrit Vela; or amrit sarovar; or Amritsar; accept any answer indicating a fluid that gives immortality before “immortality”; prompt on holy water or baptismal water or sugar water by asking “What other substance does that represent?”; prompt on sugar by asking “What is that part of?”; prompt on name of God or Naam by asking “What substance represents that?”] (“Amritsar” means “pool of nectar”; *amrtá* shares the same root as Greek *ambrosía*.)
<Religion>

BONUSES

1. For 10 points each, answer the following about the theme to the animated series *The Simpsons*.

[10e] This composer and frontman for *Oingo Boingo* wrote the theme to *The Simpsons*. He wrote the scores for most of Tim Burton's films including *The Nightmare before Christmas*, in which he also performs the singing voice of Jack Skellington.

ANSWER: Danny **Elfman** [or Daniel Robert **Elfman**]

[10m] Elfman partially modeled *The Simpsons* theme on this composer's ad for Remington Electric Razor. This American composer of jazz fusion songs like "Peaches en Regalia" included difficult polyrhythms in his piece "The Black Page."

ANSWER: Frank (Vincent) **Zappa**

[10h] Matt Groening ("GRAY-ning") asked Elfman to model *The Simpsons* theme on the music of Hoyt Curtin, the in-house composer for this studio during the 1950's and 60's.

ANSWER: "**Hanna-Barbera** Productions, Inc. [or **H-B** Enterprises; or **H-B** Production Co.; or **Hanna-Barbera** Cartoons, Inc.]

<Other Fine Arts>

2. In his best-known book, this author described a prison run by Giorgio Ugolini ("oo-goh-LEE-nee"), a knight who believed he was a bat. For 10 points each:

[10m] Name this 16th-century Italian author. In an autobiography begun during his four-year imprisonment for sodomy, this author claimed to have led the company that killed the Constable of Bourbon during the siege of Rome and he also described pursuing and murdering the man who killed his brother.

ANSWER: Benvenuto **Cellini** ("cheh-LEE-nee")

[10e] This Italian womanizer wrote about using a bedsheet rope to escape from imprisonment in the Doge's ("DOH-jiz") Palace in the book *Story of My Flight*.

ANSWER: Giacomo (Girolamo) **Casanova**

[10h] Metternich claimed that this Italian author and unificationist harmed Austria "more than a lost battle" through the memoirs *My Prisons* he wrote while captive in Spielberg.

ANSWER: Silvio **Pellico**

<European Literature>

3. For 10 points each, answer the following about Nancy Cartwright's book *How the Laws of Physics Lie*.

[10m] A chief target of the book is the "covering law" model of explanation, also known as the deductive-nomological model, which this Berlin Circle philosopher co-names with Paul Oppenheim. He developed a paradox about Nicod's ("nee-KOH's") criterion for evidence.

ANSWER: Carl (Gustav) **Hempel** [accept the **Hempel** Model; accept the **Hempel**-Oppenheim Model; accept the Popper-**Hempel** Model; accept Peter **Hempel**]

[10e] Cartwright claims the covering law model conflates explanation with this property. The correspondence theory of this property claims that a statement possesses this property if it accurately corresponds to reality.

ANSWER: **truth** [or **true**; reject any near synonyms]

[10h] Cartwright's alternative model of scientific explanation is named for these phenomena. A 1981 book claims that in the current, postmodern "third order" of these phenomena, they precede and determine the real.

ANSWER: **simulacra** [or **simulacrum**; or **simulacres**; reject "simulation"] (That 1981 book is Jean Baudrillard's *Simulacra and Simulation*.)

<Philosophy>

4. Aluminum iso-prop-oxide catalyzes this type of reaction in the MPV (“M-P-V”) reduction. For 10 points each:
[10m] Name this class of hydrogenation reactions that can be done in the liquid phase at ambient conditions, since they rely on reductants like iso-propanol rather than gaseous hydrogen.

ANSWER: **transfer** hydrogenations

[10e] When isopropanol is the reductant in a transfer hydrogenation, it is oxidized to this other useful solvent, comprised of a carbonyl (“CAR-buh-nil”) sandwiched between two methyl groups.

ANSWER: **acetone** [or **propanone**; prompt on **dimethyl ketone**; prompt on **C₃H₆O** or **CH₃COCH₃**]

[10h] Most homogeneous transfer hydrogenation catalysts use these molecules as ligands (“LYE-gands”). These compounds, the most common persistent carbenes (“CAR-beens”), are used in lieu of phosphine (“FOSS-feen”) ligands in second- and third-generation Grubbs catalysts.

ANSWER: **N-heterocyclic** carbenes [or **NHCs**; or **N-heterocycles**; or **Arduengo** carbenes; prompt on **heterocyclic carbenes** or **heterocycles**]

<Chemistry>

5. This minister took the unprecedented step of publicizing his *Report to the King* in 1781 to counter charges that he was cooking the books to cover debts. For 10 points each:

[10m] Name this finance minister who tried to more equally distribute the *taille* (“tye”) and poll taxes among the populace and pushed for greater representation of the Third Estate.

ANSWER: Jacques **Necker**

[10e] Necker’s second dismissal, in 1789, was an instigating factor for this event, so Necker was recalled two days later. This July 14 event freed numerous political prisoners of the Ancien Régime (“ahn-S’YAHN ray-ZHEEM”).

ANSWER: storming of the **Bastille** [accept answers referring to an attack on the **Bastille**]

[10h] Later in 1789, revolutionaries began issuing these paper notes backed by confiscated Church lands to cover French debts. The economist William Playfair helped engineer the hyperinflation of these notes.

ANSWER: **assignats** (“ah-seen-yat”)

<European History>

6. For 10 points each, answer the following about Ira Aldridge, the first Black actor to successfully play tragic roles on the London stage.

[10m] Aldridge advanced abolitionism with his revision of *The Padlock*, an opera by a librettist with this name.

Jonathan Swift used this name in a hoax predicting the death of John Partridge, and Richard Steele used this pen-name as editor of *The Tatler*.

ANSWER: Isaac **Bickerstaffe** [prompt on **Isaac**]

[10e] Aldridge’s most celebrated role was this Shakespeare character, who fatally strangles his Venetian wife after believing she has had an affair with Cassio.

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

[10h] Aldridge’s other celebrated Moorish character was Zanga in this 18th-century author’s play *The Revenge*. This author meditated upon lost loved ones in the nine nights that break up his poem *The Complaint, or Night-Thoughts*.

ANSWER: Edward **Young**

<British Literature>

7. The NEMO-3 (“nemo-3”) experiment reported a half-life of over 10^{24} (“ten to the 24th”) years for a proposed type of this process to occur in molybdenum (“muh-LIB-duh-num”)-100. For 10 points each:

[10m] Name this process in which two neutrons are transformed into two protons. The aforementioned type of it is named for the absence of a particle proposed to be a Majorana (“my-yo-RAH-nah”) fermion.

ANSWER: **double beta** decay [accept neutrinoless **double beta** decay; prompt on partial answer]

[10e] A measurement of neutrino-less double beta decay would confirm that the neutrino is a Majorana fermion, and thus its own example of this particle. For the electron, this particle is the positron.

ANSWER: **antiparticle** [prompt on **antimatter**]

[10h] The rate of double beta decay varies with the 11th power of this quantity if neutrinos are produced and the fifth power if not. This excess kinetic energy of a nuclear reaction is equal to the change in mass times c -squared.

ANSWER: **Q** (“Q”) value

<Physics>

8. Two guardroom scenes at the Prado, both showing a red, white, and blue flag beside armor scattered across the floor, are attributed to a pair of brothers from this family. For 10 points each:

[10m] Name this family of Flemish artists that included Abraham and his more famous brother David, who depicted Archduke Leopold Wilhelm’s art galleries while serving as his court painter.

ANSWER: **Teniers** (“tenures”) [accept David **Teniers** the Younger or Abraham **Teniers**]

[10h] David Teniers documented key Italian works owned by Leopold Wilhelm in this book of 243 engravings. It is considered the first illustrated printed catalogue of a major collection.

ANSWER: **Theatrum Pictorium** [or **Theatre of Painting**]

[10e] The Teniers brothers were leading artists of the *singerie* (“sawn-j’REE”), a satirical genre in which monkeys perform everyday human activities. The genre peaked with Christophe Huet (“yoo-AY”) and Antoine Watteau as part of this art movement.

ANSWER: **Rococo**

<Painting/Sculpture>

9. Answer the following about the conservationist Birtuté Galdikas (“bee-roo-TAY gahl-DEE-kas”), for 10 points each.

[10m] For more than four decades, Galdikas has led the International Foundation for these animals and attempted to preserve a population of them in Indonesia.

ANSWER: **orangutans** [or **orangutangs**, or **Pongo**; prompt on **primates**, or **apes**, or **great apes**]

[10e] Galdikas’s camp in Borneo is named for this family of paleontologists, whose member Louis trained her.

Louis’s wife Mary discovered *Homo habilis* remains in East Africa’s Olduvai Gorge.

ANSWER: **Leakey** [or Louis **Leakey**, or Mary **Leakey**, or Jonathan **Leakey**]

[10h] Galdikas teaches primatology in Indonesia and at this university, which donated land for a conservation area around Burnaby Mountain. This Canadian university also operates the Bamfield Marine Station and the

TRIUMF (“triumph”) particle accelerator.

ANSWER: **Simon Fraser** University

<Other Academic>

10. Answer the following about famous trials in Chinese history, for 10 points each.

[10e] This dynasty's "Four Great Trials" include the case of Lan Yu ("lawn yoo"), who was plotting to overthrow its founder, the Hongwu ("hung-oo") emperor. This dynasty's other rulers included the Yongle ("yong-luh") emperor.

ANSWER: **Ming** dynasty [or Great **Ming** or Dà **Míng**]

[10m] This emperor instigated a series of trials prosecuting queue-cutters during the Sorcery Scare of 1768. This Qing emperor abdicated in 1796 so that his reign would be shorter than that of his grandfather Kangxi ("kang-shee").

ANSWER: **Qianlong** ("ch'yen-long") emperor [or **Hongli**]

[10h] At the Crow Terrace Trial, this scholar was sentenced to exile for writing poems criticizing the "New Policies" in one of the earliest free speech trials in Chinese history.

ANSWER: **Su Shi** [or **Zizhan** or **Dongpo**]

<World History>

11. Like its composer's pieces *Festina lente* ("fess-TEE-nah LEN-tay") and *Arbos*, this piece is structured as a mensuration canon. For 10 points each:

[10h] Name this piece for string orchestra that opens with three notes on the tubular bells before the strings enter to play descending A-minor scales in octaves at varying speeds.

ANSWER: ***Cantus in Memoriam Benjamin Britten***

[10e] *Cantus in Memoriam Benjamin Britten* is by this Estonian composer, whose *tintinnabuli* ("tin-tin-AB-yoo-lee") style is exhibited in his pieces *Für Alina* ("foor ah-LEE-nah") and *Spiegel im spiegel* ("SHPEE-gull eem SHPEE-gull").

ANSWER: Arvo **Pärt** ("pairt")

[10m] Another example of Pärt's *tintinnabuli* style is his piece *Fratres I* ("FROT-raze 1"), a piece in this genre.

Boccherini's ("bock-uh-REE-nee's") so-called "celebrated minuet" is from one of his more-than-a-hundred pieces in this chamber genre.

ANSWER: **string quintet** [prompt on quintet]

<Classical Music>

12. Afonso de Albuquerque's ("ah-FOHN-soo thee all-boo-KERK'S") 1511 conquest of Malacca led him to discover a route to this archipelago which led him to send an expedition to claim them for Portugal. For 10 points each:

[10e] Name these islands east of Java. Their common European name reflects their richness in clove, nutmeg, and similar products.

ANSWER: **Spice** Islands [or **Moluccas** or **Maluku** Islands]

[10h] In this 1529 treaty, which modified the Treaty of Tordesillas ("tor-deh-SEE-yahs"), Spain ceded dominance of the Moluccas to Portugal in exchange for finances for the War of the League of Cognac.

ANSWER: Treaty of **Zaragoza**

[10m] While seeking spices east of the Moluccas, Álvaro de Mendaña de Neira ("AHL-vah-roh de men-DAH-N-yah de NAY-rah") found this archipelago and was shocked by cannibalism. During a campaign on this archipelago, the U.S. was crushed at the Battle of Savo but won at Henderson Field.

ANSWER: **Solomon** Islands (The campaign is the Guadalcanal campaign.)

<Other History>

13. This city's drug trafficking world inspired the setting of Yuri Herrera's *Trabajos del reino* ("trah-BAH-hoss dell RAY-noh") or *Kingdom Cons.* For 10 points each:

[10m] Name this city that was fictionalized as Santa Teresa in Roberto Bolaño ("boh-LAHN-yoh")'s novel 2666. That novel took inspiration from this city's real-life epidemic of killings of young women in the mid 1990s and early 2000s.

ANSWER: **Ciudad Juárez** ("s'yoo-DAD HWAH-ress"), Mexico

[10h] Herrera's time living in Ciudad Juárez also influenced this 2009 novel by him, which chronicles the journey of switchboard operator Makina across the Mexico-U.S. border.

ANSWER: ***Signs Preceding the End of the World*** [or ***Señales que precederán al fin del mundo***]

[10e] Ambrose Bierce, who disappeared after joining Pancho Villa's army in Ciudad Juárez, inspired the title character of *The Old Gringo*, by this Mexican author.

ANSWER: Carlos **Fuentes** [or Carlos **Fuentes** Macías]

<World Literature>

14. François Rousset ("roo-SAY") showed that in common models of this phenomenon, demographic parameters can be estimated by how the ratio of F_{st} ("F-S-T") to 1 minus F_{st} changes with geographic separation. For 10 points each:

[10h] Name this ubiquitous three-word phenomenon in population genetics, wherein populations that are further apart are more genetically distinct as a neutral consequence of limited gene flow.

ANSWER: **isolation by distance** [prompt on **IBD**]

[10e] F_{st} is calculated by comparing measured heterozygosity ("het-uh-roh-zye-GOSS-uh-tee") to the value expected under this doubly-eponymous null model. For alleles ("uh-LEELS") with frequency p and q , this model predicts that heterozygotes ("het-uh-roh-ZYE-goats") will have frequency $2pq$.

ANSWER: **Hardy-Weinberg** model [or **Hardy-Weinberg** equilibrium; or **Hardy-Weinberg** principle]

[10m] F-statistics and IBD ("I-B-D") were proposed independently by Gustave Malécot ("mah-lay-KOH") and this geneticist. With Ronald Fisher, he names a non-overlapping generations model of allelic change under genetic drift.

ANSWER: Sewall **Wright** [or Sewall Green **Wright**]

<Biology>

15. For 10 points each, answer the following about sacred caves in ancient Greek religion.

[10m] People left bone vessels in a cave on the slope of this mountain as offerings to appease the Corycian ("koh-RICK-ian") nymphs and as part of Dionysian rites. Ancient writers place the Castalian spring on either this mountain or Helicon.

ANSWER: Mount **Parnassus**

[10e] People on this island flocked to the cave system below Mount Ida to worship Zeus, who was raised on this island by the goat Amalthea ("uh-MAL-thay-uh").

ANSWER: **Crete** [or **Kriti**]

[10h] To appease serpent gods, initiates into the cult of this chthonic ("k'thonic") figure brought honey cakes to a cave near Lebadea in Boeotia ("bee-OH-shuh") and were scared absolutely witless during the subsequent rites.

ANSWER: **Trophonius**

<Religion>

16. In early 2022, this state's courts struck down a Congressional gerrymander drawn by its General Assembly, which made 10 of 14 House districts strongly Republican. For 10 points each:

[10e] Name this East Coast state set to use a redrawn map with 7 Republican-leaning districts, in line with Donald Trump's narrow wins here. Madison Cawthorn represents its hip town of Asheville.

ANSWER: **North Carolina** [or **NC**]

[10m] The 4th district, which encompasses the metropolitan area named for this city, remains the state's most solidly-blue district. This is the second-most-populous city in the Research Triangle.

ANSWER: **Durham** ("DURR-um") [prompt on **Raleigh-Durham**; reject "Raleigh"]

[10h] The new 6th district rejoins Greensboro and this city, but keeps it apart from Winston-Salem, the other city in the "Piedmont Triad." This "furniture capital of the world" hosts high-end Home Furnishings Markets twice a year.

ANSWER: **High Point** (The third Piedmont Triad city, Winston-Salem, is in the new map's 4th District.)

<Geography>

17. A law abbreviated FIRREA ("fih-RAY-uh") changed the regulation of these businesses after falling oil prices led to ruin for many of them in the Sun Belt. For 10 points each:

[10m] Identify these financial institutions, over a thousand of which failed between 1980 and 1994. Five senators met with regulators on behalf of a shady one named Lincoln that was owned by campaign donor Charles Keating.

ANSWER: **savings and loan** associations [or **S&Ls**; or **thrift** institutions; or zombie **thrifts**; accept **savings and loan** crisis or Lincoln **Savings and Loan** Association; prompt on **savings banks** or **mutual savings banks**]

[10e] The Keating Five included this Senator from Ohio, a former Mercury program astronaut.

ANSWER: John **Glenn** [or John Herschel **Glenn**, Jr.]

[10h] Lincoln Savings and Loans was headquartered in this non-Arizonan planned city, which was built atop the ranch of its namesake Irish-American family of developers. Per William Pereira's ("puh-RAY-ruh's") "Master Plan," this suburban city was built around a public university campus that opened in 1971.

ANSWER: **Irvine**, California [accept University of California, **Irvine**]

<American History>

18. Psychology experiments can be confounded by subjects' awareness that the experimenter wants something. For 10 points each:

[10h] Martin Orne ("OR-nuh") used this two-word term for the "totality of cues and mutual expectations" that influence the behavior of experiment participants. Orne suggested using "quasi-controls" to detect and adjust for them.

ANSWER: **demand characteristics**

[10e] Orne's paper on demand characteristics discusses this procedure, which purports to induce a state of "heightened suggestibility" and was partly developed by Franz Mesmer.

ANSWER: **hypnosis** [or **hypnotherapy** or **hypnotizing**; prompt on **mesmerism** by asking "What is the more general term?"]

[10m] A similar effect is named for this German show horse, who supposedly clopped his hoof a set number of times to "add" numbers, but was actually reacting to its master's eye movements as the proper number approached.

ANSWER: **Clever Hans** effect [or der **kluge Hans** Effekt; prompt on **Hans**]

<Social Science>

19. This author employed her trademark simple and repetitive vocabulary in her first major novel, *The Making of Americans*. For 10 points each:

[10e] Name this American expatriate who wrote the supposed autobiography of her life partner, Alice B. Toklas.

ANSWER: Gertrude **Stein**

[10m] The stories in this Stein collection are set in Bridgepoint, a fictional city based on Baltimore. The title characters in its stories "The Good Anna" and "The Gentle Lena" are both German immigrants.

ANSWER: *Three Lives*

[10h] This longest story in *Three Lives* is titled for a mixed-race woman who dies alone after a wild series of love affairs. James Weldon Johnson declared that this story made Stein the first white writer to write a love story about Black people that treated them as "normal members of the human family."

ANSWER: "**Melanctha**"

<American Literature>

20. Intuitively, this operation is a coordinate-independent derivative of its second argument with respect to its first argument. For 10 points each:

[10h] Name this alternating bilinear operation, typically written as the commutator of a pair of vector fields. It vanishes if and only if each field is invariant under the flow of the other.

ANSWER: **Lie** ("lee") **bracket** [prompt on partial answer; prompt on Lie derivative]

[10e] The Lie bracket defines the structure of a Lie algebra, which in turn corresponds to a differentiable one of these objects. They are sets equipped with an associative, invertible binary operation.

ANSWER: **groups** [accept Lie **groups**]

[10m] The group named for this object is the unique one-parameter, compact, connected Lie group. In topology, this object is called "*S*-superscript-1" and is the one-point compactification of the open unit interval.

ANSWER: unit **circle** [accept **circle** group; accept **1-sphere**; reject "sphere"]

<Misc. Science>