2022 ACF Winter

Packet 2 by MIT A, MIT B, UNC A

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Tossups

1. Workers in this country’s capital staged a “meat riot” over a 1905 tariff on imported beef, whose tallow and jerky drove this country’s economy before its wheat exports fed the Australian gold rushes. After its silver rush, this country and its eastern neighbor were settled by Croats during an 1880s gold rush and boom in sheep estancias (“ess-TAHNS-yahss”). Natives of this country traded alerce (“ah-LAIR-say”), or *Fitzroya* wood, after they led the Destruction of the Seven Cities in Araucanía (“ah-RAO-kah-NEE-ah”). This ABC power’s Chuquicamata (“choo-kee-kuh-MAH-tuh”) mine made it the world’s largest producer of copper, an industry nationalized in 1971 by a socialist president. This country, which contains Valdivia (“bahl-DEEV-yah”), won saltpeter deposits in Antofagasta from Bolivia and Peru in the War of the Pacific. For 10 points, what homeland of the Mapuche was led by Salvador Allende?

ANSWER: **Chile** [or Republic of **Chile** or República de **Chile**; accept **Chile** Wüdalmapu or **Chili** Suyu or **Chili** Ripuwlika or Repūvirika o **Tire**; accept Captaincy-General of **Chile** or Capitanía General de **Chile** or Governorate of **Chile**]

<World History>

2. A poem in this collection claims that the “weakened voice” of its speaker’s soul “resembles the death rattle of a wounded man.” Another poem in this collection notes how a central concept “makes neither great gestures nor great cries,” yet “would willingly make of the earth a shambles.” A stanza in this collection begins “how sour the knowledge travelers bring away!” and ends by comparing human existence to “an oasis of horror in a desert of” a concept that “dreams of scaffolds while smoking a hookah pipe.” This collection describes a concept sometimes translated as “boredom,” called ennui (“ahn-WEE”), in the sections “The Voyage” and “Spleen and Ideal,” and calls the addressee a “hypocrite reader.” For 10 points, name this poetry collection by Charles Baudelaire.

ANSWER: *The* ***Flowers of Evil*** [or *Les* ***fleurs du mal***]

<European Literature>

3. In Gerar (“guh-RAHR”), Isaac rebuilds several of these places that had been destroyed by the Philistines. Joseph was said to have been taken from one of these places by a caravan of Midianites after being betrayed by his brothers. After a Samaritan at one of these locations says that she has no husband, Jesus correctly says that she has had five husbands and isn’t married to the man she lives with. A servant searching for a wife for Isaac at one of these places prays for a sign, which Rebecca fulfills by offering to provide for the servant and his camels. One of these places, which is revealed by God to Hagar after she flees with Ishmael, was called Zamzam. For 10 points, name this type of place where Jesus compares his gospel to “living water.”

ANSWER: **well**s [accept **cistern**s; accept **spring**s; accept Zamzam **Well** or **Biʾru** Zamzam; accept Samaritan woman at the **well**; accept Joseph’s **Well** or **Jubb** Yussef; prompt on pits or holes or equivalents; prompt on oasis; prompt on water sources or equivalents]

<Religion>

4. A radially symmetric phenomenon in these materials has a strength proportional to the log of a parameter with a critical value of “1 over root 2,” which is denoted by kappa. For these materials, the square root of the quantity [read slowly] “the reduced Planck constant squared over twice the mass times the magnitude of alpha” gives the length scale xi (“zai”). Some of these materials are effectively fixed in place when the phenomenon of “flux pinning” affects their Abrikosov (“uh-BRICK-uh-sov”) vortices (“VOR-tih-seez”), which have a size characterized by the London penetration depth. Type I (“one”) varieties of these materials expel magnetic fields in the Meissner (“MIZE-nur”) effect. For 10 points, name these materials that, below their critical temperature, have effectively zero resistance.

ANSWER: **superconductor**s [accept **superconductivity**; accept Type I **superconductor**s or Type II **superconductor**s] (Xi denotes the superconducting coherence length.)

<Physics>

5. An anti-war poem by this author includes the image of “ravens and kites” hanging the entrails of the dead in the trees. This author of “Nefarious War” wrote on the less viscerally violent effects of conflict in his wistful “Exile’s Letter.” The speaker of one of this author’s poems awakens and momentarily wonders if light is frost. In another of this author’s poems, the addition of the speaker’s shadow “makes three of us” after the speaker “asked the moon to drink with me.” Despite not knowing this poet’s language, Ezra Pound created a well-known English version of his poem “The Song of Cháng’ān.” For 10 points, what poet with a fondness for wine wrote “Quiet Night Thought” and “Drinking Alone by Moonlight” during the Táng dynasty?

ANSWER: **Lǐ** Bái (“lee bye”) [or **Li** Po; or **Li** Bo; **Li** Pai; or **Lǐ** Taìbaí; accept **Rihaku**; accept **Qīnglián Jūshì** or **Ch’ing-lien Chu-shih**]

<World Literature>

6. The results were not affected by subjects’ attention being directed to this phenomenon’s source in a study by Allen, Kenrick, Linder, and McCall. In a study of how people interpreted the source of this phenomenon, the Thematic Apperception Test was administered by a confederate who gave the subjects their phone number. Experiencing moderate, but not low or high, amounts of this phenomenon can improve task performance according to the Yerkes–Dodson law. Emotions are formed by a combination of the cognitive label and this phenomenon according to the two-factor theory of Stanley Schachter and Jerome Singer. Dutton and Aron tested this phenomenon’s “misattribution” by making subjects cross a scary bridge and encounter a conventionally attractive woman. For 10 points, name this form of psychological and physiological alertness.

ANSWER: **arousal** [or being **aroused**; accept misattribution of **arousal**; accept sexual **arousal**; prompt on alertness or awakeness or equivalents until “alertness” is read; prompt on excitation or word forms like excited; prompt on fear or equivalents until “scary” is read; prompt on stress]

<Social Science>

7. A supporter of this legislation claimed “I’ve never been in reverse in my lifetime” only two weeks after he had told radio host Hoppy Kercheval of his reservations about it. That politician supported this law only after hearing arguments from Lawrence Summers and the Penn Wharton Budget Model. Late negotiations over this legislation led to the closure of the carried interest loophole being dropped and a one-percent tax on stock buybacks being added. Meetings with Chuck Schumer led to support of this legislation, rather than the preceding Build Back Better Act, by Joe Manchin. For 10 points, over 300 billion dollars of energy funding were provided by what act signed into law in August 2022, which is named for its attempts to slow increases in price levels?

ANSWER: **Inflation Reduction** Act of 2022 [prompt on Build Back Better Act by asking “that was a precursor of what enacted legislation?”]

<Current Events>

8. A book review portrait by this photographer angered its subject because it showed him smoking with legs spread awkwardly in an armchair. Marvin Israel compiled this photographer’s work into the photobook *Monograph*. A museumgoer once spat on this photographer’s image of a smoking man with manicured nails wearing hair curlers. This photographer captured an elderly couple looking up at their nearly nine-foot-tall son, the “Jewish Giant.” This photographer’s image of two girls with matching headbands and corduroy dresses may have inspired the twin motif in *The Shining*. An image by this photographer depicts a boy with a tilted head clutching a fake “pineapple”-model weapon. For 10 points, Susan Sontag’s essay “Freak Show” criticizes what New York City photographer of *Child With Toy Hand Grenade in Central Park*?

ANSWER: Diane **Arbus** [or Diane **Nemerov**] (The first line refers to Arbus’s portrait of Norman Mailer.)

<Other Fine Arts (Photography)>

9. This organization used gas cylinders to develop a type of custom mortar known as a “barrack buster.” The discovery of a weapons stash held by this organization resulted in the enactment of the Falls Curfew. Attacks carried out by this organization made the Europa Hotel the “most bombed hotel in the world.” A favorite weapon of this organization partially names their “armalite and ballot box strategy.” Members of this organization wore only blankets and refused to take showers as part of a peaceful protest at the Maze prison. This organization’s popularity swelled after paratroopers fired on civilians in 1972 on “Bloody Sunday.” For 10 points, the Good Friday Agreement was signed by what paramilitary organization, the provisional wing of a group that fought for the creation of a united Ireland?

ANSWER: Provisional **IRA** [or Provisional **Irish Republican Army**; or **Óglaigh na hÉireann**; prompt on Provos; reject “Old IRA”]

<European History>

10. The density of these structures can be determined by staining for the scaffold proteins Homer, Bassoon, or Piccolo, the latter two of which organize an “active zone” adjacent to them. A type of these structures is stabilized by the interaction between C-a-d-m and the scaffold P-S-D-95. Cochlear hair cells and the retina contain a version of these structures with an electron-dense ribbon. Spillover between these structures is prevented by astrocytes, which ensheath them. These structures are strengthened by inserting AMPA receptors in the post-[*this structure*]-membrane. Their namesake boutons contain vesicles docked by SNAREs. These structures strengthen and weaken based on their activity in the simplest example of their namesake plasticity. They typically occur after an axon. For 10 points, name these spaces between neurons where neurotransmitters are released.

ANSWER: **synapse**s [or **synaptic** cleft; accept **synaptic** plasticity; accept **synaptic** boutons; accept post-**synaptic** membrane]

<Biology>

11. In a novel titled for this sort of place, a pompous writer claims that Branwell was the true genius of the Brontë siblings. In that novel, the protagonist moves to one of these places to live with her Aunt Ada, who sees “something nasty in the woodshed.” Characters in another novel titled for one of these places drop rocks from a quarry to create an object that is later destroyed with blasting powder. In that novel titled for one of these places, a leader’s love of whisky leads to the addition of qualifiers like “with sheets” and “to excess” to a list of “Seven Commandments.” The skull of Old Major is displayed in one of these places by a character who lies about his role in a battle that was won by his rival, Snowball. For 10 points, name this sort of place ruled by the pig Napoleon in an allegorical novel by George Orwell.

ANSWER: **farm**s [accept *Animal* ***Farm***; accept *Cold Comfort* ***Farm***; prompt on barns by asking “what larger type of place is it located on?”] (*Cold Comfort Farm* is by Stella Gibbons.)

<British Literature>

12. In its first three years orbiting this body, no flashes at all were detected by the LAC (“L-A-C”) instrument. While traveling to this body in 2010, a 200-square-meter sheet helped power a probe in the first successful use of a solar sail. After its initial launch alongside *IKAROS* in 2010, this body was successfully orbited from 2015 onwards by the JAXA (“JACK-sah”) probe *Akatsuki* (“ack-at-SOO-kee”). The *Magellan* probe mapped this body’s Maxwell Montes (“MON-tez”). In 1761, the solar parallax was first calculated during an event named for this body, which occurred most recently in 2004 and 2012 and involves its transit across the Sun. For 10 points, what planet with a 225-day orbital period is the hottest in the solar system, and the second from the Sun?

ANSWER: **Venus** [accept transit of **Venus**]

<Other Science>

13. In a painting by this artist, a bust, likely of Pythagoras, faces left over a guitarist who reads the sheet music on the lap of a woman seated on the ground. This artist of *The Scale of Love* depicted four actors dressed as stock characters below a man in a white commedia dell’arte costume who stands facing the viewer in the painting *Gilles* (“zheels”) or *Pierrot* (“pyeh-ROH”). A man offers his hand to a woman climbing a step while a couple examines a large painting of nudes in a painting by this artist, in which men pack a portrait of Louis XIV into a wooden box. This artist of *The Shop Sign of Gersaint* (“zhair-SAHN”) also painted several cupids flying in the air as a procession of couples approaches a golden gondola. For 10 points, name this Rococo artist of *The Embarkation for Cythera* (“SITH-uh-rah”).

ANSWER: Antoine **Watteau** (“an-TWAHN wot-OH”) [or Jean-Antoine **Watteau**]

<Painting & Sculpture>

14. A building in this city was designated a landmark in 1968 to prevent Marcel Breuer’s plan to redevelop it into a skyscraper, leading to a landmark Supreme Court case on regulatory takings. The replacement of a train station in this city with a sports arena led art historian Vincent Scully to comment, “One entered the city like a god. One scuttles in now like a rat.” It's not Toronto, but Jane Jacobs led the opposition to this city’s construction of the LOMEX expressway. This city’s suburbs were the site of the first Levittowns. This city’s construction of bridges and highways is the focus of Robert Caro’s book *The Power Broker*, a biography of developer Robert Moses. For 10 points, name this city where structures like the George Washington Bridge cross the East River and Hudson River.

ANSWER: **New York** City [or **NYC**] (The first line refers to the planned redevelopment of Grand Central Terminal and the subsequent case *Penn Central Transportation Co. v. New York City*.)

<American History>

15. In a section of this text, a man’s blood shoots out like a burst pipe after he stabs himself, making the mulberries next to him purple. While trying to gain access to an orchard, a man in this text disguised as an old lady tells the story of Iphis (“AI-fiss”) hanging himself on his beloved’s doorway. It’s not by Hesiod (“HEZZ-ee-id”), but the first book of this text outlines how mankind became impious during its fourth and final age, the Iron Age. This text originated a story in which a man dies after thinking that a lion ate his beloved, whom he talked to using a crack between their walls. This text’s fifteenth and final book closes with the apotheosis of Julius Caesar. This text originated the story of Pomona and Vertumnus and the tragedy of Pyramus and Thisbe. For 10 points, name this text that centers on transformation and was written by Ovid.

ANSWER: ***Metamorphoses*** (“met-uh-MOAR-foh-seez”)

<Mythology>

16. In a lecture given at Johns Hopkins, this thinker claimed that systems open up in an “event” upon the realization that centers are established arbitrarily. This thinker coined a meaning of the word “trace” that refers to the “always-already hidden” contradictions of a term. This thinker argued with an American on the theories of J. L. Austin in a debate sparked by this thinker’s essay “Signature Event Context.” Gayatri Spivak translated a book by this thinker that opens with a critique of Ferdinand de Saussure’s (“day sah-SOOR’s”) philosophy of signifiers. That book by this philosopher introduced a term that is an intentional misspelling of “difference” and argued that scholars have always valued writing as a derivative of speech. For 10 points, name this French deconstructionist who wrote *Of Grammatology*.

ANSWER: Jacques **Derrida** (“DAYR-ih-dah”) [or Jackie Élie **Derrida**] (The debate in the third sentence is the Derrida–Searle debate.)

<Philosophy>

17. In a poem by this author, the speaker watches “planets gather / like leaves” and sees the “striding” of “the color of the heavy hemlocks.” The speaker tries not to think “of any misery in the sound of the wind” in a poem by this author that depicts “spruces rough in the distant glitter.” That poem by this author concludes by describing “the nothing that is not there and the nothing that is,” and opens, “one must have a mind of winter.” This poet describes “lucid, inescapable rhythms” and “the beauty of innuendoes” in a poem that criticizes “thin men of Haddam” (“HAD-am”) and begins by noting that the title creature’s eye is the only moving thing among “twenty snowy mountains.” For 10 points, name this American poet of “The Snow Man” and “Thirteen Ways of Looking at a Blackbird.”

ANSWER: Wallace **Stevens** (The poem in the first line is “Domination of Black.”)

<American Literature>

18. A piece in this genre that includes the *arioso* section “In the swamp” and the march “Over the breast of spring” was based on text by Walt Whitman; that piece in this genre was written by Paul Hindemith (“HIN-duh-mitt”). The seven-measure introduction of a piece in this genre opens with bassoons playing [read slowly] D, C sharp D E F before they are joined by the basset horns. During the *Sequentia* of a piece in this genre, a bass soloist repeats a descending B-flat major melody played by the trombone in the *Tuba mirum* movement. Franz Süssmayr (“SOOSS-mah-yer”) completed a piece in this genre left unfinished at its composer’s death, including its *Lacrimosa* movement. For 10 points, Mozart wrote a D minor example of what pieces, which set a mass for the dead?

ANSWER: **requiem** mass [accept Mozart's ***Requiem*** *in D minor*; prompt on mass for the dead]

<Classical Music>

19. The “efficient” form of a process that forms these structures employs a high ratio of accelerators such as thiurams. Manganese soaps can be used to form these structures in drying oils, which can lead to paint “drying.” The alkylating agent mustard gas reacts with DNA to form these structures on guanine residues. The first fully synthetic plastic, Bakelite, is a thermosetting resin that has a high frequency of these structures as every phenol (“fen-OLL”) can connect to three groups. These structures form reversibly between proteins and DNA exposed to formaldehyde. Epoxy resins can form these structures with themselves in curing, leading to rigidity. In proteins, these structures are exemplified by oxidized cysteine residues, which form disulfide bridges. For 10 points, what structures connect different polymer chains into a network?

ANSWER: **cross-link**s [accept **cross-link**ing agents or **cross-link**ing reagents or **cross-link**ers; prompt on efficient vulcanization or curing; prompt on disulfides until read; prompt on bonds or disulfide bridges; prompt on connections or links; reject “polymerization”]

<Chemistry>

20. A poetic epigraph on one of these objects praises the union of yellow and white waterlilies and lists the creators of three temples at Paṭṭadakal (“PUT-uh-duck-ull”). Some of these objects record a “schism” that led to the convocation of a group’s third council by a ruler who declared a tax exemption with one at Lumbini (“LOOM-bee-nee”). A cannonball dented one of these objects made of corrosion-resistant iron at the Qutb Minar (“KOOT-ub MIN-ar”) during an invasion by Nader Shah. One of these objects made of sandstone at Sarnath (“SAR-not”) was originally topped with an abacus and lion capital. Like similar rock inscriptions, “major” and “minor” examples of these objects describe a 3rd-century ruler’s remorse for the Kaliṅga War and embrace of the dharma. For 10 points, Buddhist edicts were promulgated by Ashoka Maurya on what objects that resemble Egyptian obelisks?

ANSWER: **pillar**s [or **column**s; accept **pillar** edicts or **Pillar**s of Ashoka; accept Iron **pillar** of Delhi or Iron **pillar** at Mehrauli; accept Lumbini **pillar** inscription; prompt on inscriptions or edicts by asking “recorded on what objects?”; prompt on monoliths or poles; prompt on steles or stelae; prompt on monuments or similar; prompt on rocks or stones until “rock” is read; reject “towers” or “minarets”]

<Other History>

TB. It’s not by Spinoza, but in a series of letters about this book’s author, Germaine de Staël (“stahl”) claimed it was written with “the method of geometricians” by “[reducing] political problems to calculation.” This book’s opening chapter claims that order “is a sacred right that serves as foundation for all others.” This book criticizes the idea that slaves willingly “alienate” their freedom, as put forth by Hugo Grotius. This book holds that people escape the state of Nature by surrendering some of their rights to a government that embodies the “general will.” This book was written by a self-described “Citizen of Geneva.” For 10 points, the line “Man is born free, and everywhere he is in chains” opens what political treatise by Jean-Jacques Rousseau?

ANSWER: *The* ***Social Contract*** [or *On the* ***Social Contract****; or, Principles of Political Right*; or *Du* ***contrat social****; ou, Principes du droit politique*]

<TB (Philosophy)>

Bonuses

1. Answer the following about the Lehigh (“LEE-high”) Valley, an important site of early American industrialization, for 10 points each.

[10e] The Lehigh Valley was a center for the mining of the anthracite form of this resource, which was both transported by and used to power steam trains.

ANSWER: **coal** [accept anthracite **coal**; prompt on fossil fuels; prompt on sedimentary rocks]

[10m] In managing both mining and shipment, the Lehigh Coal & Navigation Company was an early example of this business practice, in which every part of the supply chain is controlled by a single company.

ANSWER: **vertical integration** [accept **vertical monopoly**; prompt on integration; prompt on monopoly or monopolization; reject “horizontal integration”]

[10h] Steel for the Empire State Building, Rockefeller Center, and many other skyscrapers came from this city in the Lehigh Valley. Charles Schwab was the president of a steel company named for this city, which is east of Allentown.

ANSWER: **Bethlehem** [accept **Bethlehem** Steel or **Bethlehem** Steel Corporation]

<American History>

2. Answer the following about accidents involving the Beechcraft Bonanza, which has been in continuous production for longer than any other aircraft, for 10 points each.

[10h] Don McLean’s song “American Pie” uses the phrase “The Day the Music Died” to refer to a Bonanza crash that killed Buddy Holly, The Big Bopper, and this musician who helped lay the groundworks for Chicano rock with his hit rock ‘n’ roll version of the folk song “La Bamba.”

ANSWER: Ritchie **Valens** [or Richard Steven **Valenzuela**]

[10m] While recovering from a 1981 Bonanza crash, this former Atari engineer re-enrolled at UC Berkeley. This inventor of the first programmable universal remote designed the I and II models of an early personal computer.

ANSWER: Steve **Wozniak** [or Stephen Gary **Wozniak**; prompt on “Woz”]

[10e] A 2014 round-the-world charity flight by a Pakistani father and son started in this US state but ended when their Bonanza crashed near American Sāmoa. This Midwestern state’s Purdue University funded Amelia Earhart’s round-the-world flight.

ANSWER: **Indiana** [or **IN**]

<Other Academic>

3. This author alluded to his love of cricket in a scene in which a pianist is interrogated with questions like “who watered the wicket in Melbourne?” For 10 points each:

[10e] Name this British playwright of *The Dumb Waiter*, who wrote of Goldberg and McCann’s harassment of Stanley Webber in his play *The Birthday Party*.

ANSWER: Harold **Pinter**

[10m] To describe the sinister undertones present in many of Pinter’s early plays, the critic Irving Wardle coined a genre named for “comedies of” this concept.

ANSWER: **menace** [accept comedies of **menace**]

[10h] During the title event in *The Birthday Party*, Goldberg and McCann force Stanley to participate in this game, which concludes with Stanley attacking Lulu after the lights go out.

ANSWER: **blind man’s buff** [accept **blind man’s bluff**]

<British Literature>

4. The cities of Kurkat, Istaravshan (“eess-tah-RAHV-shahn”), and Khujand (“HOH-jond”) in modern-day Tajikistan may correspond to this ruler’s namesake city, which he founded as a garrison along his empire’s northeastern frontier. For 10 points each:

[10m] Name this king of Anshan, a son of Cambyses I who allied with the Amyrgians against the Sakā with pointed caps. This shahanshah created satrapies in Arachosia (“air-uh-KOH-see-uh”) and Bactria after he conquered the Medes.

ANSWER: **Cyrus** the **Great** [or **Cyrus II**; or **Cyrus** the **Elder**; accept **Kūruš** or **Kỹros** in place of “Cyrus”; accept **Cyropolis** or **Kyroúpolis** or **Kurush** or **Kuruškaθa**; prompt on Cyrus or Kūruš or Kỹros] (The Amyrgians are also called the Sakā haumavargā and the “Sakā with pointed caps” are the Sakā tigraxaudā.)

[10h] Herodotus claims that this queen of the Massagetae (“mah-sah-GAY-tay”) rejected Cyrus’s marriage proposal and cut off his head after he crossed the Jaxartes (“jack-SAR-teez”) and killed her son. Uzbekistan, Kazakhstan, and Azerbaijan adopted her as a national hero.

ANSWER: **Tomyris** [or **Tómuris** or **Tomris** or **Tomiride**]

[10e] Tomyris’s Massagetae supposedly got drunk on Cyrus’s wine because they only drank this beverage, which Central Asian nomads fermented into kumis despite their lactose intolerance.

ANSWER: **milk** [accept mare’s **milk** or donkey’s **milk**; accept **yogurt** or **ayran**; prompt on dairy]

<Other History>

5. One of these two quantities, and the multiplicity of the other, are signified by the two top-left entries in a term symbol. For 10 points each:

[10h] What two quantities, which share a unit, affect each other in an interaction named after Russell and Saunders?

ANSWER: **spin** AND **angular momentum** [accept **spin** angular momentum or ***S*** in place of “spin”; accept orbital **angular momentum** or ***L*** in place of “angular momentum”; accept **spin-orbit** coupling; accept answers in either order]

[10e] That interaction, spin-orbit coupling, is often demonstrated with a model of an atom of this element, which consists of a single electron orbiting a proton.

ANSWER: **hydrogen** [or **H**; accept **hydrogen** atom]

[10m] For spin one-half particles, spin-orbit coupling can be calculated using this equation, whose publication in 1928 made it the first equation to fully combine the effects of quantum mechanics and special relativity.

ANSWER: **Dirac** equation

<Physics>

6. This religious action includes both an external and an internal component, the latter of which refers to minimization of the passions. For 10 points:

[10h] Sallekhana (“suh-LAY-kuh-nah”) is what general type of action? Practitioners also engage in a less intensive variety of this practice in the leadup to Paryushana (“pur-YOO-shuh-nuh”).

ANWER: **fast**ing [or descriptions of **not eat**ing or **abstain**ing from food or equivalents; accept **starvation** or word forms like **starve**]

[10e] Paryushana is a major holiday for this religion that has a “white-clad” subdivision and practices ahimsa, or nonviolence.

ANSWER: **Jain**ism [or **Jain**s]

[10m] Sallekhana, or fasting until death, was revived in the 20th century by monks of this Jain sect. This “sky-clad” division of Jainism, which is often contrasted with ​​Śvētāmbara (“shweh-TAHM-buh-ruh”), holds that women cannot attain moksha.

ANSWER: **Digambar**a (“dig-UM-buh-ruh”)

<Religion>

7. In this play, characters including Caloniki and Lampito vow not to “take the pose of a lioness on a cheese grater” while swearing an oath on a wine skin. For 10 points each:

[10m] Name this play in which a group of women attempts to stop the Peloponnesian War.

ANSWER: ***Lysistrata***

[10e] *Lysistrata* is a comedy by this ancient Greek playwright of *The Birds* and *The Clouds*.

ANSWER: **Aristophanes**

[10h] At this event in another Aristophanes play, a man threatens what he believes to be a baby, only to learn that it is just a wine skin. A character cross-dresses to infiltrate this event so that he can spy on a group of women and learn what they think about him.

ANSWER: **Thesmophoria** Festival [accept ***Thesmophoria****zusae* or *Women at the* ***Thesmophoria*** or *Women Celebrating the Festival of the* ***Thesmophoria***]

<European Literature>

8. In a painting by this artist, Plato and Aristotle gesture in different directions. For 10 points each:

[10e] Name this Italian artist of *The School of Athens*.

ANSWER: **Raphael** [or **Raffaello** Sanzio or Raffaello **Sanzio** da Urbino or Raffaello **Santi**]

[10m] Marcantonio Raimondi collaborated with Raphael to produce *The Massacre of the Innocents* using this intaglio printing technique that typically uses metal plates. Though better known for his woodcuts, Albrecht Dürer used this technique to create *Melencolia I*.

ANSWER: **engraving** [or **Gravur** or **incisione**; reject “lithography”; reject “etchings”; reject “relief printing”]

[10h] Raimondi also made an engraving that draws on this large final painting by Raphael, whose upper section depicts a white-robed Christ between Moses and Elijah.

ANSWER: *The* ***Transfiguration*** [or *The* ***Transfiguration*** *of Christ*; or *La* ***Trasfigurazione***]

<Painting & Sculpture>

9. This quantity is equal to 0 for an ice-water system at 0 degrees Celsius. For 10 points each:

[10e] Name this thermodynamic quantity that decreases for spontaneous reactions. Enthalpy minus temperature times entropy equals this quantity named after an American scientist.

ANSWER: **Gibbs free energy** [prompt on free energy; prompt on G or delta G]

[10m] The molar Gibbs free energy for a one-component system is equal to this quantity. This quantity, usually denoted “mu,” represents the change in free energy from adding a particle to a system.

ANSWER: **chemical potential** [reject “potential”]

[10h] For a second-order phase transition in the Ehrenfest classification, the second derivative of chemical potential with respect to temperature has this mathematical property, while the first derivative does not.

ANSWER: **discontinuous** [or **non-continuous** function or equivalents]

<Chemistry>

10. A Christine Korsgaard collection titled for “Creating” this place discusses a different philosopher’s view that humans see themselves as a source of value by conferring value on other things. For 10 points each:

[10h] Name this place that consists solely of rational beings. A 1785 book conceived of this hypothetical place that only judges people by laws of universal necessity.

ANSWER: **Kingdom** of **Ends** [or **Reich** der **Zwecke**; accept **Realm** of **Ends**; accept *Creating the* ***Kingdom*** *of* ***Ends***]

[10e] The Kingdom of Ends is proposed in this German philosopher’s book *Groundwork of the Metaphysics of Morals*, which introduced his idea of the categorical imperative. This thinker wrote the *Critique of Pure Reason*.

ANSWER: Immanuel **Kant**

[10m] Kant’s ethical theory falls under this branch of ethics, which holds that an action’s morality should be judged by the action itself, rather than its consequences. As such, this branch of ethics is contrasted with consequentialism.

ANSWER: **deontological** ethics [or word forms such as **deontology** or **deontologist** ethics]

<Philosophy>

11. Species of *Clostridium* variably take up the dye in this procedure, though laboratory strains are usually positive. For 10 points each:

[10e] Name this fundamental microbiology stain that uses the dye crystal violet. Bacteria that are positive for this stain have a lot of peptidoglycan in their cell walls, while those that are negative for this stain appear pink.

ANSWER: **Gram** stain [or **Gram**’s method; accept **Gram**-positive bacteria or **Gram**-negative bacteria]

[10m] Gram stains are inconsistent for members of this genus, which includes the causative agents of TB and leprosy. Members of this genus have a waxy cell wall that shows up under an acid-fast stain.

ANSWER: ***Mycobacterium*** [accept ***Mycobacterium*** *tuberculosis*; accept ***Mycobacterium*** *leprae*; reject “*Mycoplasma*”]

[10h] The final step of Gram staining involves adding either fuchsin or this dye, which contains a diaminophenazine (“di-amino-phen-azine”) motif and counterstains Gram-negative species red.

ANSWER: **safranin** [or **safranin** O]

<Biology>

12. In the aftermath of the breakup of the USSR, this thinker wrote the *Foreign Affairs* article “The Case for a Ukrainian Nuclear Deterrent.” For 10 points each:

[10h] Name this “offensive realist” IR scholar who wrote *The Tragedy of Great Power Politics*.

ANSWER: John **Mearsheimer** [or John Joseph **Mearsheimer**]

[10e] Mearsheimer and Stephen Walt wrote a controversial book about the American lobby for this country, which they say consists not only of a subset of Jewish people but also Christian Zionists and various conservatives.

ANSWER: **Israel** [or State of **Israel** or Medīnat **Yīsrāʾēl** or Dawlat **ʾIsrāʾīl**; accept *The* ***Israel*** *Lobby and U.S. Foreign Policy*]

[10m] Mearsheimer has investigated this phenomenon, in which states exert power over other states through economic and social means. Antonio Gramsci (“GRAHM-shee”) defined the “cultural” form of this phenomenon.

ANSWER: **hegemon**y [or word forms like **hegemonic**; accept cultural **hegemony** or **egemonia** culturale]

<Social Science>

13. A map created by Östen Dahl suggests that this province’s maritime traders introduced the Mǐn Nán word “te” (“tay”) to Sinhalese and Javanese rather than the Mandarin “chá” that spread overland. For 10 points each:

[10h] Name this Chinese province, the origin of Malaysia’s Hokkien (“HAH-kee-en”)-speaking Peranakan (“puh-RAH-nuh-con”) diaspora. Incense wood was found in a 13th-century shipwreck from this province’s city of Quánzhōu (“ch’wen-joh”), the Sòng dynasty’s main emporium.

ANSWER: **Fújiàn** (“foo-j’yen”) [or **Fújiàn** Shěng or **Fukien**]

[10e] Emperor Zhēnzōng (“jun-dzong”) disseminated Châmpa’s drought-resistant variety of this crop north from Fújiàn (“foo-j’yen”). Tai migrations spread this crop’s wet paddy cultivation to mueang (“moo-ahng”) in Lan Na and Laos.

ANSWER: **rice** [or ***Oryza*** *sativa*; or **dào**; accept **rice** paddies or wet **rice** cultivation; accept Châmpa **rice**]

[10m] Fújiàn’s costly imports of Taiwanese rice led to copper shortages that inspired jiāozǐ (“j’yow dzih”) made of this material. Cài Lún (“tsai l’wun”) invented this material, which supposedly spread west after the Battle of Ṭalās.

ANSWER: **paper** [accept **paper** money; accept **paper**making; or **zhǐ**; reject “papyrus”]

<World History>

14. Typical Guinean ensembles of these instruments consist of six musicians playing cycles of beats at different pitches that result in complex polyrhythms. For 10 points each:

[10e] Name this general class of percussion instruments that players strike with their hands or mallets to produce sound.

ANSWER: **drum**s [accept **dundun**; accept, BUT DO NOT OTHERWISE REVEAL, **djembe** or variants like **jenbe**, **djimbe**, **jimbe**, or **dyinbe**]

[10h] Along with dundun, these goblet drums with a hardwood body and rawhide drumhead make up traditional Guinean and Malian drum ensembles.

ANSWER: **djembe** [or variants like **jenbe** or **djimbe** or **jimbe** or **dyinbe**]

[10m] For the djembe, this action can be done by twisting the vertical ropes on the side of the drum. Scordatura refers to adjusting how this action is done.

ANSWER: **tuning** [or word forms like to **tune**; accept adjusting the **pitch** or **frequency** of an instrument or equivalents]

<Classical Music>

15. In an anthology whose title popularized this term, Dora Ahmad praises how literature described by this term “can escape the control of its own creator.” For 10 points each:

[10h] Give this two-word term coined by Ken Saro-Wiwa to describe the vernacular language used in his novel *Sozaboy*.

ANSWER: **Rotten English**

[10e] Kamau (“kuh-MAO”) Brathwaite’s essay “History of a Voice,” which was collected in *Rotten English*, contrasts “imperial” English with the “nation language” used by authors from many islands in this sea, such as Derek Walcott.

ANSWER: **Caribbean** Sea [or **Kiaribiyan** Sii or Mar **Caribe** or Mer des **Caraïbes**]

[10m] *Rotten English* includes a piece by M. NourbeSe Philip, a Tobago-born author from this country. A Sri Lankan-born author from this country set a novel about the badly-burned adventurer Almasy during World War II.

ANSWER: **Canada** (The latter novel is *The English Patient* by Michael Ondaatje.)

<World Literature>

16. These figures cause a tree to grow with a group of men in it and turn them into monkeys when they try to climb down. For 10 points each:

[10m] Name these mythological figures, one of whom is decapitated while in the Bat House in the realm of Xibalba.

ANSWER: Mayan **Hero Twins** [accept **Hunahpu** AND **Xbalanque** (“hoo-nah-POO and sh’bah-lang-KAY”) or **Xbalanque** AND **Hunahpu**]

[10h] The Hero Twins are burned to death by the lords of Xibalba (“shih-BALL-bah”) before regenerating into these animals and then humans. In Shintō myth, one of these animals called the Namazu causes earthquakes by thrashing about.

ANSWER: **catfish** [or **silurid**s or **Siluriformes**; accept specific catfish species; prompt on fish or ray-finned fish]

[10e] Before going to Xibalba, the Hero Twins plant this crop in their house, telling their grandmother it will dry up if they die. The Mayan gods use this staple crop to create humanity.

ANSWER: **maize** [or **corn**; or ***Zea*** *mays*; accept **teosinte** or **ixim**; accept **aj**]

<Mythology>

17. Name these American authors who were influenced by the Beatles, for 10 points each.

[10e] The fictional song “I Want to Kiss Your Feet” and a band of teenaged Beatles wannabes called The Paranoids appear in *The Crying of Lot 49*, a novel by this reclusive postmodern author of *Gravity’s Rainbow*.

ANSWER: Thomas **Pynchon** [or Thomas Ruggles **Pynchon**]

[10m] This essayist of *Slouching Towards Bethlehem* claimed that “we tell ourselves stories in order to live” in her collection *The White Album*, which she titled after a Beatles album.

ANSWER: Joan **Didion**

[10h] This author recorded a spoken-word album for the Beatles’ short-lived avant-garde label Zapple. A novel by this author describes the post-apocalyptic commune iDEATH, which is made up of the title substance.

ANSWER: Richard **Brautigan** [or Richard Gary **Brautigan**] (The novel is *In Watermelon Sugar*.)

<American Literature>

18. Marino Faliero’s plan to lead a coup against this city involved stoking public fears of a Genoese invasion. For 10 points each:

[10e] Name this Italian city whose doges lived in a palace in Saint Mark’s Square.

ANSWER: **Venice** [or **Venezia**; or Most Serene Republic of **Venice**; or La **Serenissima**]

[10h] Prior to becoming doge, Faliero served in this body that secretly monitored the activities of all Venetians. Citizens could submit information to this body by placing letters in *bocche di leone* (“BOKE-kay dee lay-OH-nay”).

ANSWER: Council of **Ten** [or the **Ten**; or Consiglio dei **Dieci** or Consejo de i **Diexe**]

[10m] Faliero succeeded a doge from this family named Andrea. Another doge from this family with the first name Enrico forced soldiers on the Fourth Crusade to sack Zara in order to repay Venice.

ANSWER: **Dandolo** [or House of **Dandolo**; accept Enrico **Dandolo**; accept Andrea **Dandolo**]

<European History>

19. By definition, the roots of cyclotomic (“sike-loh-TOM-ick”) polynomials are “primitive” examples of these numbers. For 10 points each:

[10m] Name these complex numbers, the *n*th examples of which are given by the formula [read slowly] “*e* to the power 2 pi *i* *k* over *n*” for integers *k*, and are equally spaced around a circle of radius 1.

ANSWER: **root**s **of unity** [or *n*th primitive **root**s **of unity**; accept **de Moivre** numbers]

[10e] The *n*th cyclotomic polynomial is simply the sum of the first *n* powers of *x* when *n* has this property of being divisible only by one and itself.

ANSWER: **prime** number [accept **primality**]

[10h] Cyclotomic polynomials can be expressed as rational functions using this mathematician’s “inversion formula.” That formula uses this mathematician’s namesake function, which takes on values of minus 1 or 1 for squarefree inputs.

ANSWER: August Ferdinand **Möbius** [accept **Möbius** inversion formula; accept **Möbius** function]

<Other Science>

20. Tom Scutt’s set design for a 2022 revival of this musical mimics its setting by having audiences walk through a flurry of dancers after entering the Playhouse Theatre from a side door. For 10 points each:

[10m] Name this musical that opens with the Emcee greeting the audience in German, French, and English. A Christopher Isherwood collection indirectly inspired this Kander and Ebb musical about the Kit Kat Klub.

ANSWER: ***Cabaret***

[10e] Rebecca Frecknall’s revival of *Cabaret* for this European city’s West End theatre scene, which starred Jessie Buckley as Sally Bowles and Eddie Redmayne as the Emcee, swept this city’s 2022 Olivier (“oh-LIV-ee-ay”) Awards.

ANSWER: **London** [accept Society of **London** Theatre]

[10h] In Frecknall’s revival, identical statues of soldiers revolve on a turntable as the Emcee, in Nazi attire, sings a song titled for how this thing “belongs to me.”

ANSWER: **tomorrow** [accept “**Tomorrow** Belongs to Me”]

<Other Fine Arts (Musical Theatre)>

TB. Answer the following about the Shockley equation, for 10 points each.

[10m] The Shockley equation describes the operation of these devices in either forward or reverse bias. These devices can consist of a single p–n junction.

ANSWER: **diode**s

[10e] For a diode, the Shockley equation relates the current to this quantity, which equals current times resistance by Ohm’s law.

ANSWER: **voltage** [or **potential** difference or electric **potential**; accept **electromotive force** or **emf**; prompt on V]

[10h] The Shockley equation includes the ratio of the standard voltage to a type of voltage named for this adjective. Some forms of the Sackur–Tetrode equation include the cube of a variant of the de Broglie (“duh broy”) wavelength named for this adjective.

ANSWER: **thermal** [accept **thermal** voltage; accept **thermal** de Broglie wavelength]

<TB (Physics)>