

2020 ACF Winter

Packet G by Cornell A, Georgia Tech A, McMaster A, Penn State A

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Tossups

1. The protagonist of this novel believes a false claim about a new law which decrees that the Sun is highest at one o'clock. A man in this novel who overhears a conversation about a broken thermometer takes off his boots to mop the floor. A character in this novel rejects his wife's advice to get rich from carpet-making and goes to sleep thinking about a stolen chunk of steel that he can make into a knife. In this novel, the foreman Der becomes furious upon seeing the roofing-felt used to cover a window by Kilgas and the protagonist, who hides bread in his mattress. In this novel, Shukhov works with Tyurin and Alyosha the Baptist as part of Gang 104. For 10 points, name this novel describing the experiences of the title character in a Soviet gulag by Aleksandr Solzhenitsyn.

ANSWER: *One Day in the Life of Ivan Denisovich* [or *Odin den' Ivana Denisovicha*]

<European Literature>

2. This thinker contrasts the singular "thinking of the event" with the repetitive "thinking of the machine" in the essay "Typewriter Ribbon." This thinker claimed that less violence would be achieved by the maximal openness of "unconditional hospitality." Irreplaceable singularity and iterability are inseparable in this thinker's "basic argumentation." J. L. Austin's theory of illocutionary acts was attacked in this thinker's "Signature Event Context," which was in turn criticized by John Searle ("surl"). The linguistic theories of Saussure ("so-SUR") and Rousseau ("roo-SO") are discussed in a book by this thinker that coined a term that puns on the words for "deferral" and "difference" and reflects his privileging of writing over speech. For 10 points, name this deconstructionist French philosopher who wrote *Of Grammatology*.

ANSWER: Jacques **Derrida** [or Jackie Elie **Derrida**]

<Philosophy>

3. A musician with this last name met Moe Asch a year after he published his autobiography *Bound for Glory*. Billy Bragg and Wilco set lyrics by a musician with this surname to music on the album *Mermaid Avenue*. Another musician with this surname was not chosen for the draft due to his criminal record for littering, which inspired his 18-minute-long song "Alice's Restaurant." A musician with this surname played a guitar scrawled with the message "this machine kills fascists" and frequently collaborated with Pete Seeger. That musician, who had a son with the first name Arlo, wrote a song describing a place "from California to the New York Island." For 10 points, give this surname of the folk singer Woody, who wrote "This Land is Your Land."

ANSWER: **Guthrie** [accept Woody **Guthrie**, Arlo **Guthrie**, Woodrow Wilson **Guthrie**, or Arlo Davy **Guthrie**]

<Other Arts>

4. This property names sets of protecting groups that can be deprotected independently. This property of the Bloch functions implies that it holds for Wannier functions at different lattice sites. Carolyn Bertozzi prefixed this property with “bio” to describe “click” chemistry that does not disturb living systems. When the orbital quantum number equals zero, this property of the hydrogen atom’s spherical harmonics makes an integral vanish. Eigenfunctions of a Hermitian (“her-MISH-un”) operator have this property, which holds if the integral over all of space of their product equals zero. Points with this property are stretched to form Bravais (“bra-VAY”) lattices with a “rhombic” crystal system. Two vectors have this property if their dot product equals zero. For 10 points, what word describes two perpendicular vectors?

ANSWER: **orthogonality** [accept mutually **orthogonal**; accept bio**orthogonal** chemistry or **orthorhombic** lattices; accept **orthogonal** tRNAs; accept **orthogonal** protection; accept **orthonormal**, but do not accept or prompt on “normal”; prompt on **perpendicular** until read]

<Chemistry>

5. One of these figures hangs the head of Annwre from a saddle after leading Sir Tristram to the Forest Perilous. A man is pursued by Sir Lanceor of Ireland after beheading one of these figures, who demanded the killing of that man, Balin. A figure with this epithet studies under Merlin until she has to resist his sexual advances by trapping him under either a huge rock or a hawthorn tree. After the death of King Ban, a figure with this epithet raises Lancelot. In *Le Morte d’Arthur*, there are two figures with this epithet, one unnamed and one named Nimue; in other sources, one of these figures is named Viviane. One of these figures helps King Arthur after he fights King Pellinore and breaks his sword. For 10 points, give this title of the figure who gifts Arthur his sword, Excalibur.

ANSWER: **Lady of the Lake** [accept **Viviane** or **Nimue** until read; directed prompt on **lady**, **nymph**, **sorceress**, **wizard**, **witch**, **magician** or similar by asking “what epithet did they have?”]

<Mythology>

6. A character in this novel creates a wooden sculpture of himself, whose appearance after his death causes his rival to flee with fear. That character’s father-in-law leads a man out of a stone maze. In this novel, a barbarian leader is captured and freed seven times before finally surrendering. A leader in this novel visits the thatched cottage of a man nicknamed Sleeping Dragon three times in order to recruit him into that leader’s service. Determined to protect their nation from the Yellow Turban rebels, three characters in this novel swear an oath in a peach garden. For 10 points, the real-life characters Zhūgé Liàng (“joo-guh lyong”), Liú Bèi (“l’yoh bay”), and Cáo Cāo (“tsao tsao”) appear in what Luó Guànzhōng novel that is set during an eponymous period of Chinese history?

ANSWER: **Romance of the Three Kingdoms** [or **Sānguó Yǎnyì**]

<World/Other Literature>

7. In this decade, thousands of Indigenous children in Canada were “scooped” from their homes and adopted by white families. Near this decade’s beginning, doctors in Saskatchewan went on strike after universal health care was introduced. Jean Lesage’s election as a member of the Liberal Party at the beginning of this decade ushered in the Quiet Revolution. During this decade, Canada adopted the maple leaf flag design and celebrated its centennial under Lester Pearson. In this decade, the statement “Vive le Québec libre!” was made by Charles de Gaulle at the World Expo in Montreal. Near the end of this decade, Pierre Trudeau first became Prime Minister. For 10 points, name this decade when many draft dodgers fled to Canada to avoid serving in the Vietnam War.

ANSWER: **1960s** [or the **Sixties**]

<Other History>

8. A melody used by one composer for two pieces in this genre begins with the notes [read slowly] G, G C, C B-flat A, [pause] G. A piece in this genre named for the Duke of Ferrara used solmization to produce the melody in the first use of the compositional technique *sogetto cavato* (“so-JET-oh kah-VAH-toh”). A piece in this genre consisting entirely of mensuration canons is one of the best-known works of Franco-Flemish composer Johannes Ockeghem. A *cantus firmus* called “L’homme armé” (“LUM ar-MAY”) was used for many of Josquin des Prez’s (“zho-SCAN deh PRAY’s”) works in this genre, while one written by Palestrina for Pope Marcellus II is often apocryphally credited with “saving polyphony.” The “Kyrie” (“KEE-ree-ay”) and “Agnus Dei” are sections of, for 10 points, what genre in which the liturgy of the Roman Catholic eucharist is set to music?

ANSWER: **masses** [accept *missae* and *messe*; do not accept or prompt on “requiem mass” or “mass for the dead”]
<Classical Music>

9. A historical treatment for this disease could lead to grey-colored skin known as chrysiasis (“kris-SIGH-uh-siss”) due to lingering gold particles. The severity of this disease can be quantified with disease activity scores. The first fully human mAb made by phage display was first approved to treat this condition, and its brand name includes this condition’s acronym as a suffix. The JAK1 inhibitor upadacitinib can be prescribed to treat this condition, and is thus classified as a DMARD along with some TNF-alpha inhibitors. This disease can be predicted by measuring a high concentration of anti-CCP antibodies, which target citrullinated proteins. This disease, which can manifest with Z-thumb and swan-neck deformities, results from attacks on the synovium. For 10 points, name this autoimmune condition that causes swelling in joints.

ANSWER: **rheumatoid arthritis** [or **RA**; prompt on *arthritis*; prompt on *Humira*]
<Biology>

10. A chess champion from this country was imprisoned for ridiculing its leader with the nickname “Scumbag.” Protestors in this country overwhelmingly voted for abolishing its Senate in the fraudulent “Three Times Yes” referendum. A dictator of this country always wore sunglasses after getting snow blindness. The Orange Alternative protested this country’s government by painting graffiti of dwarves. A former electrician was elected to this country’s presidency a decade after leading protests at the Lenin Shipyard. That electrician participated in the Round Table Talks that ended this country’s Communist rule. For 10 points, name this country led by Lech Wałęsa (“vah-WEN-sah”), the site of the signing of the Warsaw Pact.

ANSWER: **Poland** [or People’s Republic of **Poland**; or **Polska** Rzeczpospolita Ludowa]
<European History>

11. A poem [emphasize] *titled* after this author tells “the morning / to ease her into a water-fall of dreams,” and calls this author a “sister called life.” A poem [emphasize] *by* this author asks “Why should I whine, / whine that the crime was other than mine?” The last stanza of that poem by this author states “Believe me, I loved you all” and begins “abortions will not let you forget.” This author described a room “full of beads and receipts and dolls and cloths” in a poem that describes an “old yellow pair” for whom “dinner is a casual affair.” This author’s most famous poem is set at a bar called the Golden Shovel and describes pool players who “sing sin,” “jazz june,” and “die soon.” For 10 points, name this African American author of “The Bean Eaters” and “We Real Cool.”

ANSWER: Gwendolyn **Brooks** (The unnamed poems are “For Sister Gwen Brooks” by Sonia Sanchez and “The Mother.”)
<American Literature>

12. Carl McIlwain's namesake coordinates describe motion using the strength of this phenomenon and a characteristic L-shell parameter. Particles in the presence of this phenomenon may run into a "mirror point" where they reverse direction. Bohm diffusion occurs at a rate inversely proportional to the strength of this phenomenon. The loss cone is defined by the angle between a particle's velocity and this phenomenon, the pitch angle. Cowling's theorem limits the possible symmetries of these phenomena when they are generated by dynamos. This phenomenon for the Earth is oddly weak at the South Atlantic Anomaly and confines the Van Allen belts. For 10 points, charged particles travel in a curved path when under the influence of what phenomenon, which for the Earth has a strength of between 0.25 and 0.65 gauss?

ANSWER: **magnetic field** [accept **B field**; accept geom**magnetic field** or Earth's **magnetic field** or planetary **magnetic field**; prompt on magnetosphere on B]

<Physics>

13. This author wrote about how a "one-hired box should make him pretty sure / He warranted better, I don't know" in a poem about the death of a boarding-house lodger. This poet included "Mr. Bleaney" in a collection titled for a poem that describes "girls in parodies of fashion" and claims that fifty minutes is just enough time "to settle hats and say *I nearly died*" during a trip in a "three-quarters empty train." Another poem by this author describes "fools in old-style hats and coats" who are "at one another's throats." That poem by this author advises the reader to "get out as early as you can, and don't have any kids yourself," and opens with the line "They fuck you up, your mum and dad." For 10 points, name this poet of "The Whitsun Weddings" and "This Be the Verse."

ANSWER: Philip **Larkin** [or Philip Arthur **Larkin**]

<British Literature>

14. This state's 1931 "Lemon Grove Incident" was the US's first successful school desegregation case. LULAC and the JACL aided this state's 1947 desegregation case *Méndez v. Westminster*. This state's 1885 case *Tape v. Hurley* concerned a school later renamed for Gordon J. Lau, one of its first non-white city supervisors. Sherman Indian School assimilated this state's Cahuilla, Pomo, and Chumash ("CHOO-mahsh") people. This state's isolationist Progressive Senator Hiram Johnson backed the 1924 Immigration Act. Denis Kearney led the racist Workingmen's Party in this state, the site of Camp Tule ("TOO-lee") Lake. The Burger court upheld affirmative action in this state's case *Regents v. Bakke*. Immigrants entered this state via Angel Island after the passage of an 1882 "Exclusion Act." For 10 points, what state contains the US's oldest Chinatown?

ANSWER: **California** [or **CA**]

<American History>

15. *Note to moderator: Read the answerline carefully.* A ritual for IDF soldiers uses a version of this practice's prayer El Malei Rachamim ("EL ma-LAY RA-khah-meem"). Chapter 4, verse 3 of a book named for this practice claims, "Even jackals offer their breasts to nurse their young, but my people have become heartless like ostriches in the desert." "Three Weeks" of this practice include reciting Kinnot ("kee-NOTE"). Jews may perform this practice by lighting the annual Yahrzeit ("YORT-site") candle. This practice's aninut ("ah-nee-NOOT") phase features the keriah ("kree-AH") ritual of tearing clothes that are worn while sitting shiva ("SHIV-uh"). This practice names a biblical book attributed to Jeremiah that decries the 587 BCE siege of Jerusalem and is read on Tisha B'Av ("teesh-AH buh-AHV"). Christians nicknamed Jerusalem's Western Wall for this practice, which, for parents, obliges 11 months of daily Kaddish. For 10 points, what practice often follows a loved one's funeral?

ANSWER: **lamentation** [or **grieving**; or **mourning** the dead; or **bereavement**; or similar; accept **weeping** or **wailing** or **crying** or **keening** or similar; accept the Book of **Lamentations** or **Eikhah**; accept the **Mourners'** Kaddish; accept the **Wailing** Wall; accept **dirges** or **elegies** or **eulogies** or similar; prompt on **funerals** or **burials** or **deaths** or similar; prompt on **remembrance** or **memorial** or similar; prompt on **Kaddish** or **prayer** by asking "as part of what more general practice?"]

<Religion>

16. A consequence of the generation of these substances is described in the Twomey effect. One of the nine planetary boundaries is the “loading” of these substances, whose optical depth can be measured with an MFRSR. A highly researched subfield of atmospheric science focuses on the interactions of these substances and clouds, as they cause increased cloud formation by acting as the major source of anthropogenic (“an-thro-po-JEN-ick”) cloud condensation nuclei. One of the most light-absorbing examples of these pollutants is black carbon, or soot. These substances were generated in a spray by CFCs before those chemicals were banned for atmospheric damage. For 10 points, name these colloids, suspensions of small solid or liquid particles in the air.

ANSWER: atmospheric **aerosols** [or **particulate matter** or **PM**; accept **soot** or **black carbon** aerosols until read; accept **aerosol** loading or **aerosol** optical depth or **aerosol** sprays; accept primary or secondary organic **aerosols**; prompt on air **pollutants** until read; directed prompt on **cloud** droplets or **cloud condensation nuclei** or **CCNs** until read by asking “what type of pollutants most often serve as cloud condensation nuclei?”]

<Other Science>

17. Steven Levitsky and Lucan A. Way formulated a “competitive” variant of this trait to explain the distinct trajectories of Zambia and Malaysia. Juan J. Linz’s typology of this “mentality” stresses “an absence of ideology.” Guillermo O’Donnell found that a society’s partial transition from this trait can create a “hybrid.” In a test for this trait, subjects respond to statements like “Familiarity breeds contempt” to assess variables like projectivity. Theodor Adorno created the F-scale to measure this trait and defined “aggression against people who violate conventional values” as part of its “personality.” Libertarianism is opposite this trait on The Political Compass. Governments with this trait control the media and punish the opposition. For 10 points, what trait describes unfree regimes like Franco’s Spain?

ANSWER: **authoritarianism** [accept **fascist** or **totalitarian** or **autocratic**; accept right-wing **authoritarianism** or **RWA**; accept *The Authoritarian Personality*; accept *Totalitarian and Authoritarian Regimes*; prompt on **personality**; prompt on military **dictatorship** or **illiberal** democracy or **non-democratic** or **right-wing**; accept “Competitive **Authoritarianism**”; accept *Transitions from Authoritarian Rule*]

<Social Science>

18. The death of this city’s ruler Toghtekin led to a string of ineffective leaders that caused the downfall of the Burids. In an 1840 affair named for this city, the disappearance of the monk Father Thomas led to accusations of blood libel against Jews. Abd al-Rahman I fled this city before founding the Emirate of Cordoba. Nur ad-Din captured this city in 1154, years after a failed siege of it that ended the Second Crusade and centuries after Mu’awiyah I moved his court here. This city lends its name to a type of wavy-patterned, notoriously strong steel. After the Battle of the Zab in 750 CE, the Abbasids moved the capital from this city to Baghdad. For 10 points, name this city, the capital of the Umayyad Caliphate and modern-day Syria.

ANSWER: **Damascus** [accept the Emirate of **Damascus** or the **Damascus** Affair; accept **Damascus** steel]

<World History>

19. Barry Lopez’s book on these animals lists “outlaws” like “Three Toes of Harding County.” This animal appears in an Italian idiom meaning “Good luck.” The extirpated “red” species of these animals has been reintroduced to coastal Texas. Dave Mech has disavowed a book that inspired myths about these animals’ dominance hierarchies. Louis XV sent the army to pursue one of these animals nicknamed the “Beast of Gévaudan” (“zhay-vo-DON”). 19th-century bounties on these animals were often claimed by hunters who trained borzoi and laced caribou carcasses with strychnine (“STRICK-noon”). The La Brea tar pits preserved fossils of their “dire” species. The concept of “ecology of fear” comes from these animals, which prey on moose on Michigan’s Isle Royale (“royal”). For 10 points, name these Holarctic canines that hunt in packs.

ANSWER: **wolves** [or grey **wolf**; prompt on wild **dogs** or **canids** or **canines**; accept timber **wolf**, werew**olf**, red **wolf**, dire **wolf**, or **wolfers**; accept *Of Wolves and Men*; accept “in bocca al **lupo**”; accept Russian **wolfhounds**]

<CE/Geo/Other/Pop Culture>

20. A painting in this artistic style depicts a friend of the artist sitting on his bedside and putting his shoe on, and is titled *Morning, Interior*. A painting in this style depicts an art critic holding a white cyclamen in one hand and a cane and hat in the other against a colorful background described as *Rhythmic with Beats and Angles*. An artist used this artistic style for a painting that depicts a small brown dog in the bottom-left corner and a boy in a red hat swimming in a river. That river was also the setting of a painting in this artistic style that depicts a man in an orange vest reclining and smoking a pipe. That painting in this style also depicts a woman holding an umbrella and walking a monkey on a leash. For 10 points, name this artistic style exemplified by Georges Seurat's *A Sunday Afternoon on the Island of La Grande Jatte*.

ANSWER: **Pointillism** [accept **Neo-Impressionism**; accept **Divisionism**; prompt on **Post-Impressionism**; do not accept or prompt on "Impressionism"] (The painting in the first line is by Maximilien Luce; the second line is Signac's portrait of Félix Fénéon.)

<Painting/Sculpture>

21. A Harlem venue for this practice was founded by Ralph Ellison and Fredric Wertham, who drew on the Marxist Paul Lafargue. Nearly 50 percent of Buenos Aires residents engage in this practice, which Marsha Linehan based on dialectics. Virginia Satir created a form of this practice for families. The book *Games People Play* presents Eric Berne's method for this practice, transactional analysis, which uses the phrase "I'm OK and you're OK." This practice is prefixed by "logo" in a meaning-centered variant created by Viktor Frankl. BPD is often treated by Albert Ellis's "cognitive behavioral" form of this practice, whose "humanistic" approach stresses "self-actualization." For 10 points, Carl Rogers developed a "client-centered" form of what kind of conversational mental health treatment?

ANSWER: psycho**therapy** [or talk **therapy**; or psychological **therapy**; accept **counseling**; accept group **therapy** or family **therapy** or client-centered **therapy** or log**otherapy**; prompt on psycho**analysis**; prompt on **psychiatry** or **psychology**; prompt on **mental health care** or **mental health clinics**]

<Social Science>

Bonuses

1. This king punished his daughters for adultery with Norman knights after the knights were found with embroidered purses given by Isabella of France to her sisters-in-law. For 10 points each:

[10] Name this king who dealt with the aftermath of the Tour de Nesle (“nell”) affair. This king antagonized the Flemish after taking control of Flanders despite a disastrous defeat at the Battle of the Golden Spurs.

ANSWER: **Philip IV** of France [accept **Philip** the **Fair** or **Philippe** le **Bel**; accept the **Iron King** or le **Roi de fer**]

[10] As a result of widespread suspicion of women in power after the Tour de Nesle affair and confusions over Salic law, this English king, the son of Isabella, disputed the throne of France with Philip VI.

ANSWER: **Edward III** [prompt on **Edward**]

[10] Edward III’s claim was strengthened by the fact that the senior line of the Capetian dynasty failed to produce a male heir, leading to this lengthy conflict between England and France.

ANSWER: **Hundred Years’ War**

<European History>

2. Boosting primarily serves to reduce this quantity of a model, which is subject to a tradeoff with variance since decreasing one of them tends to increase the other. For 10 points each:

[10] Name this value that represents a type of error in a model, which is squared and added to irreducible uncertainty and variance to calculate the mean squared error. This value shares its name with a constant threshold often added to a “w dot x” term in the activation function in neural networks.

ANSWER: **bias** [accept the **bias** term or **bias** unit; accept the **bias**–variance tradeoff]

[10] The bias–variance tradeoff can be seen as a tradeoff between two phenomena named for “under-” and “over-” plus this term, in which models either generalize too much or don’t learn enough from training data. The best linear approximation through a set of points is called the “line of best” this term.

ANSWER: **fitting** [accept **overfitting** or **underfitting**; accept line of best **fit**]

[10] The challenges of underfitting and overfitting apply to this broad class of machine learning in which a model learns from labeled training data. When no labeled data is available, learning is called “un-” plus this term.

ANSWER: **supervised** learning [accept **unsupervised** learning]

<Other Science>

3. Maurice Ravel wrote a set of eight “noble and sentimental” pieces of this type for orchestra. For 10 points each:

[10] Name this type of piece that names a “choreographic poem” by Ravel that he originally titled *Vienna* in reference to the many pieces of this type written by Johann Strauss the Younger.

ANSWER: **waltzes** [accept **valse**s, *Valse nobles et sentimentales*, or *La Valse*; prompt on **dance**]

[10] The Princesse de Polignac (“po-leen-YAHK”) was the dedicatee of a Ravel piece in this other dance form, which evokes how the title figure might have “danced at the Spanish court.” Ravel’s mentor Gabriel Fauré (“fo-RAY”) also wrote a celebrated piece of this type in F-sharp minor.

ANSWER: **pavane** [accept *Pavane for a Dead Princess* or *Pavane pour une infante défunte*]

[10] Name *either* of the Baroque dances that form the middle two movements of Ravel’s *Le Tombeau de Couperin*. The first is a mildly dissonant E minor dance in 6/8 time, and the second is a lively C major dance similar to a bourrée (“boo-RAY”).

ANSWER: **forlane** (“for-LAHN”) OR **rigaudon**

<Classical Music>

4. Name some writers who wrote about writing, for 10 points each.

[10] This author's *The Art of the Novel* includes an interview with Christian Salmon in which he asserts that his novels "lie outside the aesthetic of the novel normally termed psychological." This author wrote a novel following Tomáš and Tereza during the Prague Spring.

ANSWER: Milan **Kundera**

[10] *Letters to a Young Novelist* is a writing manual by this author who followed Silva and Lituma in the detective novel *Who Killed Palomino Molero?*. In another novel by this author, the Counselor gains religious followers in Brazil.

ANSWER: Mario **Vargas Llosa** ("YO-sa") [or Jorge Mario Pedro **Vargas Llosa**; prompt on partial surname] (The second novel is *The War of the End of the World*.)

[10] *On Writing*, a book by this author, claims that "most books about writing are filled with bullshit" and details how he writes 10 pages a day. This author wrote *The Shining*.

ANSWER: Stephen **King**

<World/Other Literature>

5. Your Ethiopian friend Faizah has invited you over to her house for dinner. For 10 points each:

[10] While cooking, Faizah describes her family's unique combination of 22 ingredients that are used to produce the spice *berbere*, which her grandfather sells in this capital of Ethiopia.

ANSWER: **Addis Ababa** [or **Finfinne**]

[10] Faizah's father Tedros creates the appetizer of *tihlo*, a dish of dough balls dipped into a combination of meat and *berbere* that is native to the city of Mekelle in this northernmost region of Ethiopia. The third-most widely spoken Semitic language is named for this region.

ANSWER: **Tigray** [accept **Tigrinya** or **Tigre**]

[10] The main course of the evening is a beef curry *wat* served on top of this spongy flatbread. The East African ceremony of *gursha* involves family members feeding each other meals typically wrapped in this bread, which is made from teff flour.

ANSWER: **injera**

<CE/Geo/Other/Pop Culture>

6. The Blackfeet bought giant war shields from this people, whose two-spirit warrior Woman Chief was killed by the Gros Ventre ("groh vont"). For 10 points each:

[10] Name this Siouan "hunting tribe" whose Mountain and River divisions followed No Intestines and Red Scout to Yellowstone in the 16th century. Chief Plenty Coups led this nation against their rivals the Lakota and Cheyenne.

ANSWER: **Crow** people [accept **Apsáalooke** or **Ashkúale** or **Eelalapito** or **Ammitaallahé** or **Binnéssiippele** or any similar answers]

[10] The Crow hunted these animals by chasing them off cliffs called "jumps" like Head-Smashed-In, Five Fingers, Vore, and Ulm Pishkun. Histories called "winter counts" were recorded on the hides of these Great Plains bovines.

ANSWER: American **bison** [or American **buffalo**; or **tatanka** or variants; accept **buffalo** jumps or **bison** jumps]

[10] This state's Jones-Miller, Olsen-Chubbuck, and Jurgens bison kill sites suggest that Plains peoples engineered corrals for game drives. The Mesa Verde cliff dwellings are in this state, where the Arapaho traded buffalo robes at Bent's Old Fort before the Sand Creek massacre.

ANSWER: **Colorado** [or **CO**]

<American History>

7. The Einstein relation states that this process's namesake coefficient is directly proportional to mobility. For 10 points each:

[10] Name this process that describes the movement of particles from areas of high concentration to low concentration.

ANSWER: **diffusion** [accept **diffusion** coefficient]

[10] Current density in semiconductors can be modeled using a set of 10 equations named after this word and diffusion. This is the first word in the name of a quantity equal to current density divided by charge and number density.

ANSWER: **drift** [accept **drift** velocity; accept **drift**-diffusion equation or **drift**-diffusion model]

[10] Semiconductor current density can be affected by changing the density of electrons and these positively-charged quasiparticles. Their density can be increased by doping with Group 3 elements like boron.

ANSWER: electron **holes**

<Physics>

8. G. K. Chesterton described the work of this philosopher as being founded on "universal common convictions" in a major monograph on him. For 10 points each:

[10] Name this philosopher whose "24 Theses," including one that introduced the act-potency distinction, are considered a "perennial philosophy" by one organization.

ANSWER: Thomas **Aquinas** [accept **Thomism**; prompt on **Thomas**]

[10] Aquinas is important in Roman Catholic theology for his five proofs, including those of the unmoved mover and first cause, of the existence of this entity.

ANSWER: **God** [prompt on **deity**]

[10] The last three years of Aquinas's theology studies were spent writing several of these texts in response to Peter Lombard's *Sentences*. Aquinas also wrote a major text of this type based on Aristotle's *Metaphysics*.

ANSWER: **commentary**

<Philosophy>

9. An annual festival at a temple in Guwahati, Assam, honors the goddess Kāmākhyā ("kah-mahk-ya") undergoing this process. For 10 points each:

[10] Name this process analyzed as a taboo in Mary Douglas's *Purity and Danger*. In a South Indian rite of passage, girls receive a langa voni dress when they start experiencing this monthly cycle during puberty.

ANSWER: **menstruation** [or **menstrual** cycle; or **menarche**; or **period**; accept **ovulation**; prompt on **bleeding**]

[10] During the festival celebrating her menstruation, Kāmākhyā is worshipped in the form of a yoni, the feminine counterpart of these masculine objects representing Shiva. Amarnath Temple houses one of these phallic, aniconic objects made of ice.

ANSWER: **linga** [or **lingam**; or Shiva**linga**; or Shiv**ling**; prompt on **pillars** or **stalagmites**]

[10] India's tallest Shiva lingam is in this Indian state's village Chenkal. In 2018, the Supreme Court lifted a ban on menstruating worshipers entering Sabarimala temple to Ayyappan in this state, the home of the Saint Thomas Christians.

ANSWER: **Kerala** ("CARE-uh-luh")

<Religion>

10. This character's parents tell her to "mend the stockings or mind the stew" instead of reading. For 10 points each:
[10] Name this character who runs away from a marriage to "the son of a neighboring wool-stapler" to pursue an acting career. In London, this character becomes pregnant with Nick Greene's child.

ANSWER: **Judith** Shakespeare [accept **Shakespeare's sister**; prompt on **Shakespeare**]

[10] Judith Shakespeare appears in an essay by this author declaring that "a woman must have money and a room of her own if she is to write fiction." This author wrote *Mrs. Dalloway* and *To The Lighthouse*.

ANSWER: Virginia **Woolf**

[10] Virginia Woolf adapted *A Room of One's Own* from speeches she gave at two of these places. Jim Dixon gives a disastrous, drunken speech about "Merrie England" at one of these places in Kingsley Amis's novel *Lucky Jim*.

ANSWER: **university** [accept women's **college**; prompt on **school**; prompt on **Oxbridge** or **Cambridge** or **Newnham College** or **Girton College**; prompt on **campus** or **lecture hall**]

<British Literature>

11. This artist arranged three skulls in his *Pyramid of Skulls*. For 10 points each:

[10] Name this artist who also placed a skull next to a candle and book in a still life. This artist also depicted Mont Sainte-Victoire in increasingly abstract fashion beginning in the late 19th century.

ANSWER: Paul **Cézanne** ("say-zahn")

[10] An anamorphic skull is stretched across the ground in this painting. This painting by Hans Holbein the Younger depicts a lute and multiple globes on a shelf between the two title diplomats.

ANSWER: *The **Ambassadors*** [or ***Jean de Dinteville and Georges de Selve***]

[10] An artist from this country depicted a large pyramid of skulls in his *Apotheosis of War*. Another artist from this country depicted a hefty man with a large mustache laughing while a man with a bowl cut is writing a letter.

ANSWER: **Russia** [or **Russian Empire**; do not accept or prompt on "Soviet Union" or "USSR"] (The artists are Vasily Vereschagin and Ilya Repin; the Repin painting is *Reply of the Zaporozhian Cossacks*.)

<Painting/Sculpture>

12. In this modern-day country, António Raposo Tavares looted Jesuit missions and enslaved over 2,500 Guaraní people. For 10 points each:

[10] Name this modern-day country where *bandeirantes* ("bun-day-RON-chiss") settled the state of Mato Grosso for sugar plantations in violation of the Treaty of Tordesillas, which gave the eastern part of it to Portugal.

ANSWER: **Brazil** [or Federative Republic of **Brazil**]

[10] The *bandeirante* Francisco de Melo Palheta ("pall-YET-uh") smuggled the first seeds for this crop to Brazil by having his French Guinean mistress stuff them in a bouquet of flowers. Conflicts between São Paulo's gentry for this crop and the dairy gentry in Minas Gerais ("MEE-nuss zeh-RICE") dominated Brazil's early republic.

ANSWER: **coffee** [or **café**; accept **coffee** with milk politics; accept **café** com leite]

[10] Cândido Rondon, the "last of the *bandeirantes*," was accompanied by this man on a 1914 expedition that mapped the Amazon's River of Doubt. He died less than five years after returning home to the United States due to health problems caused by the trip.

ANSWER: **Theodore Roosevelt** [or **Teddy Roosevelt**; prompt on **Roosevelt**]

<World History>

13. Molecular dynamics can simulate this molecule's photodissociation from myoglobin at picosecond-scales. For 10 points each:

[10] Name this molecule that carbonylates ("car-BON-il-ates") acetylene in Reppe chemistry. The main components of syngas ("sin-gas") are hydrogen and this other gas, which poisoned people who inhaled exhaust fumes in garages.

ANSWER: **carbon monoxide** [or **CO**]

[10] Chelotropic ("KEE-luh-tro-pick") examples of these reactions often involve carbon monoxide extrusion. Group transfers like the ene ("een") reaction exemplify these concerted reactions with cyclic transition states, whose stereochemistry is governed by the Woodward–Hoffman rules.

ANSWER: **pericyclic** reactions [prompt on cycloadditions or sigmatropic reactions or electrocyclic reactions or rearrangements]

[10] Cascade pericyclic reactions are a common step in syntheses using this strategy, which Robinson pioneered in his biomimetic tropinone synthesis. This approach improves yield by initiating multiple steps in the same reactor.

ANSWER: **one-pot** synthesis [accept **telescoping** synthesis]

<Chemistry>

14. A poem with this title proclaims that the "sterile winter glitters with ennui" ("on-wee") and ends with the subject "lying immobilized in the chill." For 10 points each:

[10] Name this title shared by a poem that asks "Rain, when will you fall? Thunder, when will you roll?" That poem with this title begins "Andromache, I think of you" and compares its subject to "a man in exile."

ANSWER: "The **Swan**" [or "Le **Cygne**"]

[10] "The Swan" was included in this collection by Charles Baudelaire, which includes the sections "Parisian Scenes" and "Wine."

ANSWER: *The **Flowers of Evil*** [or *Les **Fleurs du Mal***]

[10] Charles Baudelaire belonged to this French literary movement that used metaphorical language instead of trying to represent reality. Stéphane Mallarmé, the author of "The Afternoon of a Faun," also belonged to this movement.

ANSWER: **Symbolism** [or **Symbolist**; or **Symbolisme**]

<European Literature>

15. Some groups are conjectured to have reached North America before Columbus. For 10 points each:

[10] Irish historian David Beers Quinn posited that people from Bristol happened upon North America in 1480 while searching for this good. William Pitt the Elder called this good "British gold" while debating the terms of the Treaty of Paris.

ANSWER: **cod** [prompt on fish]

[10] Though his theories are not accepted by any mainstream historians, Gavin Menzies speculated that this Ming dynasty explorer reached America in 1421.

ANSWER: **Zhèng Hé** ("jung huh") [or **Mǎ Hé**]

[10] These people most definitely reached North America in the 11th century, moving on from the misleadingly named colony of Greenland. Leif Erikson, one of these people, set foot on Vinland.

ANSWER: **Vikings** [accept **Norsemen** or **Vikingers**; prompt on Scandinavians]

<Other History>

16. This book notes that over two-thirds of Venezuela's landowners went bankrupt from 1814 to 1816 while arguing that Venezuela was more "emotionally plausible" than the less well-educated Brazil. For 10 points each:

[10] Name this book that cites *Noli Me Tangere* ("no-lee may TAHN-geh-ray") and *Semarang Hitam* to illustrate the "confidence... in anonymity" that developed in the modern period. This book's title groups arise from "deep, horizontal comradeship."

ANSWER: ***Imagined Communities*** [or ***Imagined Communities: Reflections on the Origin and Spread of Nationalism***] (by Benedict Anderson)

[10] *Imagined Communities* argues that this technology created "languages-of-power" that fueled nationalism's rise. Marshall McLuhan claimed that this technology drove visual culture and industrialization in *The Gutenberg Galaxy*.

ANSWER: **print** [or the **printing** press; accept movable **type**; accept **newspapers** or the **press**; prompt on **books** or **writing** or similar]

[10] *Imagined Communities* argues that print culture influenced Thailand by citing a textbook that led Rama V to make this subject compulsory. James Gall and Arno Peters argued that political perceptions can be distorted by this subject, whose practitioners often use ArcGIS ("ark-G-I-S").

ANSWER: **geography** [accept **mapping** or **cartography**; accept map **projections** or **charts**; accept **geographic** information systems; accept **geomatics**]

<Social Science>

17. This organism produces a useful class of proteins called magainins ("ma-GAIN-ins"), which act as antibacterials, antifungals, antivirals, and antiparasitics. For 10 points each:

[10] Name this amphibian model organism that is often studied in embryology labs due to its transparent embryos and high egg-laying rates.

ANSWER: ***Xenopus laevis*** [or ***X. laevis***; accept **African clawed frog**; prompt on **frog**]

[10] *Xenopus* ("ZEE-no-puss") was the first vertebrate to undergo this process in a lab, though Dolly the Sheep gained much more fame for being the first mammal to undergo it.

ANSWER: **cloning** [or word forms]

[10] *Xenopus* can help determine the cause of some congenital heart diseases in these studies. These large-scale studies examine different single nucleotide polymorphisms to determine which are most tied to the incidence of a disease.

ANSWER: **genome-wide association** studies [or **GWAS**; accept **whole genome association** study or **WGAS**]

<Biology>

18. An artist from this country would cover herself in materials like wood or mud and blend into natural landscapes in her *Silueta* series. For 10 points each:

[10] Name this home country of Ana Mendieta ("men-dee-ET-ah"). A large candy pile that visitors are invited to take a snack from and a series of empty bed billboards are two installations by an artist born in this country, Felix González-Torres.

ANSWER: **Cuba**

[10] Those billboards were created to commemorate González-Torres's partner Ross Laycock, who died due to this disease. Keith Haring printed "SILENCE = DEATH" on a poster during an epidemic of this disease in the 1980s.

ANSWER: **AIDS** [or **acquired immune deficiency syndrome**; prompt on **HIV** or **human immunodeficiency virus**]

[10] The NAMES Project created one of these objects to commemorate the victims of AIDS. Faith Ringgold created "story" examples of these objects like *Who's Afraid of Aunt Jemima?* and *Tar Beach #2*.

ANSWER: **quilts** [accept story**quilts** or patchwork **quilts**; accept the AIDS Memorial **Quilt**; prompt on **blankets**]

<Other Arts>

19. This author and her husband satirized Freudian psychoanalysis in their play *Suppressed Desires*. For 10 points each:

[10] Name this “Davenport Group” author who explored the aftermath of Mrs. Wright murdering her husband in her one-act play *Trifles*.

ANSWER: Susan **Glaspell** [or Susan Keating **Glaspell**]

[10] Susan Glaspell and her husband George Cram Cook founded a company of “players” named for a city in this state, which used innovative sets designed by Cleon Throckmorton and Bobby Jones. In a play set in this modern-day state, a character’s last words are “more weight” as he is crushed by rocks.

ANSWER: **Massachusetts** (The play is Arthur Miller’s *The Crucible*.)

[10] Paul Robeson starred in the Provincetown Players’ premiere of this author’s play about an interracial marriage, *All God’s Chillun Got Wings*. This playwright also wrote *The Emperor Jones* and *Long Day’s Journey Into Night*.

ANSWER: Eugene **O’Neill** [or Eugene Gladstone **O’Neill**]

<American Literature>

20. Answer the following about the use of herbs in Greek mythology, for 10 points each.

[10] After stealing fire from Zeus, this Titan hides it inside of a giant fennel-stalk to deliver it to mankind.

ANSWER: **Prometheus**

[10] In Book X of the *Odyssey*, Hermes provides Odysseus with this herb to protect him from Circe’s magic. Ovid described this plant as “a white bloom with a root of black.”

ANSWER: **moly**

[10] After watching a snake use an herb to revive its dead mate, Polyidus (“poly-EYE-dus”) uses that herb to revive a son of Minos with this name who had died by drowning in a cask of honey. A mortal fisherman with this name becomes an immortal sea god by eating a magical herb.

ANSWER: **Glaucus**

<Mythology>

21. While blue colors are rare in nature, they can arise from many types of chemistry. For 10 points each:

[10] “Bristol blue” glass uses a blue pigment from this metal’s oxide. Gamma rays are emitted by the 60-isotope of this transition metal, whose plus-2 cation forms an equilibrium between blue and pink complexes in a common lab illustrating Le Chatelier’s principle.

ANSWER: **cobalt** [or **Co**; accept **cobalt** blue]

[10] The blue and green minerals azurite and malachite are basic carbonates of this metal that can cause objects made from it to form verdigris. Schweizer’s reagent gets its blue color from this metal, which forms an alloy with zinc in brass.

ANSWER: **copper** [or **Cu**]

[10] Lapis lazuli was once ground into the complex pigment ultramarine, whose color arises from a radical anion of this element. The marine bacterium *Beggiatoa* oxidizes this element, whose biogeochemical cycle includes both dry and wet deposition and cycling by “purple” bacteria.

ANSWER: **sulfur** [or **S**; accept trisulfur; accept **thionozide**; accept purple **sulfur** bacteria]

<Chemistry>