

Bulldog High School Academic Tournament 2021 (XXX): “I feel like ACF Regionals 2021 is a confusing subtitle for a set that’s not ACF Regionals 2021.”

Written by Yale Student Academic Competitions (Zach Alvarez, Peter Cappaert, Jordan Davidsen, Stephen Eltinge, Michał Gerasimiuk, Mauricio Gonzalez-Sanchez, Hasna Karim, Sophie Lai, Louie Lu, Daniel Ma, Nathaniel Miller, Alisia Pan, Matt Pecoraro, Joshua Rothbaum, David Rubin, Matthew Siff, Varun Sikand, Daniel Sheinberg, Jeremy Sontchi, and Sebastian Torres) with Adam Fine, Michael Kearney, Olivia Murton, Annabelle Yang, and Bo You Edited by Jordan Brownstein, Jaimie Carlson, Stephen Eltinge, Adam Fine, Hasna Karim, Michael Kearney, Daniel Ma, Daniel Sheinberg, and Annabelle Yang, with contributions from Olivia Murton

Packet 13 Tossups

1. **Three watercolors depict this location in dark, red, and blue tones at different times of day. Another painting set at this location features a rock inscribed with “KAROLUS MAGNUS IMP.” In response to that work, Paul Delaroche painted an exhausted mule trudging through this location. In a more grandiose painting set here, a title figure in a billowing cloak points upward astride a rearing (*) horse. A massive storm cloud arcs over a yellow-orange sun in a J.M.W. Turner painting of an army crossing this location. For 10 points, give this location, depicted in a Jacques-Louis David portrait of Napoleon passing through this European mountain range.**

ANSWER: the Alps [accept the Rigi or Lake Lucerne before “KAROLUS” is read; prompt on Switzerland] (JMW Turner painted the *Dark Rigi*, *Red Rigi*, and *Blue Rigi*.) (SL)

2. **With the ideas of not-self and impermanence, this concept is one of the three marks of existence. The *samkara* form of this concept is inherent to all conditioned phenomena. In his sermon from the *The Setting in Motion of the Wheel of the Dharma Sutta*, the Buddha explains that birth, aging, illness, and death are all this concept. That is one formulation of the first of the Four (*) Noble Truths, which centers on this concept. This concept is translated into English from the term *dukkha*. After encountering an old man, a sick person, a dead body, and an ascetic, Siddhartha sets out to escape this state. For 10 points, name this state, which Buddhists believe is caused by desire.**

ANSWER: suffering [accept dukkha or duhkha before mention; accept unsatisfactoriness or incapable of satisfying; accept unhappiness or pain or distress or sadness or anxiety or unease or frustration; prompt on samsāra and other answers indicating the cycle of reincarnation by asking “what state does this cause?”] (AY)

3. **This battle’s winning commander and Cuthbert Collingwood broke tradition by leading two outnumbered lines in charges perpendicular to enemy lines. An 1822 painting of this battle shows the semaphore flags for the letters “D-U-T-Y,” the end of a famous message sent before it began. That J. M. W. Turner image of this battle shows the *Redoutable* and Pierre (*) Villeneuve’s flagship *Bucentaure* in the background behind the looming flagship *Victory*. On a square named for this battle, four lions surround a column named for its victorious one-eyed admiral. For 10 points, name this British victory in which a Napoleonic fleet was decimated by Horatio Nelson, who died during it.**

ANSWER: Battle of Trafalgar [accept Trafalgar Square] (DM)

4. In one film, a man who had previously won a bet by eating 50 eggs steals a truck to accomplish this action. Agatha bakes several strangely-shaped pastries to enable one of these actions in *The Grand Budapest Hotel*. In one film, characters chant “deshi basara,” or “rise,” as Christian Bale’s character attempts this action “as the (*) child did ... without a rope.” Tim Robbins’ character uses a Rita Hayworth poster to conceal a tunnel via which he carries out this action in a 1994 film that co-stars Morgan Freeman. The protagonist of *Cool Hand Luke* repeatedly attempts, for 10 points, what action that is central to the plot of *The Shawshank Redemption*?
ANSWER: **escaping** from **prison** [accept **jail** for “prison”; accept equivalents like a **prison break**; accept descriptions of **escaping the pit** from *The Dark Knight Rises*] (ST)

5. In a play by this author, two old men trade misinformation on a species that is supposedly vulnerable to “sunspots, miscarriage, inappropriate changes in the weather... and of course, the blue heron.” In addition to *The Duck Variations*, this author wrote a play in which a character pretends to know the senior VP of American Express in order to get out of a conversation with (*) James Lingk. That character demands a Cadillac for winning a contest in a play by this man that is known for its profanity-heavy opening scene set in a Chinese restaurant. Williamson and Levene discuss real estate leads and plan a robbery in, for 10 points, what American playwright’s *Glengarry Glen Ross*?
ANSWER: David (Alan) **Mamet** (MGS)

6. This ecosystem is the source of a paradox about productivity in nutrient-poor zones laid out by Charles Darwin. Organisms that contribute to the development of these ecosystems are known as hermatypic. Members of sea snail genus *Drupella* can destroy the central structures of these ecosystems, as can “plagues” of the (*) crown-of-thorns starfish. Zooxanthellae [“zoo-zan-THELL-ay”] can be driven out of these ecosystems due to acidification, resulting in the “bleaching” of the structures which form this ecosystem. Fringes and atolls are formed by, for 10 points, what kind of biodiverse marine ecosystems exemplified by Australia’s “Great Barrier” one?
ANSWER: **coral reefs** [prompt on partial answer] (HK)

7. One effector of this process is cleaved by a protein complex resembling a seven-spoked wheel and can be detected by the TUNEL assay. The extrinsic pathway of this process is activated by binding of Fas ligands, which cause formation of the DISC complex. Members of the Bcl-2 family oppose this process, while members of the BH3-only family, like (*) Bad and Bax, promote it. DNA laddering is indicative of this process, which cancer cells can evade. The release of cytochrome c from the mitochondria ultimately activates executioner caspases during this process. For 10 points, name this process of programmed cell death contrasted with necrosis.
ANSWER: **apoptosis** [prompt on **cell death** or **programmed cell death** before mention] (HK)

8. In a 1988 presidential debate, George H.W. Bush told the audience that they “probably never heard of” this person when referring to inspirational modern-day heroes. This person underwent surgery in August 2020 to remove a vocal cord polyp worsened by frequent public appearances. This chief PEPFAR architect’s favorite actor, (*) Brad Pitt, earned an Emmy nomination for playing him in an SNL cold open. In 2020, Time Magazine nominated all frontline workers and this man as Guardians of the Year. For 10 points, name this face of the United States’ COVID-19 response, President Biden’s Chief Medical Officer.
ANSWER: Anthony **Fauci** [or Anthony Stephen **Fauci**; or Tony **Fauci**] (MP)

9. An Edward Said essay titled for “Two Visions” in a text by this author argues that it epitomizes the “imperialist aesthetic.” Another critic explains the fascination with that text by this author using the line, “What thrilled you was just the thought of their humanity—like yours,” and concludes that the text withholds “human expression” from certain people. That (*) Chinua Achebe essay objects to this author’s depiction of an “insolent black head” announcing “he dead.” The handwritten postscript “Exterminate all the brutes” appears in a novella by this man. For 10 points, Mr. Kurtz dies crying out, “the horror, the horror!” in *Heart of Darkness*, which was written by what Polish-British author?

ANSWER: Joseph Conrad [or Józef Teodor Konrad Korzeniowski] (MGS)

10. Two perfect fifths minus an octave makes a major second, giving a ratio of this number to 8 in Pythagorean tuning. A “nonexistent” inverted chord encompassing an interval of this number caused a jury to reject Schoenberg’s *Transfigured Night*. A suspension denoted by this number resolves to the tonic. This is the top number in a compound (*) triple meter time signature. The last movement “symphony within a symphony” of a work of this number features a Turkish march. Mahler composed “The Song of the Earth” to avoid a curse of this number, which labels a Beethoven symphony with a setting of “Ode to Joy.” For 10 points, how many musicians perform in a nonet?

ANSWER: nine [accept word forms like ninth] (DM)

11. In Creek stories, an iridescent-scaled animal with this physical feature has a crystal on its forehead. Cernunnos is an ancient Celtic deity known for this physical attribute. In the stories of several Native American peoples, water is associated with serpents named for this physical feature. A headdress with a red solar disk flanked by these physical features appears in iconography of (*) Hathor. Heracles captured an animal sacred to Artemis with golden examples of these features, the Ceryneian Hind. A jackalope has these physical features analogous to those of an antelope. For 10 points, protection against poison and water purification were attributed to what physical features of unicorns?

ANSWER: horns [accept horned; accept having a crystal in its forehead before mention] (AY)

12. Some viewed Operation Infinite Reach as a diversion from this event because the accused party had given testimony on it three days earlier. This event is recounted in the second season of the *Slate* podcast “Slow Burn.” A person involved in this event cryptically stated that “it depends on what the meaning of the word ‘is’ is.” During this event, (*) Ken Starr received a set of tapes from Linda Tripp. Perjurious testimony given in the Paula Jones case led to this scandal. In this scandal, one party claimed that he “did not have sexual relations with that woman.” For 10 points, what scandal involving a White House intern led to the impeachment of Bill Clinton?

ANSWER: Monica Lewinsky affair [or equivalents describing the affair or scandal between Bill Clinton and Monica Lewinsky; prompt on impeachment of Bill Clinton by asking “perjurious testimony regarding what event led to Clinton’s impeachment?”] (MGS)

13. One poem in this form muses that “it is strange to inhabit the earth no longer...to leave one’s own first name behind.” One poem of this type insists “I will not see it!” after emphasizing that the title event took place at “exactly five in the afternoon.” One poem of this type written for “my noon, my midnight, my talk, my song,” opens (*) “Stop all the clocks, cut off the telephone.” The phrase “hail and farewell” concludes Catullus 101, a poem of this type addressed to a brother. The question “Who, if I cried out, would hear me among the angelic orders?” opens a collection of poems of this type named for Duino Castle. For 10 points, name these poetic laments for the dead.

ANSWER: elegy [accept *Duino Elegies* or *Duineser Elegien*; accept “Lament for the Death of a Bullfighter” or “Llanto por Ignacio Sánchez Mejías” during the second sentence and prompt thereafter; accept word forms like elegiac couplets or elegiac stanzas] (HK)

14. **Georg Solti conducted a final act trio from one of this composer’s operas at his funeral; that trio is followed by the love duet “Ist ein Traum.” A character in another of this composer’s operas hallucinates beating wings after slipping in a guard’s blood. In the final act of that opera by this composer, C-sharp minor chords approach a highly dissonant chord accompanying a kiss delivered to a (*) severed head. “Mariandel” is actually a Count cross-dressing to fool Baron Ochs in an opera by this composer. In that opera, Sophie falls in love with Octavian, who delivers her a silver flower. For 10 points, name this composer of *Der Rosenkavalier* and *Salome*.**

ANSWER: **Richard Strauss** [or **Richard Georg Strauss**; prompt on **Strauss**] (the first sentence refers to *Der Rosenkavalier*.) (MG)

15. **A “victorious” update of this idea using S5 logic was introduced by Alvin Plantinga. Charles Hartshorne defended this idea against Immanuel Kant’s objection that “existence is not a predicate.” A hypothetical “lost island” was used in a *reductio ad absurdum* against this idea that was put forth in Gaunilo of Marmoutiers’s *On Behalf of the Fool*. This argument hinges on the fact that (*) existence in reality is greater than existence in the understanding alone, so a “being than which nothing greater can be conceived” must exist. The *Proslogion* of an 11th-century archbishop originated this argument. For 10 points, St. Anselm put forth what sort of argument for the existence of God?**

ANSWER: **ontological** argument for the existence of God [prompt on answers like “the existence of God” before “God” is read] (VS)

16. **Athenagoras I was criticized for signing a “Joint Declaration” that partly reversed this event. Letters exchanged during this event criticized one side for not helping the other resist a Norman invasion at the Battle of Civitate [“chee-vee-TAH-tay”]. Before this event, Humbert of Silva Candida translated Leo of Ohrid’s letter attacking the use of unleavened (*) bread. That letter contributed to this event, alongside the *Filioque* [“fil-ee-OH-kway”] clause and the hierarchy of the pentarchy. During this event, Leo IX’s representatives and Patriarch Michael Cerularius excommunicated each other. For 10 points, name the 1054 event that divided the Christian world into Roman Catholicism and Eastern Orthodoxy.**

ANSWER: **Great Schism** [accept **East–West Schism** or **Schism of 1054**; do **NOT** accept or prompt on “Western Schism”] (LL)

17. **These features host delocalized electronic excitations that are studied in their namesake “plasmon resonance.” In an effect named for these features, the density of alternating current drops exponentially as a function of distance from them. The electric field has a discontinuity in this location equal to the charge density over epsilon-nought. The left-hand side of Gauss’s law is written as a type of (*) integral named for these features. Flux is the amount of a vector field passing through one of these features. In a conductor, all net charges spontaneously move to this general area. For 10 points, cohesive forces in what part of a water droplet produce a namesake “tension”?**

ANSWER: **surfaces** [accept **interfaces** or **boundary** or **boundaries** or **skin**; accept **surface** plasmon resonance or **surface** tension; accept **skin** effect] (SE)

18. **One kingdom in this modern country had its initial capital at Mazaber and later conquered the Himyarites under King Kaleb. Stelae erected in this country's former capital before King Ezana's conversion likely marked royal graves. After overthrowing one kingdom in this country, Queen Gudit began the Zagwe Dynasty.** (*) Ge'ez has been this country's liturgical language since the Kingdom of Aksum, which was based in its Tigray region and claimed to be the location of the Ark of the Covenant and home of the Queen of Sheba. For 10 points, name this African country where the native Tewahedo Church is headquartered at Addis Ababa.

ANSWER: **Ethiopia** [or Federal Democratic Republic of **Ethiopia**; or **Ityopiya** Federalawi Demokrasiyawi Ripeblik] (ZA)

19. **One novel set in this country describes the titular last 10 Minutes 38 Seconds in this Strange World of Tequila Leila, a murdered sex worker. Chapters of another novel set in this modern-day country are narrated by Esther, the Devil, Shekure, a gold coin, and a figure "who will be called a murderer." A master artist who taught Butterfly, Olive, Stork, and (*)** Black blinds himself with a plume needle in that novel from this country. In a work from this country, Kadife removes her headscarf and shoots Zaim, and Ka writes a poem called "Snow" from which that novel takes its name. For 10 points, Orhan Pamuk's home and the setting of *My Name is Red* is what country's city of Istanbul?

ANSWER: **Turkey** [or Republic of **Turkey**; or **Türkiye** Cumhuriyeti] (The first novel is by Elif Shafak.) (HK)

20. **Dihedral angles of -60 ["minus 60"] and -45 ["minus 45"] degrees characterize structures named for this letter, forming a diagonally-shaped cluster on Ramachandran plots. The ratio of the induced dipole moment and the electric field gives one quantity denoted by this letter. A coefficient describing how an object's size changes with temperature, the thermal (*) expansion coefficient, is denoted by this letter. The first carbon next to a carbonyl group is named for this letter. An experiment in which particles named for this letter were shot at gold foil elucidated the existence of the atomic nucleus. For 10 points, particles consisting of two protons and two neutrons are named for what first Greek letter?**

ANSWER: **alpha** [accept **alpha** helix/helices, **alpha** carbon, **alpha** decay, or **alpha** particle] (MP)

Tiebreaker

One work by this poet ends with a calendar of auspicious days, advising women to weave on the twelfth and give birth to boys on the tenth. That work, which also contains the fable of the hawk and the nightingale, is addressed to this poet's brother Perses. He opens another work with an invocation to the "Heliconian Muses." Children will be born with gray hair at the end of the fifth (*) Age of Man according to an almanac-like poem by this man, who described a primordial Chaos giving rise to all things in another poem composed around 700 BC.

Works and Days is by, for 10 points, what ancient Greek poet who chronicled the birth of the gods in the *Theogony*?

ANSWER: **Hesiod** (MGS)

Packet 13 Bonuses

1. Answer the following about F-sharp minor in Classical-era music, for 10 points each.

[10] Mozart's 23rd of these works, in A major, contains a painfully emotional Adagio in F-sharp minor, his only movement in the key. Mozart's 27 pieces of this type include the Lutzow and Jeunehomme.

ANSWER: **piano concertos**

[10] This Haydn symphony is the only major Classical work with a home key in F-sharp minor. It ends with the instruments gradually playing softer as musicians leave the stage, each blowing out a candle as they exit.

ANSWER: Haydn's Symphony No. **45** in F-sharp minor [accept *Farewell Symphony* or *Abschieds-Symphonie*]

[10] Haydn also set his 39th of these works in F-sharp minor. In addition to symphonies, Haydn is often dubbed the "Father" of these string ensembles, which consist of two violins, a viola, and a cello.

ANSWER: **string quartet** (DM)

2. Yudhishtira gambles this woman away after gambling away himself, his brothers, and his kingdom. For 10 points each:

[10] Name this wife of the Pandavas. Dushasana tries to disrobe this woman only for her *sari* to grow miraculously long, thwarting his attempt to violate her.

ANSWER: **Draupadi**

[10] Draupadi revenges herself on Dushasana by washing her hair in this substance. That follows her husband Bhima making good on his promise to avenge the insult by drinking this substance straight from Dushasana's chest.

ANSWER: Dushasana's **blood**

[10] Draupadi is married to Bhima and all the other Pandavas. However, Draupadi's father had originally intended for her to only marry this son of Indra, the protagonist of the *Mahabharata*. Krishna serves as this man's charioteer.

ANSWER: **Arjuna** (HK)

3. A paper merchant named Jihei and a sex worker named Koharu do this action in a play set in Amijima. For 10 points each:

[10] Name this action taken by Ohatsu and Tokubei in the Wood of Tenjin near a twinned palm and pine tree growing out of the same trunk.

ANSWER: love **suicides** [or *shinjū*; accept any reasonable equivalent description of **killing oneself** or a **murder-suicide**]

[10] *The Love Suicides at Sonezaki* and *The Love Suicides at Amijima* are both plays by this master *bunraku* playwright. His other works include *The Battles of Coxinga*.

ANSWER: **Chikamatsu** Monzaemon [or **Sugimori** Nobumori; accept names in either order]

[10] The *bunraku* theatre's performers and puppet makers have been designated Living National Treasures by this country which is also home to *noh*, an older style of theatre.

ANSWER: **Japan** [or **Nihon**; or **Nippon**] (HK)

4. One singer variously appears silhouetted atop a candle and seated atop a globe before proclaiming this phrase. For 10 points each:

[10] Give this phrase, which “you’ll believe” “when all is said and done.” This phrase also titles a song whose singer asserts that she feels after midnight “a feeling that you can’t fight.”

ANSWER: “**God is a Woman**”

[10] This Amazon Prime show cast Frances McDormand as God, causing a Christian group to petition for Netflix to cancel it. Aziraphale and Crowley appear in this show, which is based on a Neil Gaiman and Terry Pratchett book.

ANSWER: **Good Omens**

[10] Instead of God, this show features Maya Rudolph as the Judge, who rules on afterlife disputes. Cocaine addict and lawyer Mindy St. Claire appears in a “medium” location on this show, which stars Kristen Bell as Eleanor.

ANSWER: *The* **Good Place** (AY)

5. Sewall Wright described this species as “the clearest case in which a conspicuous evolutionary process has actually been observed.” For 10 points each:

[10] Name this species. Bernard Kettlewell studied the mechanism that caused these creatures to be white near clean towns like Dorset but black near polluted towns like Birmingham during the Industrial Revolution.

ANSWER: **peppered moths** [or *Biston betularia*; prompt on moths or *Biston*]

[10] Peppered moth evolution is perhaps the most widely studied example of this process at work. Charles Darwin formulated this mechanism by which only organisms with beneficial adaptations can survive to reproduce.

ANSWER: **natural selection** [prompt on evolution or Darwinian evolution]

[10] Followers of this man’s theory of inheritance ridiculed Darwinians’ proposed selective predation mechanism for moth evolution. This man cited the giraffe’s neck as a trait acquired through life that could be passed down.

ANSWER: Jean-Baptiste **Lamarck** [or Jean-Baptiste Pierre Antoine de **Monet**, Chevalier de Lamarck; accept **Lamarckism**] (HK)

6. James P. O’Neill offered an official apology for the actions of the NYPD on the 50th anniversary of this event in 2019. For 10 points each:

[10] Name this 1969 series of demonstrations in Greenwich Village which followed a police raid on a namesake establishment on Christopher Street.

ANSWER: **Stonewall** Inn riots

[10] The largest annual one of these events in the world first started in New York after the Stonewall Riots and attracted 4 million visitors in 2019. These events express solidarity with the LGBTQ+ community.

ANSWER: **pride parade** [also accept **pride marches**, **pride events**, **pride festivals** or logical equivalents; prompt on partial answers]

[10] This drag queen rose to prominence during the Stonewall Riots and was known as the “Mayor of Christopher Street.” This activist also co-founded S.T.A.R. with Sylvia Rivera.

ANSWER: Marsha P. **Johnson** (JS)

7. In 1992, Judge Giovanni Falcone's Fiat Croma was blown up on a highway near this island's town of Capaci. For 10 points each:

[10] Name this island, where Falcone had recently led a crackdown that resulted in the indictment of 475 defendants in the Maxi Trial.

ANSWER: **Sicily** [or **Sicilia**]

[10] Falcone's assassination came in retaliation for his aggressive prosecution of this Sicilian criminal organization, whose "families" include the Greco and the Corleonesi.

ANSWER: Sicilian **Mafia** [or **Cosa Nostra**]

[10] The death of Falcone was ordered by Salvatore Riina, who was given this Italian-language title by the media. This title, which was actually claimed by American Mafia leaders like Lucky Luciano, means "boss of bosses."

ANSWER: **capo dei capi** [or **capo di tutti i capi**; prompt on **capo**] (JS)

8. A star-shaped one of these items was designed for Angel by Thierry Mugler. For 10 points each:

[10] Identify these items, which typically feature atomizers and are made of glass and used to hold a certain liquid. One of these objects, designed for J'adore by Dior, is shaped like an amphora with a golden neck.

ANSWER: **perfume bottles** [accept descriptions involving fragrance-holding containers]

[10] Elsa Schiaparelli designed a fragrance that is contained in a bottle shaped like the torso of this actress. Salvador Dali, who collaborated with Schiaparelli on a "Lobster Dress," created a sofa shaped after this actress' lips.

ANSWER: Mae **West** [or Mary Jane **West**]

[10] Schiaparelli had a notable rivalry with this French designer. Her signature "No. 5" fragrance was held in a square bottle with white, sans-serif label and a beveled stopper.

ANSWER: Coco **Chanel** [or Gabrielle Bonheur **Chanel**] (SL)

9. Answer the following about David Thompson, who has been called "the greatest land geographer who ever lived," for 10 points each.

[10] Thompson was the first European to navigate this river in full, and his maps of its basin continued to be used well into the 20th century. This river's Kettle Falls was an important center of indigenous salmon fishing and trade.

ANSWER: **Columbia** River

[10] Thompson also established several trading posts in western North America, requiring him to repeatedly cross this mountain range that contains Pike's Peak while travelling between Montreal and the Pacific coast.

ANSWER: **Rocky** Mountains [or **Rockies**]

[10] Thompson discovered a new route to the Rockies through the Athabasca Pass, which connects this Canadian province with its neighbor. This westernmost *prairie* province is home to large oil sand deposits.

ANSWER: **Alberta** (DR)

10. Christminster is clearly modeled after this city in *Jude the Obscure*. For 10 points each:

[10] Name this university city, where the outrageously attractive Zuleika Dobson entices the entire student population to drown themselves in a Max Beerbohm novel. She then moves on from this city to Cambridge.

ANSWER: **Oxford**

[10] This Evelyn Waugh novel contains another literary portrayal of Oxford. In this novel, Lord Sebastian Flyte invites the narrator and fellow Oxfordian Charles Ryder to stay with him at the title estate.

ANSWER: **Brideshead Revisited**, *The Sacred & Profane Memories of Captain Charles Ryder*

[10] This Zadie Smith campus novel about two Rembrandt scholars and their families doesn't take place at Oxford, for once. Instead, it's set at the fictional Wellington College, modeled after Harvard.

ANSWER: **On Beauty** (DS)

11. The reciprocal of this quantity is plotted on the y -axis of a Lineweaver–Burk plot. For 10 points each:

[10] Name this quantity. The maximum value of this quantity for a reaction is the asymptote of a standard hyperbolic Michaelis–Menten saturation curve.

ANSWER: reaction **rate** [or **reaction velocity**; do **NOT** accept or prompt on “rate constant”]

[10] The Michaelis–Menten equation is used to model the kinetics of reactions catalyzed by these proteins. The names of these “biological catalysts” often end in the suffix “-ase.”

ANSWER: **enzymes**

[10] Catalytically “perfect” enzymes are limited only by substrates or products that undergo this process into or out of the active site, bounding the k_{cat}/K_M [“ k -cat over k -sub- M ”] ratio at roughly $10^{10} \text{ s}^{-1} \text{ M}^{-1}$ [“ten to the tenth per second per molar”].

ANSWER: **diffusion** (HK)

12. *Books of Overthrowing [this figure]* describe how to fight it, including by “spitting on it” and “defiling it with the left foot.” For 10 points each:

[10] Name this figure, whom the divine cat Mau decapitates with a knife in another depiction. In some versions, this figure was born from the spittle of the goddess Neith.

ANSWER: **Apep** [or **Apophis**]

[10] Luckily, Ra doesn’t have to fight Apep alone: his lieutenants include Set and this feline Lower Egyptian goddess who was later syncretized with Sekhmet.

ANSWER: **Bastet**

[10] As the “Eye of Ra,” Bastet and Sekhmet were associated with a yellow or red “disk” representing this celestial body. The powerful heat from this body in turn represents the Eye’s destructive potential.

ANSWER: **sun** (HK)

13. This scientist won the Nobel Peace Prize in 1975 for his dissident advocacy for human rights. For 10 points each:

[10] Name this nuclear physicist who led the team that produced the first Soviet hydrogen bomb. He later became an advocate for nuclear non-proliferation.

ANSWER: Andrei (Dmitrievich) **Sakharov**

[10] Hydrogen bombs produce most of their power from this type of nuclear reaction, in which light nuclei join together to form heavier ones. It is more difficult than the fission reaction used in Fat Man and Little Boy.

ANSWER: nuclear **fusion** [do **NOT** accept or prompt on “fission”]

[10] Along with Igor Tamm, Sakharov proposed the idea of this device. It uses a strong magnetic field to confine plasma within a torus, perhaps enabling its use in stable, practical fusion reactors.

ANSWER: **tokamak** (DM)

14. In his installation *Ghost Pounding [this Structure]*, artist Xú Bīng displayed rubbings from the Jinshānlǐng section of this structure. For 10 points each:

[10] Identify this colossal structure meant to keep out Xiōngnú invaders. Much of what remains today was constructed during the Ming Dynasty, including a section in Bādǎlǐng.

ANSWER: **Great Wall** of China

[10] This other contemporary Chinese artist constructed a series of fences throughout New York City in his *Good Fences Make Good Neighbors* installation. He also designed the Bird’s Nest Olympic stadium in Beijing.

ANSWER: **Ài Wèiwèi**

[10] Ài used porcelain to create over 100 million of these objects in a 2010 installation at the Tate Modern’s Turbine Hall.

ANSWER: **sunflower seeds** [prompt on **seeds**] (SL)

15. A “Diary of a Seducer” written by this man explores the voyeurism at the heart of the aesthetic life. For 10 points each:

[10] Name this author and philosopher whose works criticized his countryman N. F. S. Grundtvig’s notions of piety as being too easy to achieve. He often wrote under pseudonyms such as Johannes Climacus.

ANSWER: Søren (Aabye) **Kierkegaard**

[10] Kierkegaard was from this country, whose other Golden Age authors included Hans Christian Andersen.

ANSWER: **Denmark** [or Kingdom of **Denmark**; or Kongeriget **Danmark**]

[10] This founder of modern Danish and Norwegian literature premiered his plays *The Political Tinker* and *Gert Westphaler* in Copenhagen’s Lille Grønnegade Theatre in 1722.

ANSWER: Ludvig **Holberg** (DM)

16. This philosopher stated that “aesthetic experiences” are not only pleasurable but are a necessary precursor to “moral feeling.” For 10 points each:

[10] Name this philosopher who examined how judgements of taste paradoxically claim “subjectivity” and “universality” in a book that defines categories like the Agreeable, the Good, and the Sublime.

ANSWER: Immanuel **Kant**

[10] In his *Critique of Judgement*, Kant concludes that this quality is a “symbol of morality” and gives sensible form to moral ideas. In general, aesthetics is the study of this quality that a landscape or a work of art might possess.

ANSWER: **beauty** [accept word forms like **beautiful**]

[10] Kant distinguished the sublime from the beautiful using the example of one of these events. The ideas of Kant and Johann George Hamann influenced a literary movement named for “[this word] und Drang,” or “and stress.”

ANSWER: **storms** [accept **Sturm** und Drang] (MGS)

17. The Plan of Ayala was drafted and promulgated by this man, who sought land reform in his country’s state of Morelos. For 10 points each:

[10] Name this man who led the Liberation Army of the South and feuded with Francisco Madero in his country’s Revolution.

ANSWER: Emiliano **Zapata** (Salazar)

[10] Zapata was a revolutionary figure from this country. This country’s Revolution involved Zapata’s ally Pancho Villa and broke out when Porfirio Díaz declared himself president for an 8th term.

ANSWER: **Mexico** [or United **Mexican** States; or Estados Unidos **Mexicanos**]

[10] The modern-day Zapatista Army of National Liberation in Chiapas, inspired by Zapata’s agrarian reforms, is majority-run by these peoples. Also in Chiapas is this ethnic group’s city of Palenque.

ANSWER: **Maya** peoples [prompt on **Mexican Native** Americans, **indigenous** peoples, or similar answers] (MGS)

18. Name some things true of all prime numbers that are not 2, for 10 points each.

[10] All prime numbers besides 2 have this property, meaning that they can be written as $2k + 1$ for some positive integer k . Equivalently, numbers with this property are not divisible by 2.

ANSWER: **oddness**

[10] Two odd primes cannot have a difference smaller than the pairs of primes denoted by this term, which have a difference of two. The conjecture that there are infinitely many pairs of these primes remains unproven.

ANSWER: **twin** primes [accept **twin** prime conjecture]

[10] This theorem about the Legendre symbols of two primes, first proven by Gauss, unfortunately does not apply directly to 2. For odd primes p and q , it states that the Legendre symbol of q over p times that of p over q equals negative one raised to the power “ p minus 1 all over 2, times q minus 1 all over 2.”

ANSWER: law of **quadratic reciprocity** (DM)

19. The lines “I draw and kiss the bloody dart, / My last — my only friend!” highlight this man’s famously melancholy disposition. For 10 points each:

[10] Name this likely author of the 1838 poem “The Suicide’s Soliloquy.” In a poem by Vachel Lindsay, “it breaks [this man’s] heart that kings must murder still.”

ANSWER: Abraham **Lincoln**

[10] The 2017 Booker Prize-winning *Lincoln in the Bardo* follows Lincoln’s grief after the death of this type of person. In a poem, a woman tells this type of person “Life for me ain’t been no crystal stair.”

ANSWER: a **son** [accept “Mother to **Son**”; prompt on a **child** or a **boy**]

[10] This other American poet expressed his own grief after Lincoln’s assassination in works like “O Captain! My Captain!” and “When Lilacs Last in the Dooryard Bloom’d.”

ANSWER: Walt **Whitman** [or Walter **Whitman**] (DS)

20. Branches of this house include the most recent dynasties of Bulgaria, Portugal, and Belgium. For 10 points each:

[10] Name this house whose more notable members included Albert Edward, whose “age” is often said to span the first decade of the 20th century.

ANSWER: Saxe-**Coburg** and Gotha

[10] The most infamous Coburg was this man, who helped set up his cousin Prince Albert’s marriage to Queen Victoria. This “Builder King” funded his projects through the exploitation of a personal African colony.

ANSWER: **Leopold II** of Belgium [prompt on **Leopold**]

[10] Due to anti-German sentiment during WWII, the House of Saxe-Coburg and Gotha renamed itself for a London castle of this name under King George V. This is the name of the British ruling house today.

ANSWER: House of **Windsor** [accept **Windsor** Castle] (DM)

Tiebreaker

One poem by this man, which was cut from an anthology, begins “go, dumb-born book” and bids a woman to “live / As roses might.” For 10 points each:

[10] Name this poet of *Hugh Selwyn Mauberley* and *The Cantos* who advocated “direct treatment of the ‘thing’” in poetry. He was ostracized after returning to the U.S. from an American detainment camp in Pisa after WWII.

ANSWER: Ezra **Pound** [or Ezra Weston Loomis **Pound**]

[10] Bennett Cerf, co-founder of this publishing company, chose to omit Pound’s poetry from a 1945 anthology due to Pound’s antisemitism and fascist sympathies. This company merged with the Penguin Group in 2013.

ANSWER: **Random House**

[10] Cerf earlier defended this non-Pound work from an obscenity ban in a District Court trial. That ban was in part due to this novel’s “Nausicäa episode,” in which the protagonist is aroused by Gerty MacDowell’s legs.

ANSWER: **Ulysses** (By James Joyce.) (MGS)